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The President's Deregulatory Initiative - At a Glance

January 28, 1992 -- The President announced in his State of the Union Speech the 90 Day Moratorium and Review. In addition, he issued an explanatory memorandum to certain Department and Agency heads.

January 30, 1992 -- Deputy Secretary of Treasury, John Robson, IRS Commissioner, Fred Goldberg, and the Vice President announced several measures including Security and Exchange Commission reforms, to improve access to capital and to simplify the payroll tax system. These changes could substantially increase the amount of loans available and save significantly in regulatory costs.

January 30, 1992 -- The White House released a fact sheet entitled The President's Plan for reducing the Burdens of Regulation Through Administrative Action. The fact sheet is more detailed and explains the Administration's specific goals.

January 30, 1992 -- The Secretary of Labor instructed the Department to published regulations relating to the use of "helpers" on construction projects subject to the Davis-Bacon Act.

February 4, 1992 -- The Vice President issued his memorandum which outlined the various initiatives and the mechanics of the 90 Day Moratorium and Review.

February 14, 1992 -- EPA decided to allow broad use of "carcinogenic" pesticides. EPA found that the risks posed by these chemicals had been overestimated.

February 18, 1992 -- The FCC Commissioners discussed proposals that the Commission is considering which would boost the economy. The two most notable were a proposal to accelerate the depreciation rates for phone companies and a proposal which would ease ownership limits on radio and television stations.

February 18, 1992 -- The SEC announced proposals to reduce, and in some cases eliminate, the public disclosure requirements for small companies that issue stock. Among others, a proposal was introduced to raise from \$500,000 to \$1 million the amount that can be raised through stock offerings without registering with federal or state authorities for "seed money". Their new proposals would also make it easier for mutual funds to invest in small and new businesses.

February 19, 1992 -- EPA set a specific timetable to narrow the scope of two hazardous-waste rules which it has determined to be

excessively stringent. This change could save more than \$2.0 billion per year.

February 24, 1992 -- In response to the President's Deregulatory Initiative, Don Clay, a top official at EPA, proposed changes in the laws for cleaning up toxic waste sites. The new laws would "significantly decrease the regulatory reach "of hazardous waste laws.

February 24, 1992 -- The White House issued new Government policy on biotechnology products stating that genetically engineered products are not inherently dangerous; and that safe, new drugs, agricultural products, and organisms which help clean the environment should be commercialized without excessive scrutiny from federal regulators.

February 26, 1992 -- FCC staff proposed abolishing limits on how many radio stations nationwide that one owner can own.

THE WHITE HOUSE

WASHINGTON

January 28, 1992

MEMORANDUM FOR CERTAIN DEPARTMENT AND AGENCY HEADS

SUBJECT: Reducing the Burden of Government Regulation

As you know, excessive regulation and red tape have imposed an enormous burden on our economy -- a hidden tax on the average American household in the form of higher prices for goods and services. Just as Americans have the right to expect their government to spend tax dollars wisely, they have the right to expect cost-effective and minimally burdensome regulation. Although the Congress has thus far failed to pass most of the Administration's regulatory reform proposals, there is much the Administration can and should do on its own to reduce the burden of regulation.

A major part of this undertaking must be to weed out unnecessary and burdensome government regulations, which impose needless costs on consumers and substantially impede economic growth. We must be constantly vigilant to avoid unnecessary regulation and red tape.

We must also remember that even those regulatory programs that may have been justified when adopted often fail to keep pace with important innovations. New technologies and markets can quickly make existing rules obsolete. By the same token, existing regulations often impose unnecessary constraints on emerging technologies and markets that could not have been foreseen at the time the regulations were promulgated. Existing regulatory programs also need to be revised to take advantage of regulatory innovations, such as the flexible, market-based approaches to regulation that many of your agencies have developed over the past few years.

I am concerned that, because of the constant pressure to develop new programs, we are not doing nearly enough to review and revise existing programs. For that reason, I ask that each of your agencies set aside a 90-day period, beginning today, to evaluate existing regulations and programs and to identify and accelerate action on initiatives that will eliminate any unnecessary regulatory burden or otherwise promote economic growth. During this period, agency resources should, to the maximum extent possible, be devoted to these efforts. Specifically, I request that you take the following steps:

1. During the 90-day review period, your agency should work with the public, other interested agencies, the Office of Information and Regulatory Affairs, and the Council on Competitiveness to (i) identify each of your agency's regulations and programs that impose a substantial cost on the economy and (ii) determine whether each such regulation or program adheres to the following standards:
 - (a) The expected benefits to society of any regulation should clearly outweigh the expected costs it imposes on society.
 - (b) Regulations should be fashioned to maximize net benefits to society.
 - (c) To the maximum extent possible, regulatory agencies should set performance standards instead of prescriptive command-and-control requirements, thereby allowing the regulated community to achieve regulatory goals at the lowest possible cost.
 - (d) Regulations should incorporate market mechanisms to the maximum extent possible.
 - (e) Regulations should provide clarity and certainty to the regulated community and should be designed to avoid needless litigation.
2. To the maximum extent permitted by law, and as soon as possible, your agency should propose administrative changes (including repeal, where appropriate) that will bring each regulation and program into conformity with the standards set forth above. As you implement these proposals, you should carefully order your agency's regulatory priorities to ensure that programs imposing the largest unnecessary burden are the first to be revised or eliminated.
3. You should designate, in consultation with the Council on Competitiveness, a senior official to serve as your agency's permanent regulatory oversight official. This person will be responsible for conducting the review, for implementing the resulting proposals, and for ensuring that future regulatory actions conform to the standards set forth in this memorandum and in applicable Executive orders.
4. To the maximum extent permitted by law, and subject to the exceptions listed below, your agency should refrain from issuing any proposed or final rule during the 90-day review

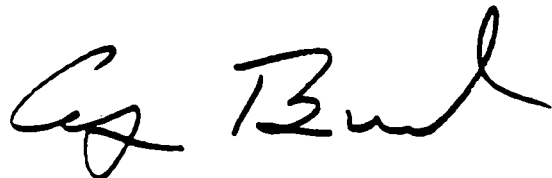
THE SECRETARY OF THE TREASURY
THE SECRETARY OF DEFENSE
THE ATTORNEY GENERAL
THE SECRETARY OF THE INTERIOR
THE SECRETARY OF AGRICULTURE
THE SECRETARY OF COMMERCE
THE SECRETARY OF LABOR
THE SECRETARY OF HEALTH AND
HUMAN SERVICES
THE SECRETARY OF HOUSING AND
URBAN DEVELOPMENT
THE SECRETARY OF TRANSPORTATION
THE SECRETARY OF ENERGY
THE SECRETARY OF EDUCATION
THE CHAIRMAN OF THE INTERSTATE
COMMERCE COMMISSION
THE CHAIRMAN OF THE BOARD OF GOVERNORS OF
THE FEDERAL RESERVE SYSTEM
THE CHAIRMAN OF THE FEDERAL TRADE COMMISSION
THE CHAIRPERSON OF THE FEDERAL DEPOSIT
INSURANCE CORPORATION
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TRADING COMMISSION
THE CHAIRMAN OF THE FEDERAL ENERGY
REGULATORY COMMISSION

period. This moratorium on new regulations will ensure that, to the maximum extent possible, agency resources are devoted to reducing the regulatory burden on the economy. Of course, you should not postpone any regulation that is subject to a statutory or judicial deadline that falls during the review period. This moratorium does not apply to:

- (a) regulations that you determine, after consultation with the working group of the Council on Competitiveness described below, will foster economic growth;
 - (b) regulations that respond to emergencies such as situations that pose an imminent danger to human health or safety;
 - (c) regulations that you determine, after consultation with the working group of the Council on Competitiveness described below, are essential to a criminal law enforcement function of the United States;
 - (d) regulations issued with respect to a military or foreign affairs function of the United States;
 - (e) regulations related solely to agency organization, management, or personnel; and
 - (f) formal regulations required by statute to be made on the record after opportunity for an agency hearing.
5. At the end of the review period, each agency should submit a written report to me. Each report should indicate the regulatory changes recommended or made during the review period and the potential savings to the economy of those changes, including an estimate of the number of jobs that will be created. It should also include a summary of any regulatory programs that are left unchanged and an explanation of how such programs are consistent with the regulatory standards set forth in paragraph 1 above.

The 90-day review, and the preparation of the reports described in paragraph 5 above, will be coordinated by a working group of the Council on Competitiveness, chaired by the Chairman of the Council of Economic Advisers and the Counsel to the President.

I look forward to your reports on this important undertaking. I am confident that, with your help, the executive branch can do much to create conditions conducive to a healthy and robust economy.





THE VICE PRESIDENT
WASHINGTON

February 4, 1992

MEMORANDUM FOR CERTAIN DEPARTMENT AND AGENCY HEADS

FROM: THE VICE PRESIDENT

SUBJECT: Reducing the Burden of Government Regulations

In his State of the Union Address President Bush announced a comprehensive program to review existing and upcoming agency programs and regulations to remove unnecessary regulatory burdens that impose needless costs on consumers, cost jobs, and impede economic growth. He asked a working group of the Council on Competitiveness, chaired by Chairman Michael Boskin of the Council of Economic Advisers and Counsel to the President C. Boyden Gray, to coordinate this review.

The President requested that you accelerate issuance of any regulations that encourage growth and increase the creation of jobs. Many of these initiatives -- such as improving access to capital, small business reform, energy and the environment, transportation, exports, communications, biotechnology, and Federal regulations affecting private property, among others -- require coordination among several agencies.

Many such initiatives are already underway in several agencies. For example, last week Deputy Secretary of the Treasury John Robson and outgoing IRS Commissioner Fred Goldberg joined me in announcing several measures, including Security and Exchange Commission reforms, to improve access to capital and to simplify the payroll tax system. With your help, we will have many more initiatives to announce at various points during the 90-day review period.

The President has also requested that during the 90 days you review all existing and planned regulations and programs to determine whether they are consistent with his regulatory principles, and prepare a report describing the results of that review. I want to work with you in developing these reports, which should include regulatory changes to reduce economic burdens and create jobs that you plan to make after the review period ends.

Finally, as you know, in order to allow you to devote the maximum agency resources possible to the review, the President has requested that you refrain from issuing new regulations during the 90-day period unless they come within one of the exceptions in the President's memorandum of January 28, 1992. Of course, the existing procedures of the Paperwork Reduction Act, Executive Order 12291, and Executive Order 12498 will continue to apply to the agencies covered thereby.

I also ask that you implement the President's request to designate a permanent regulatory oversight official for your agency, after consultation with the Council, by the end of this week.

I have asked the Chairmen of the Council's working group and the Council's Executive Director, David McIntosh, to meet with you or your designee in the next few days to facilitate inter-agency cooperation in developing pro-growth regulatory initiatives, to discuss your ideas for the reports to the President containing the results of the review of your regulations, to develop an initial list of priorities and a schedule for their completion, and to answer any questions you may have.

The President's request provides an exciting opportunity for creative thought about how to reduce the burden of excessive regulation and unnecessary red tape. I am looking forward to working with each of you personally to take advantage of this opportunity.

THE SECRETARY OF THE TREASURY
THE SECRETARY OF DEFENSE
THE ATTORNEY GENERAL
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THE WHITE HOUSE

Office of the Press Secretary

January 30, 1992

THE PRESIDENT'S PLAN FOR REDUCING THE BURDENS OF REGULATION
THROUGH ADMINISTRATION ACTION

FACT SHEET

Regulatory reform is a key element of the economic growth package the President laid out in his State of the Union address. The President explained why in a speech he gave in Philadelphia today:

"Every regulation that reduces efficiency slaps a hidden tax on the consumer From the tab on a bag of groceries at the checkout line to the sticker price on the showroom floor -- every American takes a hit when the government over-regulates."

Although Congress has thus far refused to pass most of the Administration's regulatory reform proposals -- including those in banking and energy -- there is much the Administration can do and will do on its own to reduce the burden of regulation. Following up on the President's request that federal agencies accelerate programs that enhance economic growth, the Administration today announced the details of several specific reform initiatives to spur growth and enhance job creation, particularly by small and emerging businesses.

Today, the President also described the comprehensive, 90-day review of federal regulation that he announced in his State of the Union address: "We will undertake a top-to-bottom review in the fields of energy, the environment, transportation, exports, financial services, and communications, among others." During this 90-day period, federal agencies will "accelerate any regulations that encourage growth and the creation of jobs." Agencies will also adhere to a 90-day moratorium on regulations that could hinder growth, to the extent they can do so without violating statutory deadlines or threatening health and safety.

I. SPECIFIC ADMINISTRATIVE ACTIONS

The President announced several concrete steps that the Administration will take within the next 30 days to promote economic growth and pare down unnecessary government red tape and other regulatory costs. These fall into two broad categories: improving access to capital, and improving the economic climate for small business.

A. Improving Access to Capital.

Passage of the Administration's proposed banking reform legislation is the best way to resolve the "credit crunch" that has impeded economic growth and job creation. However, the Administration has recently taken actions under existing law to alleviate this problem. And it has recently proposed rules to permit federal thrifts to branch across state lines (thereby enhancing these institutions' financial health) and to make more credit available for home construction. Building on these efforts, the President has asked all federal agencies with authority over financial institutions carefully to review their regulatory programs and to implement additional measures that will promote access to capital -- both debt and equity -- without weakening the Nation's financial system.

In addition to these efforts, federal agencies will take the following administrative steps to improve businesses' access to capital, and thereby create jobs and enhance economic growth:

- o Banking Reform. The bank and thrift regulatory agencies will enhance the ability of banks and thrifts to raise additional capital by:
 - promptly promulgating a proposed rule permitting financial institutions to include a greater percentage of the value of purchased mortgage servicing rights and credit card relationships as Tier One Capital;
 - phasing out the supervisory definition of "highly-leveraged transactions" for banking companies, which will enhance many businesses' access to debt capital; and
 - reducing unnecessary regulatory burdens on thrifts by streamlining application procedures for healthy institutions and by reducing financial reporting requirements from twelve to four times per year.

At the same time, the FDIC will implement the new risk-based premium system ahead of the deadline authorized by last year's banking legislation, and in a manner that provides clear guidance to banks and does not arbitrarily expand bank examiners' discretion. Healthy banks should be rewarded with lower premiums, which in turn can generate new lending to help fuel the economy without endangering the FDIC's insurance fund.

- o Securities Reform. The Securities and Exchange Commission will undertake to simplify registration

requirements, reduce costs, and improve access for small businesses seeking capital from securities markets by proposing rules to:

- increase the maximum size for public offerings under the streamlined procedures of SEC Regulation A from \$1.5 million to \$5 million;
 - create a simplified securities registration form designed for easy use by small businesses; and
 - reduce regulatory paperwork under the Investment Company Act and expand the number of companies eligible for investment by Business Development Companies and Small Business Investment Companies.
- o Clarification of Lender Liability Under Superfund. Businesses often have difficulty obtaining loans for many projects because of a fear on the part of banks that they will be saddled with liability under the federal Superfund law for environmental damage done by their borrowers. To alleviate these concerns and thereby improve the lending climate nationwide, the Environmental Protection Agency (EPA) will promulgate its final rule clarifying lenders' liability under Superfund.
- o These steps will provide billions of dollars in additional capital to the Nation's economy.

B. Creating A Better Climate For Small and Emerging Businesses.

Many regulations have a disproportionate impact on small businesses, which account for a large percentage of domestic employment and have a disproportionate impact on economic growth. The President has therefore asked all major federal regulatory agencies to examine their existing regulations and weed out or modify those that impose an undue economic burden on small business.

The following steps, which will be taken by the appropriate agencies during the next 30 days, are examples of the kinds of actions the Administration will take during the next few months to spur the growth of small and emerging businesses:

- o Payroll Tax Reform. One of the barriers to increased employment and higher economic growth is the payroll tax system, which imposes billions of dollars per year in compliance costs. This burden falls disproportionately on small and emerging businesses. To reduce this burden, the Administration strongly supports certain features of the payroll tax simplification legislation now pending in Congress.

- The proposed legislation (H.R. 2775 and S. 1610) would substantially simplify the payroll tax system, reduce uncertainty, and reduce the number of payroll tax deposits that small employers must make.

In addition, the Department of Treasury, in cooperation with the Department of Health and Human Services, will reduce the economic burden of the payroll tax system by:

- establishing a single wage reporting system that will eliminate the need for employers to make multiple federal and state filings;
- establishing a voluntary program that will allow businesses to verify tax information (such as employee social security numbers) by a simple telephone call, thus eliminating burdensome paperwork and correspondence with the IRS;
- establishing a voluntary electronic payment system that will allow employers, at their option, to make payroll tax contributions directly from the employer's bank account to a designated Treasury account, thereby eliminating substantial paperwork costs; and
- through the IRS's Compliance 2000 program, helping small and emerging businesses voluntarily meet their obligations through clearer guidance and increased taxpayer assistance, education and outreach efforts, thus reducing the need for after-the-fact enforcement.

o Trucking Reform. Many businesses rely heavily upon trucks to carry their goods to customers. To reduce the costs of truck transportation, and to reduce regulatory burdens on some 52,000 mostly small owner/operators currently regulated by the federal government, the Interstate Commerce Commission will begin or complete rulemaking proceedings to:

- further deregulate motor contract carriage by repealing the regulatory definition of "contract" and relying instead upon the statutory definition;
- abolish the requirement that trucking companies keep a unique set of "regulatory" accounting books in addition to standard financial and tax records; and

- deregulate truck transportation in large metropolitan areas by expanding "commercial zones."
- o Together, these steps will eliminate billions of dollars a year in regulatory costs, thereby making American businesses more competitive and increasing employment.

II. REGULATORY REVIEW

The above initiatives are examples of reforms the Administration will implement as a result of an intensive, 90-day review launched today by the President. The review will be coordinated by a working group of the Council on Competitiveness, chaired by Council of Economic Advisers Chairman Michael J. Boskin and Counsel to the President C. Boyden Gray. The review will proceed as follows:

- o In accordance with the President's request, the heads of the major federal regulatory agencies will set aside a 90-day period to review regulations and programs that may hinder economic growth, and to identify and accelerate action on initiatives that will reduce the burden of existing regulations or otherwise promote economic growth.
- o During this 90-day period, each agency will work with other agencies and the Council on Competitiveness to identify regulations and programs that significantly reduce jobs or otherwise impose a significant burden on the economy. Each such regulation or program will be carefully reviewed to determine whether it satisfies five requirements:
 - the expected benefits to society should clearly outweigh the costs to society;
 - the regulation should be fashioned to maximize net benefits to society;
 - to the maximum extent possible, the regulation should rely upon performance standards instead of prescriptive command-and-control requirements;
 - to the maximum extent possible, the regulation should rely upon market mechanisms;
 - the regulation should provide clarity and certainty to the regulated community and should be designed to avoid needless litigation.
- o To the extent permitted by law, and as soon as possible, each agency will propose administrative changes that will bring each of its existing and proposed regulations into

conformity with these standards. Each agency will report the results to the President.

- o Where statutes impose regulatory requirements that do not conform to the standards discussed above, agencies will prepare draft legislation to bring the law into compliance with those standards.
- o The head of each agency will designate a senior official to serve as a permanent regulatory oversight official. This official will have responsibility for conducting the comprehensive review, implementing the resulting proposals, and ensuring that new regulations comply with the standards discussed above.
- o To the extent permitted by law, and without imperiling health or safety, each agency will refrain from proposing or issuing new regulations and programs that retard economic growth, while accelerating development and implementation of those that promote economic growth.

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THE WHITE HOUSE
Office of the Press Secretary

EMBARGOED FOR RELEASE
AND WIRE TRANSMISSIONS
UNTIL 9:00 PM (EST)
TUESDAY, JANUARY 28, 1992

THE PRESIDENT'S STATE OF THE UNION ADDRESS

FACT SHEET

The President in his State of the Union Address spoke about America's unique place in the world and about his plans for restoring growth in America's economy. He challenged the Congress to pass his economic growth package by March 20.

Previously, the President had identified five tests for evaluating proposals for restoring economic growth:

- Does the proposal stimulate the investment necessary to create jobs?
- Does it bolster real estate values and increase home sales?
- Does it give Americans confidence they will be able to afford the cost of raising a family, including meeting their education and health care expenses?
- Does it increase America's capacity to compete in the global economy?
- Does it control wasteful government spending and work to reduce the Federal deficit?

The President's agenda meets these tests. In his State of the Union address, the President outlined three broad themes:

- Securing a New World Order;
- Getting the Economy Moving: The Short-Term Agenda; and
- Securing America's Future: The Longer-Term Agenda.

The following is a summary of the initiatives announced by the President.

I. SECURING A NEW WORLD ORDER

The President noted the historic American victory in the Cold War, and paid tribute to the "roll call of honor" -- the long list of servicemen and women who fought faithfully for freedom. He also acknowledged the role of the American taxpayer in bearing the brunt of the burden of providing resources to fight the Cold War. While threats still exist, the President observed that Operation Desert Storm demonstrated the good that can come from the "prudent use of power".

The President said that, with Communism gone, plans for cutting military spending can be accelerated. He announced that he has approved an additional \$50 billion in defense savings through fiscal year 1997.

The President has told President Yeltsin that the United States is prepared to respond in kind if Russia eliminates all land-based multiple warhead ballistic missiles and reduces its strategic nuclear forces. Specifically, the United States would eliminate all Peacekeeper missiles and reduce the number of warheads on Minuteman missiles to one. We would also reduce the number of warheads to be deployed on our Trident submarine force by about one-third and would convert a substantial portion of our strategic bombers primarily to conventional use.

The President also announced the following steps that the United States will take unilaterally:

A. Limiting Production of the B-2 Bomber.

After completing the 20 B-2 stealth bombers for which airframe procurement has begun, we will stop further production. There were 75 B-2 bombers in the previous plan. Because of the changes in the Soviet threat, America's strategic bomber force is less likely to face the sophisticated air defenses for which the B-2 was designed. Current bomber forces, including B-1B and B-52 aircraft, can be adapted to ensure adequate capabilities for strategic nuclear and conventional missions. Proposed savings are \$14.5 billion through 1997.

B. Cancelling the Small ICBM Program.

The small ICBM will be terminated. The guidance system for existing Minuteman III missiles will be improved and the service life of these missiles will be extended. Projected savings are \$1 billion through 1997.

C. Ceasing Production of New Warheads for Sea-Based Ballistic Missiles.

The Department of Energy will cease production of W-88 warheads for Trident missiles. This will be the first time since 1945 that the United States has no nuclear weapons in production.

D. Halting Purchases of Advanced Cruise Missiles.

Procurement will be terminated after 1992 at a total of 640 missiles, instead of the planned 1,000 missiles. This reflects reductions in the strategic target base and in the strategic threat. Projected savings are \$1.3 billion through 1997.

E. Stopping New Production of Peacekeeper Missiles.

For the second year in a row, the President will recommend no funds for the production of additional Peacekeeper missiles.

The President noted that he has consulted on these cuts with the Joint Chiefs of Staff and is acting on the recommendation of Secretary Cheney. He observed that, with the proposed cuts, by 1997 we will have reduced defense expenditures by thirty percent since he took office. The President underscored his resolve to resist further reductions as inconsistent with America's security interests and world leadership responsibilities. He declared that "as long as I am President we will continue to lead in support of freedom everywhere."

II. GETTING THE ECONOMY MOVING: THE SHORT-TERM AGENDA

The President declared that "we can bring the same courage and sense of common purpose to the economy that we brought to Desert Storm. And we can defeat hard times together." He identified a series of immediate actions necessary to get America back to work. He is taking several actions on his own authority. Other actions require the cooperation of Congress.

A. Actions the President Is Taking on His Own Authority.

The President has previously proposed several major growth-oriented legislative initiatives, such as his banking reform and energy bills, and he has urged the Congress to act on them. There is, however, much the Administration can and will do on its own to promote economic growth. For example, the Administration will continue to take steps to alleviate the

credit crunch. Similarly, it will continue to cut back excessive and misguided regulations that impose a large burden on the economy -- a hidden tax on American households in the form of higher prices for goods and services.

1. Regulatory Review.

The financial services reforms, tax proposals, and other regulatory initiatives listed below are just part of the intensive 90-day period of review and reform launched tonight by the President.

- The heads of the major Federal regulatory agencies will undertake a 90-day review of regulations and programs that may hinder economic growth and will identify and accelerate action on initiatives to reduce the burden of existing regulations or otherwise promote economic growth.
- To the extent permitted by law, each agency will refrain from proposing or issuing new regulations and programs that retard economic growth. This moratorium will be implemented without undermining health and safety and will not prevent compliance with statutory or judicial deadlines.

2. Alleviating the Credit Crunch.

The President is continuing his efforts to ensure that creditworthy businesses and individuals have access to funds for productive investments. Federal agencies are taking the following administrative steps to increase the availability of capital throughout the economy:

- The Administration is proposing to remove certain geographic restrictions on Federal thrift institutions.
- The bank and thrift regulatory agencies are enhancing the ability of banks and thrifts to raise additional capital by, among other things, removing certain restrictions on the assets that institutions can count as "Tier One" capital.
- The FDIC will implement ahead of schedule the new risk-based premium system for deposit insurance. Healthy banks will be rewarded with lower premiums

which, in turn, can help generate new lending without endangering the FDIC's insurance fund.

- The Securities and Exchange Commission will shortly propose rules to simplify registration requirements, reduce costs, and enhance the ability of small businesses to obtain capital from securities markets.
- To alleviate the concern of lenders that they will be saddled with liability under the Superfund law for environmental damage done by their borrowers, the Environmental Protection Agency will promulgate its final rule clarifying lenders' liability under Superfund.

3. Accelerating Agency Pro-Growth Initiatives.

The President has directed every cabinet Department and agency to get funds into pro-growth initiatives as quickly as possible. This should put an extra \$10 billion into the economy in the next 6 months. As part of this effort, he has directed the Department of Transportation to disburse quickly to state and local governments funds for highway and transit projects authorized by the recently signed Surface Transportation Act.

4. Reforming Federal Income Tax Withholding.

The Treasury Department will adjust IRS withholding tables to reduce the amount of over-withholding on low- and middle-income wage earners.

- This change will increase take-home pay by \$300, on average, for more than 90 million wage earners. Increases will range from around \$175 for single individuals to more than \$600 for two-income families.
- This change will increase wage earners' take-home pay by about \$25 billion in the coming year.
- This change is permanent. Over-withholding has crept into the system over time.
- More than 85 percent of taxpayers currently receiving refunds will continue to receive refunds, although smaller ones.

- Later this year, the IRS will contact those taxpayers who could owe tax, or additional tax, as a result of this change. The IRS will advise these taxpayers how to adjust their withholding to avoid owing the government money in April.
- Wage earners can elect not to change the amount withheld from their paycheck by reducing the withholding allowances they claim with their employers.

5. Reforming The Federal Payroll Tax System.

One of the barriers to increased employment and higher growth -- particularly of small and emerging businesses -- is the payroll tax system, which imposes billions of dollars per year in compliance costs. In addition to supporting tax simplification legislation now pending in Congress, the Department of the Treasury, in cooperation with the Department of Health and Human Services, will reduce the economic burden of the payroll tax system by abolishing and modifying requirements and procedures that needlessly increase employer costs.

6. Supporting Sound Monetary Policy.

The President pledged that his Administration would "continue to support monetary policy that keeps both interest rates and inflation down." The rate of inflation was 3.1 percent in 1991, the second-lowest level since 1967, and interest rates are now at their lowest level in two decades.

B. Actions That Require the Cooperation of Congress.

The President proposed a number of steps to encourage increased job-creating investment and saving and promote economic growth while maintaining budget discipline. Some of these measures are designed to have an immediate impact, while others are intended to provide a more permanent increase in the Nation's investment in productive assets.

1. Encouraging Investment and Saving.

To encourage increased investment and saving, the President proposed changes in the Tax Code.

- Creating an Investment Tax Allowance. To stimulate an immediate increase in investment in productive assets, the President proposed an additional 15 percent first-year depreciation allowance for certain property acquired between February 1 and December 31, 1992, and placed in service by June 30, 1993.
 - The additional depreciation allowance applies for both regular and alternative minimum tax purposes.
 - The additional allowance applies to machinery, equipment and the like (so-called "Section 1245 property").
 - A taxpayer's basis in qualifying property is reduced by the amount of the investment tax allowance.
- Simplifying and Enhancing Alternative Minimum Tax Depreciation. The President proposed a permanent modification to the alternative minimum tax (AMT) rules that would simplify the law and provide additional investment incentives.

Firms that pay taxes under the AMT currently receive less tax benefit from depreciation than other firms. The President proposes to repeal the "adjusted current earnings" (ACE) depreciation adjustment for firms placing new equipment in service on or after February 1, 1992. The current depreciation adjustment used to compute the ACE penalizes capital-intensive companies, such as airlines, chemicals, paper, motor vehicles, and steel when they buy equipment to modernize, expand capacity or meet the challenge of international competition.

2. Stimulating the Real Estate Market and Home Ownership.

The President called for enactment of several proposals affecting real estate. These proposals, coupled with other elements of the President's economic growth plan and the availability of low mortgage interest rates, will bolster residential and commercial real estate values and assist low- and middle-income families in buying homes and meeting their housing needs.

- Providing a Temporary Tax Credit for First-Time Homebuyers. The President has proposed a temporary tax credit for first-time homebuyers.

- The credit would be 10 percent of the purchase price of a home, up to a maximum of \$5,000.
- Half the credit would be allowed in the year the residence is purchased (1992) and half in the succeeding year (1993).
- The tax credit would be effective for homes purchased between February 1 and December 31, 1992.
- A "first-time homebuyer" would include any individual not owning a home during the previous three years.

- Using IRAs for First-Time Home Purchases. The President also proposed to waive the 10 percent penalty for withdrawals from Individual Retirement Accounts for first-time homebuyers.

- Amounts up to \$10,000 could be withdrawn from Individual Retirement Accounts for a first-time home purchase. If both spouses have IRAs, each can make withdrawals, so the total can be as high as \$20,000.

- Modifying Certain Passive Loss Rules Affecting Real Estate Developers. The President proposed allowing developers actively engaged in the real estate business to offset non-rental income with rental losses from properties they developed.

- Under the "passive loss" rules, rental losses can only offset "passive" income.
- As a result, many real estate developers cannot use rental losses from properties they have developed to offset income from other profitable parts of their business.

3. Cutting the Capital Gains Tax Rate.

To encourage investment for a more competitive America, the President proposed a permanent exclusion of up to 45 percent of the capital gain on the sale of an asset,

resulting in a maximum tax rate on long-term capital gains of approximately 15 percent.

- The proposal would be phased in over three years. Eventually, only assets held for at least 3 years would qualify for the 45 percent exclusion; assets held between 2 and 3 years would qualify for a 30 percent exclusion; assets held between 1 and 2 years would qualify for a 15 percent exclusion.
- In general, all capital assets held by individuals, except collectibles, would be eligible for the capital gains exclusion. Corporations would not be able to claim the exclusion.

4. Extending Federal Unemployment Benefits.

The President is proposing legislation to make two changes to the emergency unemployment compensation program enacted on November 14, 1991. First, the expiration date of the program would be extended for five additional months of benefits. Second, the President is proposing to enable all states to pay an additional 13 weeks of benefits through June 13, 1992. The President asked the Congress to work with him and act immediately.

III. SECURING AMERICA'S FUTURE: THE LONGER-TERM AGENDA

The President stated that "we need long term improvement in our nation's economic position." He proposed the following steps to "guarantee our future."

A. Expanding Trade and Opening Markets for American Exports.

Open markets around the world mean expanded export opportunities for U.S. entrepreneurs, greater profits for our businesses, new jobs for our workers, lower prices and greater choices for our consumers, and a better standard of living for all Americans.

1. Concluding the Uruguay Round GATT Negotiation.

A successful conclusion to the Uruguay Round will:

- Reduce tariffs and non-tariff barriers by a third, thereby pumping \$5 trillion into the global economy over the next decade;

- Sharply cut the theft of America's best ideas, now estimated at \$60 billion annually through the infringement of our patents and copyrights, and the counterfeiting of our trademarks;
- Create new opportunities for America's service industries, which export \$115 billion annually and create 90 percent of our new jobs; and
- Expand trade for American farmers, who are already the world's most productive, with more than \$40 billion in annual exports.

2. Negotiating a North American Free Trade Agreement.

The negotiations now underway on a free trade area throughout North America will create one of the world's largest markets, with 360 million producers and consumers and \$6 trillion in annual output. Partly due to the promise of the free trade area, U.S. exports to Mexico have doubled since 1986, creating 320,000 additional jobs.

3. Implementing the Enterprise for the Americas Initiative.

President Bush introduced the Enterprise for the Americas Initiative in June 1990 to promote continued growth and stability throughout the Western Hemisphere. The Initiative stimulates economic reform by encouraging open markets for both trade and investment, and by helping to reduce debt burdens in the region. Congressional action is needed to implement this initiative.

B. Revolutionizing American Education.

The President stated that "we must revolutionize America's schools," and how we care for our children outside the schools. He emphasized the importance of the parental choice proposals contained in his AMERICA 2000 strategy. He called for giving teachers more flexibility in spending Federal monies and helping communities create break-the-mold New American Schools.

Since it was launched in April 1991, 30 states and over 1,000 communities have joined the AMERICA 2000 crusade to help move the country community-by-community toward the six national education goals.

In his 1993 budget, the President is proposing the largest increase for any Federal discretionary program for the Department of Education -- bringing it to a level 42 percent above FY 1989 discretionary spending.

C. Investing in Research, Development and Technological Innovation.

The President declared that "we must make common sense investments that will help us compete, long term, in the marketplace."

1. Encouraging Private Research and Development.

The President proposes to make permanent the current 20 percent research and experimentation credit and extend the current research and experimentation sourcing rules through December 31, 1993.

2. Increasing Federal Support for Emerging Technologies.

Investments in research and development form the foundation for the exploration of all of the new frontiers of today and tomorrow. The President's budget proposes \$76.5 billion in research and development expenditures for 1993. This funding will support investments to expand the frontier of knowledge in such areas as biotechnology, materials science, and high performance computing.

D. Combatting Violent Crime.

The President's plan for building strong neighborhoods supports his serious, all-out assault on crime and drug abuse. He noted that violent crime "saps our strength and hurts our faith in our society, and in our future together."

The President called upon Congress to pass his comprehensive crime bill which, he said, is "tough on criminals and supportive of police." The proposed Comprehensive Violent Crime Control Act's key elements include:

- An enforceable Federal death penalty;
- Reform of habeas corpus procedures;
- Reform of the exclusionary rule; and

- Enhanced penalties for crimes committed with a firearm.

E. Expanding Opportunity for Individuals and Families.

1. Increasing Home Ownership: Homeownership and Opportunity for People Everywhere (HOPE).

The President challenged Congress to fund fully his HOPE proposals.

- HOPE offers opportunities for homeownership and resident management of public and assisted housing.
- The program also includes "Shelter Plus Care" to provide help to those homeless who need support services, such as mental health care, to achieve dignified and independent lives.
- The President's budget proposes an increase of 102 percent in the HOPE program, to a level of \$4.8 billion. Over the past three years, Congress has cut funds requested by the President for HOPE by more than \$300 million.

2. Creating Job Opportunities: Enterprise Zones.

The President called on Congress to pass his Enterprise Zones legislation, which he first transmitted to Congress on July 26, 1989.

- The Enterprise Zones initiative would target tax incentives and regulatory relief to some of the nation's most economically depressed areas.
- Under the President's proposal, 50 areas would be chosen to become enterprise zones. In these zones, workers would receive tax credits against their income taxes, capital gains would be eliminated on investments, and expensing rules for capital investments would be liberalized.

3. Extending Tax Preferences for Low-Income Housing and Mortgage Revenue Bonds.

The President proposed to extend the low-income housing tax credit and the authority for state and local

governments to issue mortgage revenue bonds through December 31, 1993.

4. Investing in Our Children.

The President asked for support for his proposal to fund Head Start at record high levels.

- The President's fiscal year 1993 budget proposes \$2.8 billion in funding for Head Start, the largest increase (\$600 million) in the program's history. The President's proposal would allow the comprehensive pre-school program to serve more than 779,000 low-income children, which includes all eligible four-year-olds whose parents choose for them to participate.
- The President's 1993 budget requests over \$100 billion for programs that help children, including Head Start. This represents a 66 percent increase since 1989.

F. Reforming our Health Care System.

The President called for reforming our health care system. He rejected a government takeover of the health care system, or plans that would:

- Deny patient choice in picking a health plan;
- Ration health care services;
- Burden small business with expensive new mandates; or
- Require tax increases.

The President announced that he will propose a plan to reform our health care system that would:

- Preserve and increase the idea of choice.
- Make basic health care insurance affordable for low-income people not now covered, through a transferable health insurance credit (voucher) that would be as large as \$3,750 per family;
- Provide insurance security for workers moving between jobs;

- Bring costs under control;
- Help middle-class Americans pay for health insurance with a tax deduction; and

The full details of the President's comprehensive health care plan will be presented within the next two weeks.

G. Controlling Federal Spending.

The President announced several initiatives to bring Federal spending under control by building on the budget discipline imposed by the Budget Enforcement Act of 1990.

1. Freezing Domestic Discretionary Budget Authority.

The budget authority in the President's 1993 Budget will be at the level of 1992 budget authority -- a nominal freeze on discretionary spending. Because of savings on defense expenditures, total discretionary budget authority will decrease.

2. Capping the Growth of Uncontrolled Spending.

The President proposed establishing a mechanism to control the automatic growth in spending for existing entitlement and other mandatory programs.

3. Freezing Federal Employment for Non-Defense Agencies.

Total full-time equivalent positions in non-defense agencies for 1993 will not exceed the 1992 level. Because of defense employment reductions, the Federal workforce will shrink by almost 4 percent.

4. Terminating Federal Programs.

The President presented Congress with a list of 246 Federal programs that do not deserve funding and asked Congress to abolish them. The total savings would be almost \$5 billion in fiscal year 1993.

5. Adopting a Line-Item Veto.

The current budget process encourages special interest spending. The President should have the power to defend the general interest by striking from appropriations legislation any provisions that reflect only narrow interests.

6. Ending Unfinanced Federal Government Mandates.

The President asserted that Congress should pay for any mandated policies, programs, or activities that it imposes on our cities, counties, or states.

H. Enacting Bold Reform Proposals.

The President challenged Congress to enact four major reform proposals still awaiting Congressional action -- bank reform, civil justice reform, tort reform, and his national energy strategy.

I. Strengthening the Family.

The President declared that "we must strengthen the family -- because it is the family that has the greatest bearing on our future."

1. Establishing a Commission on America's Urban Families.

The President announced he will establish a new Commission on America's Urban Families, to identify ways to "keep families together, strong and sound."

2. Easing the Financial Burden on Families.

The President urged Congress to:

- Raise the Personal Exemption for Children. To help families with children, the President proposed increasing the personal exemption for dependent children, effective October 1, 1992. The exemption would be increased by \$500 and would be indexed for inflation.

- Allow the Deduction of Interest on Student Loans. The President proposed allowing families to deduct the interest they pay on student loans.
 - The deduction would be permitted for interest incurred in financing higher education and training for the taxpayer and his or her spouse and children.
- Allow IRAs to be Used for Medical and Educational Expenses. The President proposed allowing penalty-free withdrawal of IRA funds for qualifying medical and educational expenses.

3. Reforming the Welfare System.

The President pledged to help any state attempting to reform its welfare system to promote individual responsibility by making it easier to obtain quickly any waiver of Federal regulations that may be required.

J. Moving Forward.

The President reminded Americans that we are "the freest nation on earth -- the kindest nation on earth -- the strongest nation on earth," but recognized that we can do even more. He also reminded us that "if we can change the world, we can change America."

THE WHITE HOUSE

Office of the Press Secretary

Embargoed for Release
Until 9:00 p.m. EST

Tuesday, January 28, 1992

HIGHLIGHTS OF THE PRESIDENT'S GROWTH AGENDA

- * The President has a plan to address both the short-term and the long-term problems facing the economy.
- * For the SHORT TERM, the President's plan will get the economy moving again:
 - 1.) Executive Actions:
 - Cutting back on excessive withholding and acceleration of already planned Federal spending will pump more money into the economy now.
 - Curbing regulation will enhance growth; and responsible banking regulation will ease the credit crunch.
 - 2.) Congressional Actions: CONGRESS SHOULD PASS THE PRESIDENT'S PLAN BY MARCH 20th.
 - Protecting Real Estate Values:
 - The \$5,000 tax credit and penalty-free IRA withdrawal for first-time homebuyers, and allowing deductions for losses on personal residences will spur home sales.
 - Modified passive loss rules and encouraging pension investments in real estate will help stop the slide in real estate.
 - Increasing Job-Creating Investments:
 - Cutting capital gains taxes to a top long-term rate of 15.4%.
 - The new 15% Investment Tax Allowance and better treatment of depreciation under the Alternative Minimum Tax will give industry a strong incentive to invest in productive equipment.
- * For the LONG-TERM, the President outlined nine steps designed to guarantee that America continues to lead the world of the future:
 - 1.) Trade: Opening Up Foreign Markets to U.S. Exports: By working to reduce or eliminate tariffs and subsidies, and through negotiation of the North American Free Trade Agreement.
 - 2.) Reforming and Investing in Education: By promoting choice, passing the America 2000 initiative, and providing the Department of Education with the largest

THE PRESIDENT'S GROWTH AGENDA

Immediate Agenda:

(1) *Executive Actions*

- o Withholding adjustment
- o Regulatory Relief
- o Spending acceleration
- o Monetary policy

(2) *Investment Incentives*

- o Capital gains
- o 15% Investment Tax Allowance
- o Modified AMT

(3) *Real Estate Incentives*

- o \$5,000 tax credit (first home)
- o Modified Passive Loss Rule
- o Penalty-free IRA withdrawal
- o Loss deduction for personal residences
- o Capital gains

Intermediate and Long-Term Agenda:

(4) *Investment in the Future*

- o R&D (record level -- \$76.6 billion)
- o Infrastructure (record level)
- o Head Start (\$2.8 billion)/Children (over \$100 billion)
- o Prevention (record level)
- o Education (record level -- 44% above FY '89)
- o Math & Science Initiative (69% above FY '89)
- o Anti-crime/drug abuse (record level -- \$28.5 billion)
- o Job Training 2000
- o Weed & Seed (\$500 million)
- o Enterprise Zones
- o HOPE
- o Mortgage revenue bonds
- o Low-income housing credit

(5) *International Market Expansion*

- o GATT
- o North American FTA
- o Enterprise for the Americas
- o Continued bilaterals

(6) *Pro-family Incentives*

- o Flexible IRA
 - Penalty-free withdrawal for health/education/first home purchase
- o Student loan interest deduction
- o Personal exemption increase (\$500 per child)
- o Health Reform

(7) *Comprehensive Health Reform*

- o The President's Plan
- o Health Insurance Market Reform:
 - Pooling
 - Guaranteed issue/coverage
 - Health Insurance Networks
- o Health Insurance Tax Credit/Deduction
- o Cost-effectiveness/containment measures
- o Coordinated care incentives
- o Prevention

(8) *Budget Discipline*

- o Orderly cut in Defense
- o Domestic discretionary freeze
- o Personnel freeze
- o Program and project eliminations
- o Mandatory cap and subsidy cap
- o BEA extension
- o Management initiatives

Unfinished Reform Agenda (still before the Congress):

(9) *America 2000 (Education Reform)*

- o New American Schools
- o Choice
- o National Goals/America 2000 Communities

(10) *Financial Sector Reform*

(11) *Legal Reform*

- o Tort reform
- o Malpractice reform
- o Civil justice reform

(12) *National Energy Strategy*

Talking Points:

THE PRESIDENT'S GROWTH AGENDA: EFFECTS ON THE ECONOMY

Economic Growth:

- * The President's plan will add hundreds of billions of dollars of goods and services to the nation's output over the next five years.¹

Jobs:

- * By the end of this year alone, the President's Plan will create 500,000 more jobs than would otherwise be created -- and many more in the years following that.

Home Sales:

- * The President's proposed tax credit of up to \$5,000 for first-time homebuyers is itself projected to enable up to a quarter of a million additional Americans to buy their first home in 1992.

Asset Values:

- * Enactment of the President's Plan will increase the value of assets held by Americans, including real estate, by hundreds of billions of dollars.

1

Note: Enactment of the President's Plan would increase the economy's growth rate by 25 percent over the next five years -- adding an average of almost 1/2 of a percentage point per year to the real growth rate of the economy relative to the "business as usual" baseline, which includes the Administration's spending acceleration proposal, reduced income tax withholding proposal, and other administratively discretionary actions.

Talking Points

THE STATE OF THE UNION:

- * The President hit a home run tonight. He was Presidential, composed, and decisive.
- * He looked and sounded like the leader of the free world:
 - "The cold war didn't end, it was won."
- * The President separated himself from the pack of pretenders with his vision for the new world order:
 - "Strength in the pursuit of peace is no vice; isolationism in the pursuit of security is no virtue."
- * The President demonstrated the same resolve on the economy as he did on the liberation of Kuwait:
 - "This will not stand."
- * The President's plan had all the elements:
 - A response to the changing world (\$50 billion defense cut);
 - Help for homebuyers and real estate (\$5,000 tax credit, penalty-free withdrawal, deduction for loss on residence);
 - Incentives for investment to create jobs (cap gains, investment tax allowance, AMT reform, enterprise zones);
 - Tax relief for families (increase in personal exemption, deductability of student loans, flexible IRA, penalty free IRA for medical & education);
 - Investments in the future (R&D, Education, Head Start);
 - Help for those in need (UI benefit extension);
 - Controlling the size of government (Regulatory review, budget freeze, personnel freeze);
 - Opening foreign markets (GATT, NAFTA, Enterprise for Americas);
 - Attacking crime (Crime bill, funds for crimefighting)
 - Dynamic reform proposals (Health care, America 2000, HOPE, tort reform, banking reform, the National Energy Strategy, welfare reform).
- * Unlike the Democrats' proposals, the President's Plan is responsible:
 - It doesn't violate the budget agreement;
 - It doesn't raise taxes;
 - It doesn't cut defense beyond what is reasonable.
- * The President set a firm deadline for action from Congress:
 - After March 20, "if it must be, the battle is joined."
- * The President sounded the right confident and hopeful note:
 - "We are still and ever the freest nation on earth, the kindest nation on earth, the strongest nation on earth."

State of the Union
January 28, 1992

"There are certain things that a President can do without Congress, and I am going to do them. I have, this evening, asked major Cabinet departments and Federal agencies to institute a 90-day moratorium on any new Federal regulations that could hinder growth. In those 90 days major departments and agencies will carry out a top-to-bottom review of all regulations, old and new -- to stop the ones that will hurt growth, and speed up those that will help growth.

"Further, for the untold numbers of hard-working, responsible American workers and businessmen and -women who've been forced to go without needed bank loans, the banking credit crunch must end. I won't neglect my responsibility for sound regulations that serve the public good, but regulatory overkill must be stopped. And I have instructed our government regulators to stop it."

Philadelphia Chamber of Commerce
January 30, 1992

"The plan that I put before the Congress and the American people contained several action steps, and one of the most critical was this: to free up American businesses by clearing away the obstacles to growth -- high taxes, overregulation and government deficits."

"We'll undertake a top-to-bottom review... we will accelerate any regulations that encourage growth and the creation of jobs. And whenever possible, we will scrap those that tie the hands of businesses and impede growth. I know I have regulatory responsibilities affecting safety in the workplace, for example; health, environmental protection. And I will not neglect those responsibilities.

"But you know as well as anyone how government -- sometimes with the best of intentions -- can hobble innovation and risktaking, the lifeblood of a successful business. Government naturally tends to expand ever outward, its red-tape oblivious to anything in its path. It touches everyone. Every regulation that reduces efficiency slaps a hidden tax on the consumer as well...

"Small businesses and those just starting up feel the sting of overregulation most of all. Yet these businesses drive America forward. They create most of our new jobs. They reinvigorate our communities. They embody the power of the American dream. I make this pledge: we will set America's dreamers and doers free and put an end to regulation overkill."

"I've mentioned this before, but in regulation, again, we have a responsibility. We don't want to go back to what is known as forbearance, where we neglect the soundness that is required. But there is regulatory overkill; the people are afraid, I think,

in some instances in the financial community because of the excesses of regulation. We're going to try very hard to achieve a better balance."

"We've proposed another reform, one that is crucial to creating jobs. America has become the most litigious society on Earth. Frivolous lawsuits are exhausting our ability to compete. If we were as good at rewarding success as we are at suing each other, we would be a century ahead of the rest of the world.

"Lawsuit madness gums everything up. Needed new products never reach the marketplace because of concerns over liability. In many areas, businesses are forced to either drive prices into the stratosphere -- or literally close shop."

"My Competitiveness Council, that's chaired by the Vice President, Vice President Quayle, has offered 50 concrete recommendations to restore sanity to our civil justice system. I've enacted some of the recommendations by Executive Order. Others, however, require Congress to act. And with all respect, there are 62 lawyers in the United States Senate, a lot of lawyers up there on Capital Hill. I realize that might present a problem, but it also presents an opportunity. And I'd like to see them move forward now with these changes to cap some of the outrageous areas of unlimited liability. It's driving our small businesses right flat into the ground, and costing American workers jobs."

"For too long, Congress has been violating an important principle of good government: Do no harm. It's been imposing its own habits on state and local governments -- and the taxpayer ends up, as you may all know, by footing the bill. These unfinanced Federal government mandates, as they're called, require the cities, require the states to provide new services or institute new programs -- but the Congress doesn't provide the money to pay for them. That means the local governments must pass along Congress' wish list to the taxpayer in the form of higher taxes at the local level. Now, the National Governor's Association -- made up, obviously, of Republicans and Democrats -- continually urges Congress to stop these mandates, which are killing innovation, killing savings at the state and local level."

National Grocers Association
Orlando, Florida
February 4, 1992

"In the meantime, I've initiated some reforms that will get the economy moving without having to wait for Congress to act. I've imposed a 90-day freeze on federal regulations that can hinder growth. And during that period, all departments and agencies will review regulations, old and new, and when possible, stop the ones that will hurt growth and speeds up those that will help growth.

"I see from your convention schedule that you have a workshop entitled 'The Regulators are Back.' No wonder. You can't get through a day without having to worry about what some regulator is going to do through some thoughtless regulation. Regulations may have stated aims as wholesome as Mom and apple pie. But you know better than anyone that when regulators carry that regulation too far, there won't be any apple pie for Mom to buy.

"I ran a Council on deregulation for eight years as Vice President. And I am here to assure you, we've not lost the spirit of deregulation. I want you to be able to spend your time working on what you can do for your customers rather than fretting about what some regulator might do to you. And I'm fighting hard against the epidemic of lawsuits. The costs and delays in the legal system are a hidden tax on every single American consumer, on every business transaction in America.

"And that's why I am sending to Congress today a reform bill -- the Access to Justice Act of 1992. And my reform proposal will give Americans cheaper and easier alternatives to trial. And my plan will halt needless lawsuits by making changes in the way some attorney's fees are awarded. And let's stop America's love affair with the lawsuit. If we're as good at rewarding success as we are at suing each other, we'd be way ahead of the rest of the world. I might say parenthetically, health care costs would be an awful lot lower if we didn't have a lot of frivolous lawsuits going after these doctors for malpractice.

"One of the great lessons of our times is this: Freedom and cooperation work, big government doesn't. And after 70 years, the new leaders in Moscow recognize that total government regulation produces only one thing: total failure. And now, the Russians -- I had a fascinating visit with Boris Yeltsin up on Camp David on Saturday -- the Russians want to try something different -- like grocery stores with food on the shelves. This man's put into some tough reforms there. Got to stay with him. Got to help him make them work.

"Isn't it ironic at the exact same moment the world is turning to our values of more economic freedom and competition, some in the United States Congress want to go just the opposite way. And here's an example of the trouble brewing in Congress: That's the so-called FDA enforcement bill. I'm sure those of you who sell your own private-label groceries aren't exactly thrilled by the prospect of more legal and accounting and paperwork burdens. But that's just what the Congress want to do. Well, let me tell you in know uncertain terms, the time for over-regulation is over. And if they send me more legislation with excessive regulation in it, I'm going to veto it and send it back. It's going right back up there."

Small Business Legislative Council
Washington D.C.
February 5, 1992

"These, as I say, don't need Congressional approval. A couple of initiatives have earned kudos from this crowd. First, I have ordered major departments and agencies to put a 90-day hold on new regulations. Regulations ought to foster economic growth, not crush it. And we're going to make sure that the days of overregulation are over once and for all.

"So we're going to take a fresh look at rules and regulations Washington hurls your way. We'll get rid of those that do nothing more than destroy jobs and weigh down businesses. And in this, we will pick some that will speed up and foster growth and support jobs. We're going to emphasize those regulations.

"But that's not all. We also declared war on nuisance lawsuits. Yesterday I announced the Access to Justice Act of 1992. That bill will give Americans less expensive and easier alternatives to trial. Let them solve problems out of court. And we've got to stop America's long liaison with the lawsuit. If we were as good at rewarding success as we are at suing each other, this country would be a lot better off.

San Diego Rotary Club
February 7, 1992

"We must reform medical malpractice litigation. Today we have too many malpractice suits driving up the costs for a doctor, a nurse, or a hospital stay. And I might say parenthetically this malpractice suit is just a symptom of what's happening all across the business spectrum in this country and in the eleemosynary area, like in the little league. We've got too darn many lawsuits out there, very candidly. A recent study found that--listen to this one--that in 1989 the cost of defensive medicine, just for physicians' expenditures to be over \$20 billion, or nearly 18% of their total costs.

"I don't want to get in trouble with the Bar Association--but I once quoted to someone that line, "An apple a day keeps the doctor away. He says, what works for lawyers?" But this is a very serious point, and here's what will work for America: let's spend as much time building a better health system as we do wrestling with our legal system. We'd do better caring for each other if we stop solving problems by suing each other."

State Legislature of New Hampshire
February 12, 1992

"We put a stop order on new federal regulation. We've begun a 90-day review -- 90 days to take a hard look at regulations that hurt more than they help. The day of overregulation is just that -- over.

"We declared war on frivolous lawsuits. If this country rewarded success as easily as we slap on a lawsuit, our economy would be well on its way."

U.S. Chamber of Commerce

Washington D.C.

February 24, 1992

In my State of the Union address, I instituted a 90-day freeze on federal regulations that affect economic growth -- and I asked major departments and agencies to carry out an unprecedented top-to-bottom review of all existing and proposed regulations. Within those 90 days, we will accelerate new rules that promote business growth, and whenever possible, halt those that would impede growth. Already, we've seen results.

Today, for example, I am announcing major new ground rules for regulation of biotechnology. Bill Reilly, the EPA administrator, I understand is with you today. He'll have a major responsibility for making the new rules work to foster economic growth. This is a \$4 billion industry. And it should grow to \$50 billion by the end of the decade if we let it. The rewards we will reap include new medicines and safer ways to clean up hazardous waste and a revolution in agriculture. The United States leads the world in biotechnology, and I intend, through sensible regulation and, in some instances, deregulation, to keep it just exactly that way.

We've taken new actions to ease the credit crunch. For example, for healthy banks, we've changed overly strict definitions of bank capital -- creating more access to capital. We're cutting red tape for healthy banks and thrifts. In these tough real estate markets, we've issued common-sense, realistic valuation guidelines.

We're making it easier for small business to get capital from securities markets. We're increasing the maximum for small public offerings that get simplified handling by the SEC from \$1.5 million, raising that to \$5 million. We're cutting paperwork and we're simplifying securities registration for small businesses.

We've also cut the cost of compliance with the payroll tax system. We've cut paperwork and increased access for small business to electronic payment systems. Instead of heavy handed enforcement, we're helping small firms meet their obligations.

The few steps that I've just outlined -- I know they're technical, but these few steps will provide billions of dollars in additional capital to the nation's economy. But we won't stop after 90 days. We'll turn up the heat against over-regulation - rule by rule and industry by industry.

We'll take the case to capital hill: for every unreasonable regulation we can't change through executive action, we'll introduce reform legislation -- and we'll push the Congress to do its job and put an end to over-regulation. I want the regulators and the Congress to remember one thing: if it doesn't make sense, if it hurts the economy, don't do it.

EPA, in a Reversal, Decides to Allow Broad Use of Carcinogenic Pesticides

By ROSE GUTFELD

Staff Reporter of THE WALL STREET JOURNAL
WASHINGTON — The Environmental Protection Agency has decided to allow the widespread use of a class of popular and carcinogenic pesticides to resume.

The agency had proposed banning most uses of the pesticides. But it changed its position primarily as a result of a \$10 million, industry-funded survey of grocery products that showed the health risk to consumers from ethylene bisdithiocarbamate, a class of three pesticides, was less than had been indicated by field tests of crops.

The EPA said that EBDC use will be allowed on 45 crops ranging from apples to wheat, subject to certain new conditions. But the agency decided to ban use of the pesticide on 11 other crops, an action with an estimated annual cost of \$21 million to \$64 million.

At a news conference, EPA administrator William Reilly and other officials didn't rule out the possibility that similar data might show other pesticides to be less harmful than field tests indicate. But they said that it is up to the chemical manufacturers to conduct such studies and predicted that companies wouldn't necessarily want to undertake such expensive efforts for other chemicals. They noted, among other things, that EBDCs break down faster than other pesticides, meaning there was a basis to expect that test results would differ significantly between the fields and grocery shelves.

Defending EPA Decision

Moreover, Mr. Reilly defended the agency's 1989 decision to propose a ban on EBDCs as a result of the field-test data. "We have an obligation to regulate conservatively—in other words, to err on the side of safety when we're uncertain about the extent of risk," he said.

Makers of the chemicals, however, anticipating the restrictions, had voluntarily halted most uses of the pesticide as of Jan. 1, 1990. The companies, as a result of yesterday's action, will be able to resume EBDC use on most of the crops.

The survey of grocery shelves, which consisted of almost 6,000 food samples, was conducted by a task force formed by the four makers of the chemical: Atochem North America Inc.; BASF Corp., a unit of BASF AG; Du Pont Co., and Rohm & Haas Co. A task force spokeswoman called the EPA action "good news for American farmers and consumers."

Decision Draws Criticism

The EPA also based its decision on a more thorough assessment of animal laboratory studies.

Environmental and consumer groups criticized the EPA action. Public Voice for

Food and Health Policy, a consumer-advocacy group, accused the EPA of "protecting the economic interest of industry over the health interest of consumers."

But the agency said that the cancer risk from eating fruit or vegetables from the EBDC-treated crops that will be allowed amounts to about one additional cancer for every one million people exposed for a lifetime. The largest remaining agricultural uses of EBDC pesticides include apples, cucumbers, lettuce, melons, onions, potatoes, squash, small grains, sweet corn and tomatoes.

Use of the pesticide will be banned on apricots, carrots, celery, collards, mustard greens, nectarines, peaches, rhubarb, spinach, succulent beans and turnips.

The EPA is requiring certain restrictions on the use of EBDCs, including reducing the number of treatments allowed on a single crop and lengthening the time between treatment and harvest. Agriculture workers and home gardeners will have to wear protective clothing. In addition, the EPA suggests that people wash or peel fruits and vegetables before eating, because residues are mostly found on the surface.

S.E.C. Plan For Small Businesses

Chief Seeks to Ease Rules on Stock Sales

By STEPHEN LABATON

Special to The New York Times

WASHINGTON, Feb. 15 — Promoting the economic agenda of the White House, Richard C. Breeden, the chairman of the Securities and Exchange Commission, proposed measures today to make it cheaper for small companies to raise money.

The proposals would reduce, and in some cases eliminate, the public disclosure requirements for small companies that issue stock. They would also make it easier for mutual funds to invest in small and new businesses.

Mr. Breeden said the measures were an effort to put into practice the White House's recent call to "curtail unnecessary regulatory costs." He said the changes would also assist small companies in obtaining financing just as they are having difficulty getting loans from banks hesitant to make new loans because of the slumping economy.

While the details of the proposals will take several months for the commission to iron out, some state regulators have expressed concern that the measures could make it more difficult for shareholders and the authorities to combat fraud in the penny-stock market.

"The devil will be in the details," said Lewis W. Brothers, the director of Virginia's securities division and the president of the North American Securities Administrators Association, an industry group based in Washington. "It really is a delicate balancing act between investor protection and capital formation."

Impeding Fraud Effort

Some S.E.C. officials have also raised concerns privately about the effect of such changes on the Government's effort to prosecute fraud in the penny-stock market. But Mr. Breeden discounted the concerns today, insisting that the proposals will ease what he called a credit crunch without inhibiting fraud cases.

"While any system must continue to provide a high quality of disclosure and vigorous anti-fraud efforts, there

many aspects of the current system may add to the difficulty of raising capital without necessarily contributing to good disclosure," Mr. Breeden said in a speech in Washington before the National Press Club, where he disclosed the proposals. "The steps that I have outlined today represent in some cases a significant new approach to the registration process."

S.E.C. Head's Plan Seeks To Help Small Businesses

Continued From First Business Page

to maintain investor protection and the quality of disclosure, while cutting costs, reducing barriers and improving flexibility."

Agency officials said the changes would probably not take effect for at least six months, following a comment period and several hearings.

These were the main proposals:

¶ Increase to \$1 million the amount that can be raised through stock offerings without registering with Federal or state authorities for "seed money" to start a new company. Existing law permits new companies to raise \$500,000 without registering, plus another \$500,000 that must be registered with state regulators; further offerings require registration with the Securities and Exchange Commission.

¶ Increase to \$5 million, from \$1.5 million, the amount that can be raised in limited public offerings that are offered mainly to big investors and require less disclosure than regular offerings.

¶ Allow small companies, generally those considered to be worth \$20 million to \$25 million, to file less detailed quarterly and annual financial disclosures with the commission.

¶ Make it easier through various changes for mutual funds to invest more money in smaller companies, and loosen the rule that requires mutual funds to offer daily stock redemptions.

Today's announcement was the

second in five days by Mr. Breeden on changing the rules of corporate disclosure.

Last Thursday, he announced a proposal that would require publicly traded companies to provide more accurate and detailed information to shareholders about how much is paid to executives and directors.

The commission also ordered companies to give stockholders the right to take pay issues to a vote, although such ballots would not be binding. But they are expected to provide a powerful incentive to corporate managers to reconsider their pay policies.

New York Times - February 19, 1992
Business Section
Page D1

Fed Lets Banks Lower Reserves To Aid Lending

By STEVEN GREENHOUSE

Special to The New York Times

WASHINGTON, Feb. 18 — In an unusual move aimed at increasing bank lending to spur the economy, the Federal Reserve announced today that it was cutting the amount of money that banks must hold in reserve to offset possible losses.

The central bank said the action, effective April 2, would enable banks to take \$8 billion in reserves not earning income as they sit in bank vaults and use them for investing or lending. Economists, however, said the short-term effect would be modest because banks might wait to strengthen their finances further before they lend.

Today's announcement came after persistent pleas to the Federal Reserve from the White House and many members of Congress, who, with their eyes on Election Day as well as the economy, have been urging that monetary policy be eased still further.

Sending a Message

"The Fed is trying to send a message to banks, credit unions and savings and loans; it's trying to say it wants to encourage banks to make more credit available," said Stuart Hoffman, chief economist for the PNC Financial Corporation, a bank holding company in Pittsburgh.

Under the new requirement, banks will be able to reduce the amount of reserves they must hold to 10 percent of deposits in checking accounts, NOW accounts and other transaction accounts, from 12 percent.

"Over time," the Fed said in its announcement, "it is expected that most of these cost savings will be passed on to depositors and borrow-

Fed Eases Bank Reserves to Spur Lending

Continued From Page A1

ers' because lower reserve requirements would reduce the funding costs for banks.

The Fed said its decision "should strengthen the financial condition of banks and thereby improve their access to capital markets, putting them in a better position to extend credit."

Economists said that today's announcement, made on the day before the Fed's chairman, Alan Greenspan, is to report to Congress on the economy, was a modest type of monetary easing that sought to prevent raising fears about inflationary ripples the way a new cut in key interest rates might have.

"This is sort of an insurance policy that the Fed is taking out in terms of insuring that the economy continues to recover, but it's a very modest step," said Irwin L. Kellner, chief economist for the Chemical Banking Corporation.

Stocks and Bonds Fall

The bond market reacted with just such inflation fears, however, and bond prices fell sharply and interest rates rose after the Fed announcement. Partly in reaction to the decline in bonds, stocks then fell, and the Dow Jones industrial average lost 21.24 points to close at 3,224.73.

Some traders also said bond prices fell because many investors interpreted the Fed's move as meaning the central bank would not cut interest rates further.

David M. Jones, chief economist for Aubrey G. Lanston & Company, a New York brokerage, said the bond market fell because traders viewed the announcement — on the day of the New Hampshire primary, and the day before Mr. Greenspan testifies —

as "partly political." Investors worry that when the Fed is being "political," it is concerned more about spurring growth to please politicians and less about fighting inflation.

The Fed said today's move was the first major change in the reserve ratio on checking accounts since Congress enacted the Monetary Control Act of 1980 to require all deposit-taking institutions, not just commercial banks, to meet the Fed's reserve requirements. In December 1990, the Federal Reserve reduced its 10 percent from 3 percent the reserve requirements for certificates of deposit and other time deposits held by corporations, plus Eurocurrency liabilities, which are dollar-denominated certificates of deposit purchased abroad.

Had Little Effect

That move, which was intended to help ease the tight lending situation, allowed banks to invest or lend \$13.6 billion in reserves. Economists said that decision ultimately had little effect on increasing lending because banks were so shell-shocked by loans that turned bad, largely because of the downturn in real estate.

The Federal Reserve said the effective date of today's announcement would not be until April to give banks "time to adjust their reserve management strategies" by, for example, "economizing on vault cash."

"It will have a minimal impact within the two to three months after April, but it will have a stronger impact over the next 6 to 12 months," said Mr. Jones, the economist.

Reserve requirements were begun in the early days of the nation when the Federal Government began chartering banks and wanted to make sure banks had a sufficient cushion to protect against a run or other short-term liquidity problem. The reserves are usually held in a bank's own vault

or at a regional Federal Reserve bank.

System Termed Outdated

Many economists say the reserve requirement system is outdated because if a bank runs out of cash on a particular day, it can easily borrow from other banks. Economists suggest that the reserve requirement system remains in effect to help maintain consumer confidence in banks and to give the Fed another tool to affect monetary policy.

Normally when the Federal Reserve wants banks to lend more to accelerate economic growth, it reduces the discount rate, the rate at which it lends money to banks, or the federal funds rate, the rate banks charge each other for overnight loans. The Fed has cut rates more than a dozen times over the last 18 months, and even so, many consumers and Government officials complain that banks remain tight-fisted. The Fed can also seek to improve growth through its open market activities, that is, by buying Government securities from banks and thereby making more money available for lending.

Economists said it would be difficult to estimate whether today's move would have as great an effect on spurring the economy as even a small cut in the discount rate. They said it was hard to estimate how much of the freed-up reserves would go into investments that raise bank earnings and how much would go into loans.

Today's move would not weaken the ability of the nation's banks to absorb losses, analysts said, because banks would still have to maintain a certain capital ratio — although not necessarily as non-earning reserves — to protect against losses.



OFFICE OF THE VICE PRESIDENT

WASHINGTON

**THE PRESIDENT'S COUNCIL ON COMPETITIVENESS
STREAMLINING FEDERAL REGULATION OF BIOTECHNOLOGY PRODUCTS**

FACT SHEET

"Today, I am announcing major new ground rules for regulation of biotechnology. This 4 billion dollar industry should grow to 50 billion by the end of the decade -- if we let it. The rewards we will reap include new medicines, safer ways to clean up hazardous wastes, and a revolution in agriculture. The United States leads the world in biotechnology, and I intend, through sensible regulation, and in some instances, deregulation, to keep it that way."

President George Bush
February 24, 1992

Noting the Bush Administration's initiative to increase FY '93 funding for biotechnology R&D by 7%: "Were federal agencies to regulate products simply because an innovative process such as rDNA technology had been used, we would be unable to reap the benefit of our own research investments. The degree of oversight should be commensurate with risk, and the need for oversight should be properly supported by credible scientific evidence of reasonably foreseeable risk to health or the environment."

D. Allan Bromley, Advisor to the President for
Science and Technology, February 24, 1992

The President announced a plan to streamline federal regulation of new biotechnology products today. The plan developed by the Council on Competitiveness, which is chaired by Vice President Quayle, will protect safety, health, and the environment and at the same time removing unnecessary regulatory barriers to development of biotechnology products.

There are three phases to the Council's initiative:

Phase I -- The Final Scope Document for Planned Introductions of Biotechnology Products in to the Environment will be published by the Office of Science and Technology Policy this week. The Final Scope document sets forth a scientifically sound risk-based policy for the exercise of statutory discretion by federal agencies

in the oversight of biotechnology products used outside of the laboratory. Completion of the Scope was recommended in the Council's 1991 Report on National Biotechnology Policy.

Phase II -- Complete review and publish proposed rules by agencies responsible for oversight of various biotechnology products (for example EPA's upcoming regulation of biotechnology products that act as pesticides). These rules will reduce the burden of current federal oversight.

Phase III -- Develop of detailed "road-maps" based on the principle of "one stop shopping" to clearly describe the pathway for obtaining federal approvals to commercialize biotechnology products including foods, animals, microorganisms and plants.

Background on Biotechnology

The US is the world leader in new biotechnology, the use of various biological processes to make products and perform services with living organisms or their components. Sales of the US biotechnology industry produced reached \$4 billion in 1991, and are expected to be \$50 billion by the year 2000 assuming appropriate federal oversight.

Advances in molecular technology over the past two decades have added new tools to the biotechnology techniques traditionally used in agriculture, food production, and other processes. The first new biotechnology products were innovative pharmaceuticals and medical devices developed during the last 15 years. Increasing efforts are underway to develop and bring to market biotechnology products for a broad range of agricultural and environment applications ranging from improved plant varieties to environmental clean-up.

To ensure that the US retains its competitive lead in this industry, the Council's plan establishes the general principles for federal regulation of new products. All federal oversight for products used in the environment should be based on risk, and not on any specific biotechnology process used to develop a product. This policy seeks to avoid the burden on innovation that could occur were oversight to be simply triggered by the use of an innovative new technology.

FOR FURTHER INFORMATION PLEASE CONTACT

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FCC Is Considering Changes in Rules That Could Stimulate Economic Growth

By MARY LU CARNEVALE ^{19/97}

Staff Reporter of THE WALL STREET JOURNAL
WASHINGTON—Federal regulators are considering ways to modify broadcast and telecommunications rules that could boost the economy and eventually help change the competitive landscape.

Among the ideas being discussed among Federal Communications Commission members and their staffs are accelerating depreciation rates for phone companies and easing ownership limits on radio and television stations.

Although the FCC has had a deregulatory bent for years, the effort to clear up longstanding regulations that communications companies find intrusive could crystallize with President Bush's call for federal agencies to pinpoint and speed actions that could stimulate economic growth.

Commissioner Sherrie Marshall is pushing at least 12 steps the agency could take—perhaps within the year—to ease or end rules, spur investment and create jobs. The proposals, many of which already are

wending their way through the commission, should be put on a fast track, she says.

Ms. Marshall's suggestions, contained in a memo to Chairman Alfred Sikes, are circulating with great interest at the FCC and within the video and phone industries. Ms. Marshall, the first commissioner to come up with such a list, has played a pivotal role in shaping commission decisions; successfully challenging Mr. Sikes and forcing the commission to go in directions the chairman has opposed.

Among her suggestions: relax or lift completely the ban on individuals or corporations owning more than 12 AM radio stations, 12 FM stations and 12 television stations nationwide.

In addition, she believes FCC rules should be relaxed to allow more joint ownership and operation of local broadcast stations. Because of operating efficiencies and advertising packaging, easing restrictions could help keep some troubled stations on the air.

Among the more controversial proposals, Ms. Marshall also would like to see the commission allow TV networks to own cable systems. The move, she argues, could give the networks a new revenue stream at a time they are being hurt by the cable industry's rapid growth.

The FCC began examining the network-cable proposal last year, and it has generated much controversy. Indeed, Commissioner James Quello said he is tending toward not allowing networks to snap up cable companies—and vice versa—because it could hurt network affiliates and independent stations. "We'll have to examine whether it's a boon or a detriment to free over-the-air TV," he said.

For his part, Mr. Quello believes the commission should do more to end regulations that stifle American Telephone & Telegraph Co.'s ability to compete in selling telecommunications services to big business users.

Ms. Marshall would like to see revisions to depreciation schedules for the phone companies. "This should spur investment in our telephone networks," a move that could lead to greater use of optical fiber and advanced switching technologies. That won cheers from the telephone industry. John Sodolski, president of the U.S. Telephone Association, said that "any acceleration of depreciation is a plus for this industry."

Chairman Sikes, who had asked commissioners and key departments to zero in on rules that could be eased or lifted, initiated a review of FCC rules three years ago. The commission, for instance, is likely to vote by this spring on easing radio ownership rules and has been cutting through the thicket of phone regulation.

25, 1992

E.P.A. Urged to Ease Rules On Cleanup of Toxic Waste

By KEITH SCHNEIDER
Special to The New York Times

WASHINGTON, Feb. 24 — In response to President Bush's call to review Federal regulations, a top official of the Environmental Protection Agency has proposed changes in laws for cleaning up toxic waste sites that would reduce the Government's enforcement of standards and eliminate some environmental safeguards.

The official, Don R. Clay, the assistant administrator of the Office of Solid Waste and Emergency Response, proposes to "significantly decrease the regulatory reach" of the hazardous waste laws.

Mr. Clay made the proposal in a memorandum on Feb. 10 to William K. Reilly, the Administrator of the environmental agency, who had asked each of his division chiefs to suggest ways to respond to the President's call for a regulatory review, which he made in late January.

Dave Cohen, Mr. Reilly's press secretary, said today: "Nothing has been accepted. We're merely looking at ideas that might produce cost saving without sacrificing any of the goals of the agency."

If Mr. Reilly chooses to accept the proposals, the E.P.A. can offer them as new regulations that can be put into effect only after a series of public hearings, and a rule-writing process that take a year or two.

Some Proposed Changes

Mr. Clay's memorandum was aimed at the mammoth Government program that has developed in the E.P.A., the Department of Energy and the Department of Defense to clean up thousands of abandoned toxic waste sites across the country. Mr. Clay proposed these changes to accelerate the process of cleaning up the sites and lowering the costs:

1. Exempting some wastes from strict disposal requirements.

2. Replacing enforcement actions against polluters with friendlier negotiations.

3. Encouraging the use of innovative technologies by exempting companies that use new cleanup techniques from the strict legal liabilities contained in Federal toxic waste laws.

4. Allowing companies that conduct toxic waste cleanups for the Government to pile contaminated soil and other debris at the site without having to gain special permits.

Hugh Kaufman, an E.P.A. expert in toxic wastes, called the proposals "a unilateral erasing of the strict requirements of the laws to protect the public health environment from existing and abandoned hazardous waste sites." Mr. Kaufman, an assistant to the director of the environmental agency's Hazardous Site Control Division, said that if the proposals were put into effect the result could be a new generation of

hazardous waste sites.

But executives of the chemical and hazardous waste treatment industries said the changes were welcome. They said the Government's toxic waste cleanup project had created an unbearably complex bureaucracy whose repetitious rules had made some companies rich but had done little to protect public health or the environment.

Despite expenditures of more than \$20 billion, fewer than 100 Government toxic waste sites have been cleaned up. A typical toxic waste site, the environmental agency said, now takes 12 years to clean up at a cost of more than \$30 million.

"Waste Management has long advocated changing the toxic waste program from one that investigates problems to one that solves problems," said Charles J. McDermott, director of government affairs for Waste Management

Lower standards and fewer safeguards.

Inc., the nation's largest environmental services company. "For too long, the toxic waste cleanup model has been a redundant and exhaustive series of analyses that look at every conceivable remedial option before it decides on an action."

A Maze of Regulations

The Government's program for cleaning up toxic waste sites falls under the requirements of the Resource Conservation and Recovery Act of 1976, which regulates the production and disposal of hazardous wastes, and the Comprehensive Environmental Response, Compensation and Liability Act of 1980, which established the multibillion-dollar "superfund" to pay for cleaning up abandoned sites.

Much of the money spent by the Government on toxic waste cleanup in the superfund program, the Energy Department's cleanup of nuclear waste plants and the Pentagon's cleanup of its bases and plants has gone to consultants, engineers, lawyers and chemists.

In his memorandum, Mr. Clay proposed to quicken the pace of cleanups under the superfund program by offering polluting companies that want to voluntarily conduct the cleanup work themselves a way to easily gain "official E.P.A. approval" instead of putting the company through the usual bureaucratic maze.

Buchanan goes to Georgia to make stand against Bush

By Donald Lambro
THE WASHINGTON TIMES

ATLANTA — Pat Buchanan returned to Georgia yesterday to rally his troops and draw a line in the red Georgia clay where he says his populist campaign will cut into President Bush's Southern strength.

Buchanan strategists here and some Republican Party regulars say Mr. Buchanan's anti-government, anti-tax message is popular in Georgia, especially in the rural counties, and that he will do well here in the pivotal March 3 primary.

"In a number of rural counties he's going to draw a lot of support," said Dan Wolf, Republican chairman of Forsyth County, a suburban bedroom community near here. "His conservative message is playing well."

In an abrupt change of plans, Mr. Buchanan flew here yesterday after a two-day, five-city swing through Florida where his strategists said he had little chance of overcoming the president's strength in the state.

Tom Hines, Mr. Buchanan's Florida campaign manager, said "while we can do well in Florida, this is a George Bush stronghold."

So Buchanan strategists have de-

cided to make their stand in Georgia, which is a key Southern battleground leading up to Super Tuesday on March 10. Mr. Buchanan called this state "the New Hampshire of the South" yesterday and he has begun running new radio and TV ads throughout Georgia.

"This is a make-or-break state for us," said a Buchanan adviser. "We've got to do well here."

Mr. Buchanan said he would return here Thursday night and campaign full-time until the primary.

Meantime, the conservative commentator continued to flog the president and the GOP for treating him unfairly in the primaries by keeping him off some primary ballots, including South Dakota, New York and Kentucky. And he dropped veiled hints that if the tactics continued he might not support Mr. Bush in the fall if the president is the nominee.

"If George Bush beats me in a clean, straight, fair fight, then I will support him all the way through November," he said. "But I expect to be that nominee."

But Mr. Buchanan said the Bush campaign was not treating him fairly. "What are they afraid of," he said at a news conference and rally earlier in the day outside the Florida

state Capitol in Tallahassee, "that I would walk in like the Pied Piper and lead all those hairy-chested Republicans off to my camp?"

"If anybody is running a party that is closed to debate and dissent and legitimate argument, it is Mr. Bush's establishment in Washington, not Pat Buchanan," he said. "I want equal access."

Traveling by car to Ellijay, a small community in rural Gilmer County about an hour's ride northwest of Atlanta, Mr. Buchanan was greeted at a middle-school rally by a crowd of several hundred supporters who cheered his conservative message. He later stopped and had a pork barbecue sandwich at a nearby popular eatery run by Oscar and Edna Poole — who were volunteers in his New Hampshire campaign.

Returning to Atlanta in the afternoon for a rally and a round of media appearances, Mr. Buchanan made an unscheduled stop at a Kentucky Fried Chicken restaurant in nearby Marietta to pose in front of the huge sign atop the fast-food franchise.

"We'll put it outside the Republican National Committee and replace the elephant as the symbol of a party that likes to keep folks off the ballot," he said.

BUSH TO EASE RULES ON PRODUCTS MADE BY ALTERING GENES

SEES \$50 BILLION IN SALES

White House Finds No Inherent
Dangers and Seeks Faster
Approvals by Agencies

By PHILIP J. HILTS
Special to The New York Times

WASHINGTON, Feb. 24 — The White House today issued a new Government policy on biotechnology products, saying that genetically engineered products are not dangerous in themselves and should not get too much scrutiny from Federal regulators.

The new statement is intended to spur the biotechnology industry and keep Federal regulators from singling out its products for extra regulatory procedures. It would put the stamp of policy on practices that have been evolving in the Federal agencies for years, assuring that fewer and fewer biotechnology companies need special approval to release new organisms in the world.

"I am announcing major new ground rules for regulation of biotechnology," President Bush said. "This \$4 billion industry should grow to \$50 billion by the end of the decade — if we let it. The United States leads the world in biotechnology and I intend to keep it that way."

Easing Burden on Business

Federal regulations that govern genetically engineered pesticides and other toxic chemicals are being written, but have been stalled, at least partly because the policy statement issued today was not final. It contains few specifics but will serve as guidance to regulatory agencies and the basis for Vice President Dan Quayle's Council on Competitiveness to intercede if regulations of biotechnology companies get too "burdensome to business," in the language of the White House staff.

The new policy covers all uses of genetically altered organisms or products, from crops to medicines. In the past it has taken many years — up to five or six in some cases — to pass these products through the unmarked and often shifting regulatory minefield. Even after some years of trying to make the process quicker, the average time remains more than three years from the first notification of the Gov-

Continued From Page A1

ernment to its final approval.

Among the genetically engineered products now coming along is a tomato plant with a special gene inserted; the gene destroys one of the enzymes that makes the plant ripen, so that although tomatoes can be matured on the vine, they will not soften and shrivel until long after they are shipped to stores. Another promising product is a cotton plant that biologists have equipped with its own natural pesticide by inserting a bacterial gene that makes a product toxic to insects.

Despite the promise of such products, critics have worried about the dangers of introducing novel organisms into the environment, arguing that some might run riot if unrestrained by natural enemies. Defenders of the policy have countered that adding a few genes of known purpose is unlikely to change a familiar species into an Andromeda strain.

Officials of the Environmental Protection Agency who asked to remain unnamed said that the new policy was better than previous drafts, which threatened to cancel current law governing biotechnology products.

Aim of New Policy

The thrust of the new policy is that genetically engineered products should not be assumed to be inherently dangerous, and that regulation "should be based on evidence that the risk presented by introduction of an organism in a particular environment used for a particular type of application is unreasonable."

It also says that organisms that are only slightly different from their parent organisms — a category that includes the vast majority of products so far proposed — need not be regulated more than the parent organisms.

These rules could leave current regulation unchanged or provide companies grounds for challenging almost any regulation.

"If that is the best they can do, I'm disappointed," said Rebecca Goldberg, senior scientist at the Environmental Defense Fund. "The vagueness is enough for the Council on Competitiveness to do what it wants, to rewrite any regulation."

The new policy statement, written by the staff of the council and of Mr. Dan Quayle, puts an official end to a Federal debate on one major topic: whether biotechnology products need special oversight from the Government because they fundamentally alter living organisms.

Allen Goldhammer, head of the Industrial Biotechnology Association, a major trade group for biotechnology companies, said the policy was "an

important step after years of debate." Industry has anxiously awaited new regulatory rules in the area so that companies can be sure of what products will be regulated and what safety tests will be required.

Important revisions of two major regulatory laws, governing pesticides and toxic chemicals, may be issued soon, now that biotechnology policy has been set.

Under these laws, a company introducing a new biotechnology product must notify the proper regulatory agency — the Environmental Protection Agency, the Agriculture Department or the Food and Drug Administration — and then submit safety data. Testing the first such products in the mid-1980's met with such opposition that a product called ice-minus, intended to increase strawberries' tolerance to frost, was sprayed by scientists dressed in protective "moon suits" under the glared of television lights.

Dawn of an Era

That era is ended, and now the Government would likely not ask for data on such products. It would merely accept notification of a small-scale experiment and look more closely

The goal is U.S.
dominance of a major
new industry.

when the product is ready for wider experiments. Of the 70 or so new organisms or engineered products released into the environment over the past eight years, all had careful scrutiny and submission of substantial safety data.

Now, one Federal official said, no more than three or four of those products would undergo such scrutiny. Today's policy makes that posture official.

The new policy states: "Although the new biotechnology processes can be used to produce risky organisms, so can traditional techniques; it is the characteristics of the organism, the environment, and the application that determine risk (or lack thereof) of the introduction into the environment. Indeed, the new technologies of molecular modification may increase the potential for safe, planned introduction because they employ techniques that are more precise and more efficient than traditional crossbreeding." For centuries, the crossbreeding method was humankind's way of engineering organisms.

Continued on Page C5, Column 1

25, 1992

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But executives of the chemical and hazardous waste treatment industries said the changes were welcome. They said the Government's toxic waste cleanup project had created an unbearably complex bureaucracy whose repetitious rules had made some companies rich but had done little to protect public health or the environment.

Despite expenditures of more than \$20 billion, fewer than 100 Government toxic waste sites have been cleaned up. A typical toxic waste site, the environmental agency said, now takes 12 years to clean up at a cost of more than \$30 million.

"Waste Management has long advocated changing the toxic waste program from one that investigates problems to one that solves problems," said Charles J. McDermott, director of government affairs for Waste Management

Lower standards and fewer safeguards.

Inc., the nation's largest environmental services company. "For too long, the toxic waste cleanup model has been a redundant and exhaustive series of analyses that look at every conceivable remedial option before it decides on an action."

A Maze of Regulations

The Government's program for cleaning up toxic waste sites falls under the requirements of the Resource Conservation and Recovery Act of 1976, which regulates the production and disposal of hazardous wastes, and the Comprehensive Environmental Response, Compensation and Liability Act of 1980, which established the multibillion-dollar "superfund" to pay for cleaning up abandoned sites.

Much of the money spent by the Government on toxic waste cleanup in the superfund program, the Energy Department's cleanup of nuclear waste plants and the Pentagon's cleanup of its bases and plants has gone to consultants, engineers, lawyers and chemists.

In his memorandum, Mr. Clay proposed to quicken the pace of cleanups under the superfund program by offering polluting companies that want to voluntarily conduct the cleanup work themselves a way to easily gain "official E.P.A. approval" instead of putting the company through the usual bureaucratic maze.

Buchanan goes to Georgia to make stand against Bush

By Donald Lambro
THE WASHINGTON TIMES

ATLANTA — Pat Buchanan returned to Georgia yesterday to rally his troops and draw a line in the red Georgia clay where he says his populist campaign will cut into President Bush's Southern strength.

Buchanan strategists here and some Republican Party regulars say Mr. Buchanan's anti-government, anti-tax message is popular in Georgia, especially in the rural counties, and that he will do well here in the pivotal March 3 primary.

"In a number of rural counties he's going to draw a lot of support," said Dan Wolf, Republican chairman of Forsyth County, a suburban bedroom community near here. "His conservative message is playing well."

In an abrupt change of plans, Mr. Buchanan flew here yesterday after a two-day, five-city swing through Florida where his strategists said he had little chance of overcoming the president's strength in the state.

Tom Hines, Mr. Buchanan's Florida campaign manager, said "while we can do well in Florida, this is a George Bush stronghold."

So Buchanan strategists have de-

cided to make their stand in Georgia, which is a key Southern battleground leading up to Super Tuesday on March 10. Mr. Buchanan called this state "the New Hampshire of the South" yesterday and he has begun running new radio and TV ads throughout Georgia.

"This is a make-or-break state for us," said a Buchanan adviser. "We've got to do well here."

Mr. Buchanan said he would return here Thursday night and campaign full-time until the primary.

Meantime, the conservative commentator continued to flog the president and the GOP for treating him unfairly in the primaries by keeping him off some primary ballots, including South Dakota, New York and Kentucky. And he dropped veiled hints that if the tactics continued he might not support Mr. Bush in the fall if the president is the nominee.

"If George Bush beats me in a clean, straight, fair fight, then I will support him all the way through November," he said. "But I expect to be that nominee."

But Mr. Buchanan said the Bush campaign was not treating him fairly. "What are they afraid of," he said at a news conference and rally earlier in the day outside the Florida

state Capitol in Tallahassee, "that I would walk in like the Pied Piper and lead all those hairy-chested Republicans off to my camp? ..."

"If anybody is running a party that is closed to debate and dissent and legitimate argument, it is Mr. Bush's establishment in Washington, not Pat Buchanan," he said. "I want equal access."

Traveling by car to Ellijay, a small community in rural Gilmer County about an hour's ride northwest of Atlanta, Mr. Buchanan was greeted at a middle-school rally by a crowd of several hundred supporters who cheered his conservative message. He later stopped and had a pork barbecue sandwich at a nearby popular eatery run by Oscar and Edna Poole — who were volunteers in his New Hampshire campaign.

Returning to Atlanta in the afternoon for a rally and a round of media appearances, Mr. Buchanan made an unscheduled stop at a Kentucky Fried Chicken restaurant in nearby Marietta to pose in front of the huge sign atop the fast-food franchise.

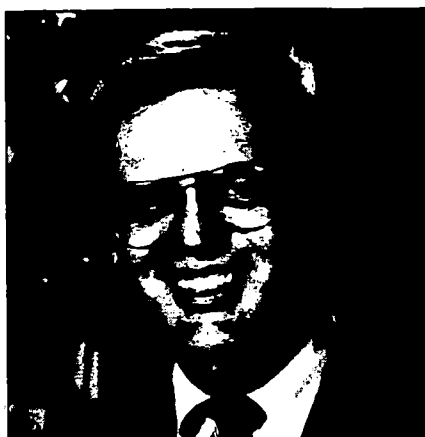
"We'll put it outside the Republican National Committee and replace the elephant as the symbol of a party that likes to keep folks off the ballot," he said.

the City Center, another new building several blocks from the Warner. Those efforts appear to have "irritated" Austin, said one FCC official.

In his appeal to Austin, Sikes argues the Portals is inaccessible for the handicapped because of the roads and narrow sidewalks that surround it, and it will not be ready for use in January 1993, as the SFO demands. Sikes also says the 286,000 square feet falls 50,000 square feet short of what the FCC feels it needs.

In forcing the FCC into the Portals, the GSA is being penny-wise and pound-foolish, Fishel said. The nearest amenities are a 20-minute walk away, he said. The costs of the lost productivity alone—\$84 million over 20 years—will "dwarf any rent savings," he said.

The 286,000 square feet of space Austin has approved—the minimum asked for in the SFO—is "totally inadequate," Fishel said.



GSA's Richard Austin wants the Portals

Rather than move into the Portals, the FCC would prefer to stay where it is, Fishel said. Not only would it avoid disruption of the bureaucracy, it would also save the taxpayers around \$25 million over two years in moving and construction expenses, he said. Sikes and Fishel are not the only FCC

FCC TAKES FM OFF AIR IN ILL.

The FCC has pulled the plug on WCFL(FM) Morris, Ill., for operating with excessive power, using a nondirectional antenna when it should have been using a directional antenna and for failing to have personnel at its transmitter, which is required because the remote control is inoperable.

The station, located about 65 miles from Chicago, was operating under special temporary authority. The Mass Media Bureau sent the station a letter telling it to go off the air, and the station complied on Friday, Jan. 24.

officials who do not want to go to the Portals. "It's a horrible place," said another high-ranking FCC official. "It's like buzzard's point."

FCC DOING ITS BIT FOR MORATORIUM

Sikes orders review of rules in accordance with President Bush's request for halt to any new regulations that hurt business

By Harry A. Jessell

By the time President Bush unveiled his 90-day moratorium on new government regulations (and mandate for review of existing ones) in his State of the Union address last Tuesday, the FCC was already well on its way toward doing its part.

Notified of plans for the moratorium a few weeks ago, FCC Chairman Alfred Sikes had ordered an agency-wide review of the rules and identification of those that are "outmoded and unnecessary."

Following the address and the receipt the same day of a three-page memo laying out the scope of the moratorium and bearing the President's signature, Sikes intensified preparations with a meeting of bureau and office chiefs on Thursday morning.

The result of the push may be one or more omnibus rulemakings proposing elimination of a variety of rules similar to the "regulatory underbrush" proceedings that became one of the hallmarks of Mark Fowler's chairmanship during the Reagan years ("Closed Circuit," Jan. 27).

The President's initiative may also

give a boost to some of Sikes's deregulatory efforts, most notably proceedings aimed at relaxing the ownership restriction of radio and television. It may also help Sikes persuade other commissioners to consider relaxation of the prime time access rule, despite their oft-expressed reluctance to do so.

As an independent agency, the FCC is not obliged to participate in the moratorium. But FCC Chairman Alfred Sikes is on board, and it is unlikely any of the other four commissioners—all Bush appointees—would ignore the Presidential initiative.

In his annual speech, Bush told Congress and a television and radio audience of millions that he had asked for "a 90-day moratorium on any new federal regulations that could hinder growth."

"In those 90 days, major departments and agencies will carry out a top-to-bottom review of all regulations, old and new, to stop the ones that will hurt growth and speed up those that will help growth," he said.

In his memo, the President asked participating agencies to appoint a "regulatory oversight official" and submit reports of deregulatory actions

with the working group of the White House Council on Competitiveness, which is overseeing the moratorium. Sikes met with White House officials to discuss the moratorium and the FCC's possible role on Jan. 15. Six days later, he sent a memo to the other commissioners soliciting their support in reviewing rules "with a view toward eliminating those that are outmoded or unnecessary."

"We can leave, as part of our legacy," Sikes said, "the termination of needless contact between the government and the private sector which siphons off a measure of private wealth and FCC resources [especially tight as demand increases and public revenues face sustained shrinkage]."

Sikes suggested there is plenty to do. "[D]espite the deregulatory efforts of the last few years, the FCC rules and regulations still take up nearly 3,000 pages in the Code of Federal Regulation." What's more, he said, the FCC uses 300 different forms.

Sikes also distributed to the other commissioners copies of a two-page memo he sent to the White House setting forth deregulatory initiatives during his chairmanship.

Included among the six mass media items was adoption of uniform technical standards for cable systems that will "reduce burdens of local cable system operators due to multiple, sometimes conflicting, local franchise technical requirements." The only problem is the FCC has not yet adopted the stations. They are expected to be adopted, however, at the FCC's next meeting on Feb. 12.

The list also includes repeal of the ballot-issue corollary of the fairness doctrine; revamping of the rules governing MMDS and other wireless cable facilities; review of the radio and TV ownership restrictions; improvement of processing of FM new-station and modification applications, and streamlining of the comparative hearing process for awarding new broadcast licenses. ■

agreement have to be very careful that they don't give up their renewal expectancy to somebody else."

Attendees also questioned Stewart about the possibility of the allocation of spectrum for high-definition television bumping low-power television stations (LPTV) off the air. According to a recent study by Pennsylvania State University, a majority of LPTV stations offer a religious format. While Stewart said he did not anticipate any significant impact on LPTV, especially in rural areas, he emphasized that "LPTV was created as a secondary service—you can't forget that." Added Stewart: "Our responsibility is to bring technology to the American public."

The FCC Mass Media Bureau Chief also told attendees he was anticipating staff cuts because of budget considerations. "I expect over the period of the year we will suffer losses of staff without being able to replace them on

FCC SEES FUTURE FOR LMA'S

According to Mass Media Chief Stewart, commission will continue to allow local marketing agreements

By Joe Flint

Don't look for the FCC to rule that local marketing agreements (LMA's) are against the public interest. That's the word from Mass Media Bureau Chief Roy Stewart, who added that while the commission "may decide to have some restrictions," he did not think the "spigot will be turned off." An LMA agreement typically allows a party other than a station's licensee (often a broadcaster in the same market) to control programming and/or advertising on the station in return for a flat fee or a percentage of advertising sold.

Stewart, speaking at an FCC panel at last week's National Religious Broadcasters convention in Washington, said he thought "as long as there is no unauthorized transfer of control of the license" there is nothing wrong with that type of time-brokerage agreement. Stewart did not speculate on the fate of a bill before the House of Representatives (H.R. 3715) limiting the amount of time a licensee can sell to 25% or less. The FCC's Field Operations Bureau recently concluded an audit of about 280 randomly selected radio and TV stations and hopes to have the results in front of the commissioners within the next two weeks. An FCC rulemaking aimed at clarifying LMA rules is part of the commission's comprehensive overview of radio rules.

Stewart did tell NRB attendees not to forget that they are responsible for the license and the requirements that come with it. Said Stewart: "What happens if somebody files a petition to deny or a competing application

[against an LMA station] and says this 'licensee's principles have been at the beach for the last five years. They've leased their station to somebody.' People that enter that time-brokerage

BARRETT COLD ON FM FREEZE

Granting the National Association of Broadcasters' upcoming request for a freeze on new FM stations could "close the door" to newcomers to broadcasting, FCC Commissioner Andrew Barrett told a group of attorneys in Chicago.

"I agree that more is not always better, but am concerned that no new license grants coupled with greater concentration of existing media may close the doors for new entrants to broadcasting," Barrett said in a Jan. 24 speech to the Midwest chapter of the Federal Communications Bar Association.

Acting on the vote of its board last month, the NAB plans to ask the FCC formally for a halt or a slowdown in the granting of new FM licenses within the next week or two (BROADCASTING, Jan. 27). It will argue that FCC policies of the past decade have produced a glut of FM stations on the air that makes it tough for all to survive.

Barrett also said he was wary of the ongoing reviews of the FCC ownership limits, saying that liberalizing or repealing those limits may lead to "greater concentration of existing media. We must be careful to insure that there is still some form of commitment to diversity and localism."

Barrett predicted FCC Chairman Alfred Sikes would move to relax radio ownership restrictions prior to the NAB convention in April and, if Congress does not protest that action too loudly, proceed to do the same to the television rule in June or July.

Looking ahead to other issues, Barrett said the FCC will not consider restrictions on time-brokerage agreements "until late this year, if at all." "I doubt if Sikes will take on this issue before he accomplishes what he wants with respect to ownership rules," the commissioner said.

Action on a proposal to reinstate the must-carry rules "depends in large measure on whether Commissioner Quello can convince two other offices to go against the chairman," he said. Such rules would require cable systems to carry local broadcast signals.

Barrett said he shares the lack of enthusiasm for a proceeding to relax the prime time access rule. "Although there does not appear to be three offices wanting to bring [reform of the prime time access rule] up for a vote any time soon, the chairman may attempt to raise it this year." —BA

Quayle on trail for deregulation

By Dave Skidmore
THE ASSOCIATED PRESS

10/197

Senior Bush administration officials yesterday detailed the president's plans for easing the regulatory load on businesses and asked lobbyists and business executives to suggest more rules to revise.

"Now's your chance. Come and tell us what regulations and rules are burdening the private sector," Vice President Dan Quayle told a gathering of about 170 trade association representatives and others with an interest in deregulation.

"You're the ones who are out there, who are being impacted by these rules," he said.

Mr. Quayle, in a brief campaign-style appearance at the Old Executive Office Building, next door to the White House, described the 90-day moratorium on new regulations, announced by President Bush in his State of the Union address, as a chance to reassess the reams of regulations on the books.

"Not all regulations are bad," said Mr. Quayle, who is leading the deregulation effort as head of the White House Council on Competitiveness.

But "you have to start with a certain bias, and I think you know where my bias is," he said, adding, "To overzealous regulators — you've met the enemy, and it's called the Com-

petitiveness Council and we are going to make sure the president's order is fully implemented."

The president's senior economic adviser, Michael J. Boskin, and other officials at another briefing, outlined three areas where the administration is hoping to use changes in regulation to prod the economy.

They are:

- Revisions in banking rules to encourage more lending.

- Changes in Internal Revenue Service practices to make it easier for businesses, particularly small ones, to administer payroll income tax withholding.

- A pilot program in New Hampshire by the Small Business Administration to take over business loans from failed banks.

Among the changes in banking rules is one to help banks that collect mortgage and credit card payments on behalf of other lenders. They would be allowed to count such "servicing rights" as part of their capital, the financial cushion protecting banks from failure.

Many accountants are skeptical of such a change. They point out that when a mortgage is refinanced, the servicing right — and the fee income it generates — disappears. Also, the Office of Thrift Supervision has reduced the financial reporting requirement for savings and loans from 12 times to four times a year.

The True Cost of Government

By ROBERT GENETSKI

President Bush showed he had some understanding of problems of the economy when he announced his 90-day freeze on regulation in the State of the Union address. But it is clear that Mr. Bush hasn't grasped the full extent to which regulation has added to the burden that taxes impose on the economy. Regulation's effect on the economy can be every bit as damaging as the effect of taxes. Even though Americans have not seen it in their pay stubs, they have borne the equivalent of growing tax burdens. And tax burdens have climbed as dramatically during his watch as they have under any other president.

The table shows the combined tax and regulatory burden that has been placed on American businesses and workers in recent years. The numbers refer only to increases over and above whatever was imposed the previous year. For example, a new tax of \$25 billion in year one that continues to bring in \$25 billion each year thereafter is listed as \$25 billion in year one and nothing thereafter. Only if the tax is increased above its initial level is the increase presented in a subsequent year.

Hide Burden

In a few cases, Congress and the administration have decided to hide the true burden of government programs by ordering businesses to spend the necessary money to comply with certain edicts. But ordering companies to spend \$25 billion to fulfill a public need does not mean that the public has avoided a \$25 billion tax. Businesses today earn only 4 cents in profit for every dollar of sales. When a businessman receives the bill for a mandated benefit, the business must reorganize its operations in order to survive. This often means layoffs, plants closing and other cost-cutting moves. Companies that are not able to cut costs sufficiently to pay for the additional burdens are forced to close entirely.

The Clean Air Act and the Americans with Disabilities Act represent two of the largest hidden tax burdens to hit the economy in 1991 and 1992. In both of these cases, the administration and Congress appear to have seriously underestimated the cost of compliance with these acts. Both of these acts are worded so vaguely that the regulatory bodies have raised the cost of compliance far above the official figures. The numbers presented in the accompanying table are conservative estimates.

The official estimate for complying with the Clean Air Act was put at roughly \$25 billion per year. Nongovernmental estimates of the cost of complying with the act range as high as \$100 billion per year. The table shows a compromise compliance cost of \$25 billion in new compliance expenditures for 1991 and an additional \$25 billion for 1992.

It appears too that the cost of complying with the Americans with Disabilities Act will be staggering. The disabilities act was supposed to cost \$2 billion annually, but depending on how aggressively it is im-

plemented, the cost of compliance could easily amount to at least \$20 billion a year for the next five years.

Based on an early sample of plans to alter office buildings to comply with the Americans with Disabilities Act, the cost of compliance appears to be close to \$5 per square foot. This figure does not take into

In addition to the costs of complying with these mandates, there are legal and administrative costs to consider. In the case of the Americans with Disabilities Act, vague terminology virtually assures billions of dollars per year in legal expenses. No attempt was made to estimate these legal and administrative expenses.

Major New Tax And Regulatory Burdens					
Billions of additional dollars					
	1988	1989	1990	1991	1992
PAYROLL TAX	\$13.0	\$14.0	\$10.9	\$14.0	\$7.4
CHANGES IN DEPRECIATION SCHEDULES	4.6	22.3	20.6	4.0	0
NEW TAXES, 1987	6.2				
NEW TAXES, 1988		0.1	5.6		
NEW TAXES IN 1990 BUDGET ACCORD				23.2	10
HIGHER DEPOSIT INSURANCE PREMIUMS		0.5	1.4	1.8	1.8
CLEAN AIR ACT				25	25
AMERICANS WITH DISABILITIES ACT					20
FEDERAL TOTAL	23.8	36.9	38.5	68	64.2
STATE TAXES	N.A.	N.A.	10.3	15	15
INCREASE IN FEDERAL AND STATE TOTAL			48.8	83.0	79.2
TOTAL INCREASE IN BURDEN, 1988-1992					\$271.7

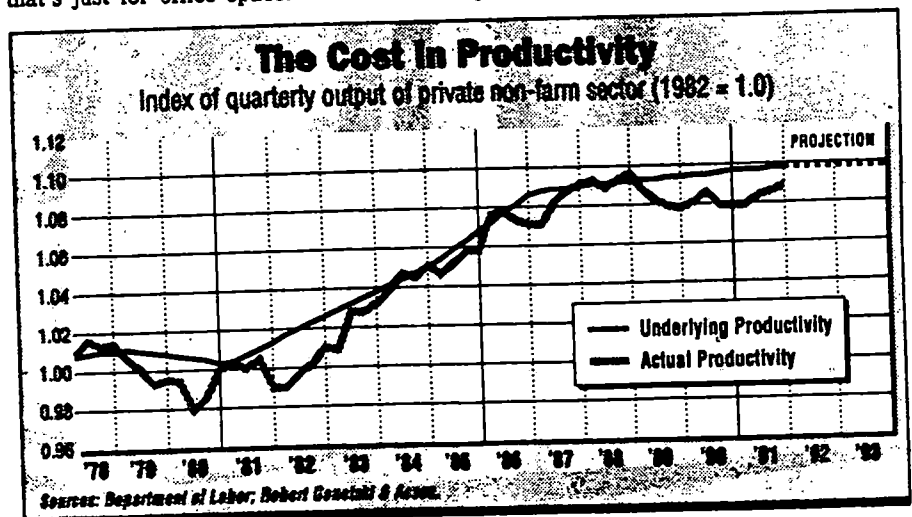
Source: Robert Genetski & Assoc.

N.A.—Not available

account all possible modifications, but just those that are deemed "reasonable."

There are an estimated 180,000 square feet in an average office building. This places the cost of compliance at almost \$1 million per building. There are an estimated nine billion square feet of office space in the nation, bringing the total compliance cost nationwide to \$45 billion. And that's just for office space.

None of these calculations should be taken to suggest that it is somehow wrong or bad to spend money for cleaner air or to help the disabled. The list of worthy causes has no real limits. Unfortunately, there are definite limits to the amount by which tax and regulatory burdens can be raised without having a serious economic impact. The present economic situation strongly suggests that the push toward higher tax and



The American Hospital Association, a hospital lobby, estimates that its members will have to spend \$20 billion to bring hospitals into compliance. We're already at \$65 billion and counting—and that's before considering the costs for equipping trains, buses, restaurants, rental cars and public facilities.

regulatory burdens has had much greater costs in terms of lost jobs and weaker productivity than most people had assumed.

Recent productivity trends clearly support the sense that something is wrong. But the problem is not that Americans are "lazy," as a Japanese politician has recently been quoted as suggesting. Part of

the recent weakness in productivity can be attributed to the recession. Productivity tends to increase more slowly than normal during recessions and faster than normal during recoveries.

Still, adjustments can be made for cyclical developments. Judging from past experience, the magnitude of the current recession should have caused actual productivity to fall approximately 2% below a level consistent with a fully employed economy. After making such an adjustment, we see that it becomes readily apparent that U.S. cyclically adjusted productivity has deteriorated dramatically in recent years. The record of what we can call underlying productivity is convincing support for the widespread sense that America's economic problems are more fundamental than cyclical.

Each society has its fair share of workers and loafers. The extent to which those workers improve their productivity depends far more on the overall economic environment in which they operate than on their inherent intelligence or initiative. Tax burdens are an important determinant of that environment.

During the period from the late 1970s to 1981, productivity growth in the U.S. deteriorated dramatically as tax burdens rose. With the tax cuts of 1982-84, U.S. productivity growth returned to its long-term average. Productivity rose by approximately 1.5% per year in the mid-1980s, and the nation experienced its longest peacetime expansion. More recently, the resumption of higher traditional and hidden tax burdens has again brought about a fundamental deterioration in the nation's productivity trend and a renewed sense of economic malaise.

After showing the rest of the world how lower tax rates could boost productivity and living standards, the U.S. regressed. Fortunately, the U.S. economy can revive. Layoffs can be brought to an end and productivity growth restored.

Painful Measures

Many politicians have maintained that such a revival would mean painful measures. In a sense, they are right. A true revival would involve major cuts in traditional and hidden taxes to offset the increased burdens that have occurred. This, of course, would not be painful for most workers and businesses—they would keep more of their income. But it would be painful for politicians and, in some cases, those who benefit from regulation, such as the handicapped. Cuts in traditional taxes or in regulation would mean that politicians would be forced to recognize that there are effective limits to what public policy can accomplish.

In a democracy, the public seldom tolerates poor economic performance for very long. For those politicians who fail to recognize the limits to public policy, there will eventually be political costs as well.

Mr. Genetski heads Robert Genetski & Assoc., a Chicago-based consulting firm.

Coping with the regulatory blues

6/16/1997

When President Bush delivers the State of the Union address today, he will announce his magical plan to restore America's economic vitality. Among the tricks he is expected to unveil is a sweeping deregulatory initiative that it is hoped will demonstrate he has not forgotten the free-market message of the Reagan Revolution. As conservatives and other free-market advocates pile on to the bash-Bush bandwagon, such a demonstration is becoming increasingly necessary for the president's re-election.

The deregulatory initiative that is expected will be a 90-day moratorium on the implementation of new regulations. To be fair to the president, this step does appear to be substantial and should have tremendous symbolic value. It is a sign that the president is finally recognizing the tremendous drag that regulations can impose upon the economy. A drag that by some estimations reaches more than \$400 billion annually, which amounts to more than \$4,000 for every household in the United States. According to the Environmental Protection Agency, environmental regulations alone cost \$115 billion in 1990.

One thing the initiative clearly demonstrates is that the president now recognizes the importance of regulatory policy to economic growth. Still, one has to wonder why this revelation was so long in coming. As vice president, Mr. Bush was a point man in the Reagan administration's deregulatory battles. In that capacity, Mr. Bush assisted in rolling back regulations imposed throughout the 1970s.

Whereas the Reagan administration could blame his predecessors for the massive buildup of bureaucratic red tape, Mr. Bush has no one to blame but himself. Government spending on regulatory activities up by more than 20 percent what it was during the last year of the Carter administration. Spending at the EPA alone has increased 31 percent since Mr. Bush took office.

Whereas the president may wish to blame Congress for this regulatory explosion, each and every piece of regulatory legislation to be enacted in the past three years has been signed by the president. From the Americans with Disabilities Act to the 1990 Nutrition Labeling Education Act, George Bush has done little to halt the increase in red tape.

That Bush has changed his tune is certainly a promising sign. Moving against regulations, both new and old, is a necessary step for economic recovery. Like all good things, this initiative is better late than never. Nonetheless, it must be understood that the immediate impact of the moratorium will be rather limited in scope.

Many of the regulations coming down the pike are bound by statutory deadlines. As a result, the ad-

ministration cannot simply wish them away. The 1990 Clean Air Act has been the cornerstone of Mr. Bush's bid to be the "environmental president." Now the act is beginning to cost jobs and burden the economy and there is little the president can do. This act is replete with deadlines for regulatory action that the executive cannot override without congressional consent.

Viewed as a political boon to the president in his attempt to woo environmentally conscious voters, this multibillion-dollar monstrosity is now the administration's bane as they attempt to deregulate the economy.

If the president is truly serious about spurring new growth through the powers of deregulation, there is still much more to be done. For a start, the president must make a new appointment for the head of Office of Information and Regulatory Affairs (OIRA). This post — incredibly important in the war against excessive regulation — has not been filled since Mr. Bush took office. The Council on Competitiveness may do

The regulatory burden imposed by the federal government continues to cost jobs and productivity.

great work in limiting the painful impact of new regulations, but it cannot do the job alone. Covering fire from OIRA is needed immediately.

Even more important, if Mr. Bush wants to halt the regulatory creep that has infested his administration, it is time to stop providing the agency vultures carrion on which to feed. Mr. Bush cannot claim to be in favor of deregulation as long as he continues to back new bills that establish increased regulatory authority.

With the rapid approach of even more regulatory initiatives, from the reauthorization of the Resource Conservation and Recovery Act to new attempts at re-regulating the cable television industry, the need for increased scrutiny of regulatory activity is as important as ever. Even finalized regulations need careful review. Perhaps the moratorium will provide the Council on Competitiveness with that opportunity.

Americans should be happy that deregulatory action has finally found its way onto the president's radar screen, but by no means should they be content. The regulatory burden imposed on the economy by the federal government continues to cost jobs and productivity. It must be cut back if the growth of the 1980s is ever to return.

If the president has finally learned this lesson — and by now he should have — then it is time to get down to business. The regulatory moratorium, while a decent first step, should be only the beginning.

Heads of Agencies Asked to Weed Out Unnecessary Rules

By BOB DAYS

Staff Reporter of THE WALL STREET JOURNAL

WASHINGTON—President Bush asked agency heads to strive over the next 90 days to "weed out unnecessary and burdensome government regulations."

In a memorandum, the president asked cabinet officials and heads of independent agencies to identify regulations that impose a "substantial cost on the economy" and decide whether they meet certain standards, including whether they are cost-effective. "To the maximum extent permitted by law," the president said, "your agency should refrain from issuing any proposed or final rule" during the 90-day period.

Agency rules should set "performance standards" instead of "prescriptive command-and-control requirements," the presidential memorandum said. That would let businesses meet regulations "at the lowest possible cost," it said.

The memorandum didn't contain any hit list of regulations that the White House wants altered or scrapped. Instead, the president asked each of the agencies to name a senior official for "permanent regulatory oversight," and he requested that agencies propose regulations to be altered. Rules "imposing the largest unnecessary burden [should be] the first to be revised or eliminated," the president said.

Public Citizen, a Washington, D.C., consumer group, said the presidential action could block rules that the Occupational Safety and Health Administration was expected to issue soon to limit worker exposure to cadmium, formaldehyde and grain dust, among other substances. David Vladeck, a senior attorney at the Ralph Nader-affiliated group, threatened to sue if the rules are held up because of the regulatory ban.

Although the White House hasn't released a list of regulations that could be affected, senior aides there have said they are especially interested in easing rules regarding telecommunications and the introduction of genetically engineered plants and pesticides.

In his memorandum, Mr. Bush said rules would be exempt from the moratorium if they respond to health and safety emergencies, affect the military, are required by statute or are essential to a criminal investigation. In addition, the president said rules could be issued if the agency involved and the White House Council on Competitiveness determine they would "foster economic growth."

The council, headed by Vice President Dan Quayle, is charged with overseeing the regulatory moratorium and review.

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Which Boss Should a Poor Regulator Believe?

It's easy to dismiss President Bush's 90-day moratorium on federal regulations by predicting a superfat edition of the Federal Register on Day 91. Maybe. It's also possible, though, that 90 days can become happily ever after. Intentionally or not, Mr. Bush has created the greatest chance in years to bring political accountability to the "independent regulatory agencies."

Mr. Bush announced a freeze on regulations and ordered a review of all existing federal rules in his State of the Union. His

Rule of Law

By L. Gordon Crovitz

order, styled "Memorandum for Certain Department and Agency Heads, Subject: Reducing the Burden of Government Regulation," is addressed to cabinet officers, but also to the heads of agencies such as the Securities and Exchange Commission, Federal Trade Commission and Environmental Protection Agency.

This is key because if these "independent" regulators fail to comply, we could finally get a challenge to their constitutionality. No one thinks any agency will sponsor a bonfire of its inanities, but Mr. Bush set up an intriguing test of his control over the bureaucracy if agencies fail to comply, as the EPA already threatens. At the end of the 90 days, Mr. Bush expects a written report from each agency that includes "a summary of any regulatory programs that are left unchanged and an explanation of how such programs are consistent with the regulatory standards" excerpted nearby.

One congressman is already gunning for a constitutional High Noon. John Dingell wrote a dozen agency heads, including Richard Breeden at the SEC and Alfred Sikes at the Federal Communications Commission, warning that they'd better not

comply with Mr. Bush's regulatory moratorium or his order to review their current rules. Rep. Dingell warned against being "impeded, subtly or otherwise . . . voluntarily or not, at the urging of the White House." The Dingellgram also warned agency heads not to consult with "anyone in the executive branch about this letter or the content of your reply."

So independent agencies are supposed to be independent of the president, but not of the chairman of the House Commerce Committee. This isn't how the constitutional system was supposed to work. The Founders set out three branches—legislative, executive, judicial. There is no reference to a quasi-anything branch of government. Even FDR, who created many of these agencies, eventually complained that they "constitute a headless 'fourth branch' of the government, a haphazard deposit of irresponsible agencies and uncoordinated powers" that "cannot be controlled by the president."

There are few constitutional questions as stark as whether these agencies fit in our constitutional system. Theodore Olson, a former Reagan Justice Department official, has a telling anecdote. He recalls he was perplexed when he looked up the rules of succession when President Reagan was shot, only to see that his pocket copy of the Constitution was printed before adoption of the 25th Amendment. "So when I started thinking about independent agencies and could not find a fourth branch of government mentioned in my Constitution," Mr. Olson said in a recent speech, "I thought that maybe I had another defective Constitution, or perhaps that two of the pages had become stuck together."

For years, Mr. Olson and other strict constructionists have wanted the Supreme Court to review the legal status of independent agencies. Justice Antonin Scalia has said in several opinions that the constitutionality of these agencies remains an open

question. The difficulty has been finding a way to get one of these cases before the Supreme Court.

Regulated businesses might be able to go to court to oppose burdensome regulations that remain on the books after the 90 days are up. Or the Bush administration could take the opportunity of quasi-compliance with a presidential order by quasi-constitutional regulatory agencies to resolve the question. Whether or not the administration planned a confrontation with Congress on who, if anyone, controls the regulators, Mr. Bush's Justice Department should be ready if called.

The confirmation hearings for Attorney General William Barr in November were so affable that few noticed an important exchange on this question between Sen. Jo-

If Regulators Answer The President's Call

President Bush's State of the Union called for a 90-day moratorium on new federal regulations. It also ordered a review of all existing regulations, which he said should be repealed unless they:

- Include benefits that clearly outweigh the costs
- Use performance standards, not command-and-control edicts
- Use market mechanisms
- Provide clarity and certainty to avoid needless litigation

seph Biden and Mr. Barr. Mr. Biden, who during the Clarence Thomas hearings publicized the Takings Clause and property rights, also drew attention to this area of separation of powers.

"There is a whole, well-informed, articulate school of thought that argues that the present regulatory agencies, which I believe if they got before the court, adopting Scalia's rationale, would all be declared unconstitutional," Sen. Biden said. "I can't think of a single administrative agency that isn't quasi-judicial, quasi-legislative

and quasi-administrative. Those who believe the government interferes in the lives of Americans too much already aren't real crazy about any of those agencies, whether it's the FDA or the FCC or I mean, just go down all the alphabets."

His point is that limiting independent agencies would limit regulatory intervention. "We are not capable of determining whether or not there should be .005 parts per billion of a carcinogenic substance in the effluent of a factory coming out of the wall of a factory," Sen. Biden told Mr. Barr. If Congress is "held up to that, which is part of the scheme that you may not be part of, or part of the intellectual construct that's under way, then that obviously is going to tie us up so long, in such mire and detail, that we're not going to be able to make policy judgments."

In other words, Congress can't regulate so broadly or deeply into the economy as the independent agencies do. The problem is that Congress also refuses to put the agencies under the control of the executive branch. The Founders, who envisioned a much less intrusive federal government, might have said that if no politically accountable body can regulate, then no one should.

The key exchange occurred when Sen. Biden said, "Well, if the president asked you to pursue a litigation strategy that would challenge the constitutionality of independent agencies, how would you respond?" The diplomatic Mr. Barr said, "I'd have to see if we could make reasonable, good-faith arguments."

Sen. Biden cited Justice Scalia for the good-faith argument that Mr. Bush's lawyers could bring. "I will promise you that before the next several years are out," Sen. Biden said, "there's going to be a direct constitutional attack on the constitutionality of a number of the independent regulatory agencies."

Maybe sooner, not later.

- Carol -

This is some
information on regulations
that Home Builders are
opposed to. The first one
Hazardous Communications is especially
significant & important.

Give me a call
if you have any

questions. Kristin Ryan

X6222

Council on Camp.



National Association of Home Builders

15th and M Streets, N.W., Washington, D.C. 20005

(202) 822-0401 Fax No: (202) 822-0374

Kent W. Colton, Ph.D.
Executive Vice President &
Chief Executive Officer

March 20, 1992

Mr. Roland G. Droitsch
Deputy Assistant Secretary for Policy
U.S. Department of Labor
Room S2312, Francis Perkins Building
200 Constitution Avenue, N.W.
Washington, D.C. 20210

Dear Mr. Droitsch:

Re: DOL Regulatory Review, 57 Fed. Reg. 6301 (2/24/92)

Introduction

On behalf of the 151,000 members of the National Association of Home Builders, I am pleased to submit these comments in response to the above-referenced notice and the President's ongoing review of burdensome regulations throughout the federal government.

NAHB's members are involved in all aspects of building and supplying single-family homes, apartments, condominiums, and commercial and industrial projects, as well as land development and remodeling activities. Virtually all of our members are affected by DOL regulations. The focus of our present comments will be on two rules issued, or about to be issued, by the Occupational Safety and Health Administration. These are (a) the Hazard Communication Standard, 29 CFR § 1926.59, which became effective in the construction industry on March 17, 1989, and (b) OSHA's proposed rule dealing with Occupant Protection in Motor Vehicles, 55 Fed. Reg. 28,727 (1990), which is expected to be finalized later this year.

The Hazard Communication Standard

The Hazard Communication Standard, or HCS, generally requires all employers to educate their employees about the hazardous chemicals to which they are exposed in the workplace, and the methods necessary for the employees to protect themselves from dangerous exposure. The HCS has a long regulatory history, much of which is not relevant in the present context. We would, however, like to call the Department's attention to the rule's "multi-employer worksite" rules, § 1926.59(e), and suggest that they be reviewed and modified.

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The multiemployer worksite requirements of the HCS principally affect employers in the building industry. They require such employers to maintain copies of their written hazard communication programs and material safety data sheets (MSDS) on each site. These provisions, which were drafted in order to "tailor" the HCS to the construction industry (see 52 Fed. Reg. 31,865) have proven to be extremely onerous for the small builders who predominate in our industry. As we have repeatedly argued to OSHA over the past few years, much of the home building which takes place in this country occurs at small, scattered sites, often with only one or two contiguous lots under development at a time. These projects do not contain jobsite trailers or other office-type facilities where written programs and collections of MSD sheets can be safely stored. Moreover, for a builder who may simultaneously be working on dozens of such scattered sites, the multiemployer rules literally require that a sufficient number of written programs and "MSDS books" be copied, distributed, and maintained on all of these sites.

In our view, this is the classic case of a regulation which "imposes a substantial cost on the economy" with little corresponding benefit. Our concern with this provision is demonstrated by the construction industry's litigation over the HCS which culminated in the Supreme Court's 1990 decision in United Steelworkers of America v. Dole, 494 U.S. 26 (1990). While that decision held that the Office of Management and Budget did not have the authority to review the HCS under the Paperwork Reduction Act, OSHA still has the authority to modify the rule to eliminate these useless and expensive paperwork requirements.

Turning specifically to the criteria set forth in the President's directive to the agencies, we would note the following:

(a) The benefits to society of this regulation do not outweigh the costs. Many builders have spent thousands of dollars in staff time and copying costs in order to comply with the paperwork requirements of the HCS. Yet the corresponding benefits to society, particularly insofar as any demonstrable increase in worker safety or health, have yet to be established. OSHA continues to insist that MSD sheets serve a useful function as a means of communicating hazard information to employees, and that they provide important information that cannot be conveyed by a traditional warning label on a container. This hardly recognizes the realities of the workplace. Common sense dictates that in the event of fire, ingestion, inhalation, spill, or any other emergency associated with the use of a hazardous substance, workers will look first to the container label for guidance. MSD sheets cannot serve this function. MSD sheets are complex technical documents which may run as long as 30 or 40 pages in length. They are prepared by chemical manufacturers, and the information which they contain is

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well beyond the comprehension of most workers. To give one example, the MSD sheet for common photocopier toner (copy attached as Exhibit A to these comments) is replete with the results of various toxicological tests which have been performed over the years on rats, rabbits, guinea pigs, and fathead minnows. This is hardly the type of information that saves lives in an emergency. Yet the maintenance of these documents on all jobsites is costly and a tremendous regulatory burden upon our industry.

(b) This regulation is not fashioned to maximize net benefits to society. Maximizing net benefits means maximizing worker protection while keeping regulatory costs to a justifiable level. As between labels and MSD sheets, it is clear that the former are less costly. Labels are printed for all containerized products, and many noncontainerized ones as well. They serve a variety of purposes, including product identification, marketing, instructions for use, etc. The incremental cost of requiring chemical manufacturers to add hazard information to their labels (something they have been required to do since the mid-1980's) is clearly less than the cost of developing and printing separate stand-alone documents such as MSD sheets.

With regard to benefits, given the widespread existence of detailed hazard warning labels in the industry, the incremental benefits of the MSD sheet requirement has never been proven to be substantial. In 1988, the construction industry made a substantial presentation to OSHA comparing the content and effectiveness of a label-based system with those of MSD sheets. See Exhibit B, "Comments and Request for Hearing by the Construction Industry Hazard Communication Coalition on Proposed Revisions to OSHA Hazard Communication Standard" (October 28, 1988), pp. 16-29. This analysis concluded that:

"[W]ith the exception of the manufacturer's telephone number, . . . product labels contain all the product-specific information necessary for an employee to protect himself. The information on product labels is much more readily available in case of emergency than that on MSDSs. The employee only has to pick the container and read, instead of going into a file drawer, searching through 300 MSDSs to find the right one, then reading through two to five pages of fine print and incomprehensible chemical data to find the required information." Id. at 28-29.

(c) The MSDS requirements are not performance-based. It is significant that despite these findings, the construction industry has never advocated the abolition of MSDS requirements. Our position historically has been that these documents, as technical as they are, can be made available to workers on some reasonable

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basis, such as at a central office location. This office may be a few miles from the worksite, but again, if the important information is on the label, there will be no need to create a system of MSD "libraries" on all sites. OSHA's continued insistence on having written programs and MSD sheets on all jobsites is a marked departure from the traditional notion that the HCS should be performance-based. By telling every construction firm in America where to put the MSD sheets, the agency has departed from this notion, and instead adopted a prescriptive command-and-control requirement that does not give the industry the flexibility to ensure that workers get the information they need.

(d) The MSD requirements do not take full advantage of market mechanisms. While there is no "market" for safety and health in any industry, there are considerations other than the threat of OSHA action which often dictate a company's safety and health policies. The omnipresent threat of private liability suits, and the ever-increasing insurance premiums in our industry, are important factors even to a company that has never seen an OSHA inspector.

The type of lawsuit which most directly relates to the issues addressed by the HCS is a so-called "failure to warn" case. These actions typically involve an allegation by a worker that an employer was negligent in not fully advising his employees of certain risks within the workplace. Any company whose business involves the use of hazardous chemicals has an economic interest in minimizing its risk in this area. OSHA's HCS might be considered a "standard" for compliance, and the builder may well decide that placing MSD sheets on all of his jobsites is appropriate, but this decision should be based on his assessment of the risks, and not on a government mandate.

(e) The rule does not provide clarity and certainty which will avoid needless litigation. As currently structured, the requirements of § 1926.59(b) will not minimize litigation. Indeed, they are an open invitation for OSHA inspectors to issue frivolous citations in situations where there is little impact on worker safety or health. As currently structured, any worker in America who is cutting a board, painting a wall, or caulking a bathroom is risking a citation to his employer, and a fine of several thousand dollars, unless there is a written hazard communication program and a file of required MSD sheets within reach. In many cases, the only way to fight such a citation is by retaining a lawyer and going to court. Thus, the HCS presents a tremendous risk of needless litigation, with little corresponding benefit to the overriding interest of employee safety and health.

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In conclusion, NAHB maintains its position that written programs and MSD sheets, to the extent they are deemed necessary, should be made available to workers on some reasonable basis, but not necessarily on every building site in America. We highly recommend that OSHA undertake a reexamination of this rule in light of several years of experience since its promulgation and make the necessary amendments to it.

Occupant Protection in Motor Vehicles

On July 12, 1990, OSHA proposed a rule dealing generally with the protection of occupants riding in motor vehicles while on company business. See 55 Fed. Reg. 28,727 (1990). This proposal deals with three principal issues: the wearing of safety belts in motor vehicles; the use of helmets on motorcycles; and the implementation of "employee driver safety awareness programs" by all employers regulated by OSHA. NAHB filed an extensive set of comments with OSHA on November 8, 1990 (copy attached as Exhibit C). The discussion below will analyze the rule under the criteria set forth in the President's directive:

(a) The rule's training requirements do not justify their costs. OSHA's own rulemaking proposal recognizes that training programs have been shown to decrease traffic citations rather than substantially decrease the number of accidents. See 55 Fed. Reg. at 28,730. While accidents are not wholly unrelated to driver skills, the real causes of accidents are fact specific driving conditions or "individual specific" factors such as drug and alcohol use. See Exhibit D, Insurance Institute for Highway Safety, Facts, 1990 Edition (1990), p. 27. Generic training programs are ineffective in addressing these problems. At the same time, the costs of such programs would be excessive in a decentralized industry such as construction. Workers moving from job to job may perform different tasks at each job. Also, there is a wide disparity of education and literacy levels within the industry. A standard program may not reach some workers while tailoring a program to skill levels would be expensive and would force employers into the role of driver education instructors. Further, monitoring training records and providing retraining when using different vehicles would not only hinder the mobility of the workers but add a costly layer of paperwork for employers. One need only go to a local Department of Motor Vehicles office to understand the bureaucratic nightmare of monitoring motor vehicle records.

(b) The rule is not fashioned to maximize net benefits to society. Maximizing worker safety is, of course, a prime concern of all employers in the construction industry. However, the proposed rule fails to provide maximum protection at a justifiable cost. Safety belt and motorcycle helmet requirements are somewhat

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narrow bands of protection. They realistically extend only as far as the jobsite unless the employer rides with his employees at all times. Any type of stepped-up enforcement would be time consuming and turn employers into traffic police. The wearing of safety belts and helmets is a habit and, like other habits, an employer's efforts of control really do not reach beyond the employer's direct contact with the employee. On the other hand, state laws which require safety belts and helmets at all times would extend the "safety belt habit" beyond the jobsite and onto the roads where it is most effective.

The net benefit of safety training is also not maximized under this rule. Again, there is little proof that such training reduces accidents. Accidents are more related to particular circumstances than to driver skills. Insurance Institute for Highway Safety, Facts, 1990 Edition (1990). Less rigid measures such as ad campaigns which remind workers to "stay alert" and "drive to stay alive" would serve as more focussed safety reminders to individuals as compared to an annual safety lecture.

(c) The occupant safety requirements are not performance based. Given the vagaries of how accidents happen and why people get hurt, it is apparent that the safety belt, motorcycle helmet, and training program requirements are not performance based. Mandating rigid standards in such a personalized field as safety is the wrong approach to take in an area that is really "habit" driven. Instead, individual employers, especially the small employer that dominates the construction industry, can best tailor programs to encourage vehicle safety. Some may even adopt similar programs. Ultimately, the safety program that works is the one that reaches the individual employee. The command element of a national standard with rigid requirements is ill-suited to reach the individual.

(d) The occupant safety rules do not take full advantage of market mechanisms. Beyond OSHA inspection to enforce safety measures, there is the threat of litigation, rising insurance premiums and public opinion. Each of these three factors has a substantial impact on how an employer encourages safety among his or her employees.

Obviously, employers in the construction industry are exposed to liability for work accidents on a regular basis. Their responsibility is extended considerably by putting workers on the road where an accident with a non-employee could impose liability on the employer. This exposure to a lawsuit is a powerful incentive for an employer to make sure the drivers he or she puts on the road are safe drivers. The proliferation of trucks and commercial vans which bear signs asking for reports of unsafe driving are proof that employers are concerned about the issue.

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As the cost and likelihood of litigation increases, builders will respond by increasing their safety programs and measures including, in many cases, mandatory safety belts and helmets and offering safety training.

Rising insurance premiums for the construction industry will engender a similar response. As OSHA noted, insurance companies have always been receptive to offering discounts for safe driving programs and measures. 55 Fed. Reg. at 28,731. Builders will embrace such an incentive as lower premiums and will meet or surpass whatever standards are set by the insurance company.

Finally, and perhaps most importantly, good safety records on the roads are a very visible reminder to the public that a company is concerned about consumers. As "Domino's Pizza" found out, a reputation for reckless driving damages public relations. Company drivers in vehicles marked with the company logo are especially conscious of the need for safe driving. Employers, seeing the potential negative publicity of unsafe driving, will instill the need for safety conscious driving in their employees. Further, a company with a "safety conscious" reputation will attract the quality employees especially sought after in the construction industry.

(e) The rule does not provide clarity and certainty which will avoid needless litigation. The difficulty of enforcing safety belt and helmet requirements in a decentralized industry like construction will significantly increase the exposure of employers to needless litigation. Each time an employee leaves a site, a potential fine arises which is beyond the employer's practical control. 55 Fed. Reg. at 28,741. Even if an employee has a legitimate explanation for not wearing a safety belt (a broken locking mechanism, for example), the employer will have to expend the time and money to have his story heard. Unfortunately, such effort will do little to get the next employee to wear a safety belt or helmet. As stated above, these actions are more a matter of personal choice than employer command.

The training program requirements are especially conducive to litigation. Could an employer be held liable for an accident involving an employee who, without really understanding the information, passes the minimal standards anyway? Must the employer provide different levels of training for employees with different levels of education? Is the employer responsible for the quality of training an employee received from a different employer? These are the questions that will surely arise under a training requirement. The issues they address have little to do with fostering employee safety and much to do with the inherent problems of industry wide safety training requirements.

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Conclusion

We appreciate this opportunity to make this submission to you, and look forward to working with you and the Council on Competitiveness on these issues in the future.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kent W. Colton".

Kent W. Colton
Executive Vice President

cc: Council on Competitiveness
Office of Advocacy, SBA

Section IV - Physical Data

Appearance/Odor: Black powder / faint odor
Boiling Point: N.A.
Solubility in Water: Negligible
Evaporation Rate: N.A.
Vapor Density (Air = 1): N.A.
Volatile N.A. % (Wgt.) N.A. % (Vol.)

Softening Range: 85°C to 100°C
Melting Point: N.A.
Specific Gravity (H₂O = 1): 1
Vapor Pressure (mm Hg): N.A.
pH = N.A.

Section V - Fire and Explosion Data

Flash Point (Method Used): N.A.

Flammable LEL: N.A.
Limits UEL: N.A.

Extinguishing Media: Water, Foam, Dry chemical

Special Fire Fighting Procedures: Avoid inhalation of smoke.

Fire and Explosion Hazards: Toner is a combustible powder. When dispersed in air, it forms explosive mixtures.

Section VI - Reactivity Data

Stability:

Unstable	
Stable	X

Hazardous

Polymerization:

May Occur	
Will Not Occur	X

Hazardous Decomposition Products: Products of combustion are toxic. Avoid breathing smoke.

Incompatibility (Materials to Avoid): None

Section VII - Special Protection Information

Respiratory Protection: None required when used as intended in Xerox equipment.

Eye Protection: None required when used as intended in Xerox equipment.

Protective Gloves: None required when used as intended in Xerox equipment.

Other: For use other than normal customer - operating procedures (such as in bulk toner processing facilities), goggles and respirators may be required. For more information, contact Xerox.

Section VIII - Special Precautions

Handling and Storage: None

Conditions to Avoid: None

Section IX - Spill, Leak, and Disposal Procedures

For Spills or Leakage: Loose toner can be removed using a vacuum cleaner. Residue can be removed with soap and cold water. After removal of loose toner, garments may be washed or dry cleaned.

Waste Disposal Method: Do not incinerate. No special techniques beyond normal practice Insure conformity with federal, state or local regulations.

Section X - Transportation Information

DOT Proper Shipping Name: Not Regulated

Hazard Classification: N.A.

ID Number: N.A.

XEROX

Dear Customer:

Xerox Corporation is pleased to enclose a Material Safety Data Sheet (MSDS) for each chemical product in this shipment. We will be sending MSDS's with each new machine or with the first shipment of supplies.

These MSDS's, as all previously furnished MSDS's, are the result of the work of Xerox environmental health and safety specialists. Xerox supplies and products are extensively tested and evaluated to insure they do not represent any known health or safety hazard under normal use.

These sheets will assist you in fulfilling your employee obligations as required by the OSHA Hazard Communication Regulation (29 CFR 1900.1200), effective May 25, 1986. Xerox has chosen to supply MSDS's for all its marketed chemical products, whether required by governmental regulations or not, to assure total support of your employee training programs. Please forward these MSDS's to the individual in your company responsible for health and safety practices so that your employees will be fully informed.

Xerox is proud of its continuing commitment to support our customers with safe, environmentally sound products. If you need additional copies of the MSDS's or more information, please contact the Xerox Safety Department at (800) 828-6571.

Sincerely,



Paul V. Cahn
Manager, Supplies Business Area

600P9115

Construction Industry ATTACHMENT A2 Hazard Communication Coalition

October 28, 1988

Docket Officer
Docket H-022D
Occupational Safety and Health Administration
200 Constitution Avenue, N.W., Room N3670
Washington, D.C. 20210

Dear Sir:

Re: Comments and Request for Hearing by the Construction
Industry Hazard Communication Coalition Proposed
Revisions to OSHA Hazard Communication Standard
(53 Fed. Reg. 29,821)

I. INTRODUCTION

On August 8, 1988, OSHA published in the Federal Register a Notice of Proposed Rulemaking proposing certain modifications to the OSHA Hazard Communication Standard (HCS).^{1/} The purpose of this letter is to express the concerns of the Coalition of Construction Industry Trade Associations^{2/} about OSHA's proposal, to suggest regulatory alternatives, and to submit data supporting our suggested alternatives. The Coalition also hereby requests the

^{1/} The HCS is codified at various places in Title 29 of the Code of Federal Regulations, including Parts 1910.1200, 1915.99, 1917.28, 1918.90, and 1926.59.

^{2/} The Construction Industry Hazard Communication Coalition consists of 33 trade associations (listed at the end of this letter) representing more than 200,000 employers involved in all aspects of residential, commercial, and highway construction and related activities. The Coalition was formed in late 1987 to represent the interests of the construction industry in matters relating to hazard communication.

Steering Committee

American Subcontractors
Association, Inc.
1004 Duke Street
Alexandria, VA 22314
(703) 684-3450

Associated Builders and
Contractors, Inc.
729 15th Street, N.W.
Washington, DC 20005
(202) 637-8800

Associated Specialty
Contractors, Inc.
7345 Wisconsin Avenue
Bethesda, MD 20814
(301) 657-3410

National Association of
Home Builders, Inc.
15th and M Streets, N.W.
Washington, DC 20005
(202) 822-0200

opportunity to present a panel of witnesses at OSHA's informal hearing on the HCS, presently scheduled to begin on December 6, 1988. As we have stated to OSHA in previous submissions, our goal in this effort is not to avoid hazard communication in the construction industry. We are merely attempting to insure that the provisions of any hazard communication rule are reasonably necessary and appropriate to reduce significant risks and can be implemented feasibly on construction industry job-sites.

A. Procedural History of the Revised HCS

1. Prior Proceedings

OSHA promulgated a hazard communication standard for manufacturing employers alone on November 25, 1983. In promulgating the HCS for the manufacturing sector, OSHA declared that the Standard would not apply to non-manufacturers based on the record evidence that the rate of chemical injuries and illnesses in non-manufacturing industries was substantially lower than in manufacturing. While OSHA asserted that certain non-manufacturing employees were "exposed" to hazardous chemicals and that such employees would benefit from hazard communication, the agency cited no evidence that construction industry employees were subject to "significant" risks of injury due to any lack of information about hazard chemicals, not already alleviated by the industry's existing hazard communication requirements.

The United Steelworkers of America and other parties filed petitions for review of the manufacturing HCS with the Court of Appeals for the Third Circuit. The court held in May, 1985, inter alia, that the Secretary had failed adequately to explain why it was not feasible for the same standard to be applied in non-manufacturing sectors. United Steelworkers of America v. Auchter (USWA I), 763 F.d 728, 738 (3d Cir. 1985). The Court directed the Secretary to reconsider the application of the standard to other employers and to extend coverage of the standard to non-manufacturers unless the Secretary could state why such coverage was not feasible.

In response to the Court's order, the Secretary published an Advance Notice of Proposed Rulemaking on November 27, 1985 on the likely impact and feasibility of extending the HCS to non-manufacturing industries. This ANPR did not contain any proposed rule for non-manufacturers, nor did it indicate in any precise way how OSHA proposed to extend or modify the existing, manufacturing HCS so as to apply it to such divergent industries as construction.

The bulk of the ANPR comments received with regard to construction stated that incidents involving workplace injuries or illnesses due to hazardous materials were rare, that existing training and safety measures were sufficient to alleviate any alleged risk of injury from hazardous materials, and that extension of the HCS in its present form to construction would be tremendously burdensome and expensive. Numerous commenters also pointed out the significant differences between construction worksites and other industries' facilities, including problems relating to transient workforces, multiple and ever-changing employers and worksites. The commenters, including some unions, further recommended that any HCS for the construction industry be issued in the form of a "vertical" standard, i.e., one which was specifically tailored to the unique work practices of the construction industry.

Prior to OSHA's taking any action on the ANPR, however, the USWA filed a motion for further relief with the Third Circuit. In response to that motion, the court on May 29, 1987 held that its prior order did not contemplate further rulemaking. The Court ordered the Secretary to publish within sixty days a hazard communication standard applicable to all workers covered by the Act, based on the existing administrative record, or to state why such a standard was not feasible. United Steelworkers of America v. Pendergrass (USWA II), 819 F.2d 1263, 1270 (3d Cir. 1987).

Again in USWA II, the Court did not expressly consider whether and how the HCS should be tailored to any specific non-manufacturing industry, including construction. Nor was the Court asked to consider whether all aspects of the HCS were "necessary and appropriate" to reduce identified risks of injury in the construction industry. The Court also was not presented with, nor did it consider, how OSHA should comply with the review and consultation provisions of such statutes as the Paperwork Reduction Act, the Construction Safety Act, and the Regulatory Flexibility Act, in extending the HCS to the construction industry.

In any event, OSHA complied with the Court's order by publishing its revised HCS for all non-manufacturing industries on August 24, 1987. OSHA did not publish any separate proposed standard applicable to construction or obtain comments thereon. OSHA also failed to make findings that construction employees were subject to any significant risk of harm due to their alleged exposure and alleged lack of information about hazardous materials, in view of the construction industry's unique work settings and already existing hazard communication requirements.

2. New Provisions Added to the Revised HCS

The Final Rule issued by OSHA on August 24, 1987 was not a mere expansion of the application of the previously existing Hazard Communication Standard which applied to those industries in SIC codes 20-39. In fact, as OSHA stated in the preamble to the Standard, "[t]his final rule is both an expansion and revision of the current HCS." The new Standard contained numerous changes from the pre-existing HCS. These changes were never issued in the form of a proposed rule. Many of the modifications are significant, particularly for the construction industry.

One substantive modification of the previous standard was the addition of § (e)(1), requiring employers to maintain a written hazard communication program for their workplace "at the workplace." Thus, under the new standard, the written program must be maintained at each job-site, a significant difference to an industry in which large numbers of job-sites are routine. The revised standard also included a new provision of § (g)(9) which permits MSDSs to be maintained at a central location at the "primary workplace facility" only if employees "must travel between workplaces during a workshift."

Another substantive change was the addition of § (e)(2). This section requires that employers who produce, use, or store hazardous chemicals at multi-employer worksites must include in their hazard communication programs the methods they will use: 1) to provide or make available MSDSs to the other employers' employees; 2) to inform the other employers of the measures needed to protect employees during "normal operating conditions and foreseeable emergencies"; and 3) to inform other employers of the labeling system in use.

Another addition to the revised standard was § (b)(6)(vii), which exempts "[a]ny consumer product or hazardous substance" only if the employer "can demonstrate it is used in the workplace in the same manner as normal consumer use" and results in exposure not greater in frequency and duration than in consumer use.

Other new provisions were added in the revised standard. Included are § (g)(7), requiring retailers to make MSDSs available to commercial customers only upon request; § (b)(6)(viii), providing an exemption for any drug in a solid final form for direct administration to a patient; and § (f)(2), discussing labeling of steel beams and other solid metal, among others.

3. Paperwork Review of the Revised HCS

The Paperwork Reduction Act, 44 U.S.C. §3504(h), requires that all agencies submit to the Office of Management and Budget (OMB) any proposed information collection requirements prior to finalizing new paperwork burdens on the private sector. OSHA did not submit the revised HCS to OMB for its review prior to publication of the Standard, however. Rather, OSHA only submitted the final revised HCS for OMB review on September 10, 1987. See 52 Fed. Reg. 46075.

On October 23, 1987, OMB disapproved significant aspects of the revised HCS, pursuant to OMB's authority under the Paperwork Reduction Act, and suggested reasonable alternatives. See 52 Fed. Reg. 46075. Specifically, OMB disapproved: (1) the new requirement in Section (e)(2)(i) that each employer provide its MSDSs on multi-employer worksites to all other employers on such sites or make them available at the workplace; (2) OSHA's new restriction on the exemption for consumer products in Section (b)(6)(vii), which would require employers to demonstrate use in the same manner and quantities as consumer use. *Id.*; and (3) the restriction of the exemption for FDA-regulated drugs to only those drugs in solid, final form (Section (b)(6)(vii)). OMB also objected to the limited scope of OSHA's "article" exemption (Section (c)), as applied to the non-manufacturing sector, suggesting the need for a "de minimis" cut-off. Finally, OMB disapproved the imposition of the HCS without OSHA's first providing guidelines and other technical assistance to employers to help reduce the cost of compliance.

OMB further conditioned its approval of the remaining information collection requirements of the revised HCS on an agreement by OSHA to conduct a reconsideration of the standard. This was to be done via a rulemaking proceeding to have been initiated by December 1, 1987, and completed by March 1, 1988. OMB also required OSHA to submit, by January 1, 1988, a plan for providing assistance to employers in the form of generic training programs and guidelines.

Contrary to the OMB order, OSHA failed to publish any notice of proposed rulemaking reconsidering the paperwork provisions of the HCS on or before December 1, 1987. OSHA also failed to submit any generic program or guidelines for employers, or plan for the production of such aids to employers, by January 1, 1988. Nevertheless, on April 13, 1988 OMB issued a new order, reaffirming its initial disapproval of portions of the HCS, but allowing the remainder to go into effect based on OSHA's promise to initiate further rulemaking.

53 Fed. Reg. 15033. The present Notice of Proposed Rulemaking was published on August 8, 1988.

On August 19, 1988, a panel of the Third Circuit again granted a motion for further relief in USWA III. The Court held that OMB lacked authority to disapprove the changes to the HCS. A petition for rehearing has been filed, which has not been ruled on by the Court.

4. Recommendations of the Construction Advisory Committee

The Construction Safety Act, 40 U.S.C. §333, and OSHA's own regulations, 29 C.F.R. § 1911.10, require the Secretary to seek the advice of the Advisory Committee on Construction Safety and Health prior to implementing a new safety standard for the construction industry. OSHA did not submit the revised HCS which it ultimately published to the Advisory Committee prior to such publication, however. Rather, in March, 1987, OSHA provided the Advisory Committee with an unpublished draft proposal for a new HCS, which was not ultimately implemented. This draft was discussed at the Committee's June 23, 1987 meeting, and the Committee reacted by recommending that an entirely separate standard for the construction industry be adopted. The Committee reiterated this recommendation on March 14, 1988.

Notwithstanding the Advisory Committee's recommendations, OSHA proceeded to publish the August 8 NPRM without in any way taking into account the unique work practices of the construction industry. The agency "continues to believe that the record substantially justifies the Agency's regulatory choices," and that all of the data submitted to OSHA over the past year "has, by and large, not convinced OSHA that significant changes are warranted" 53 Fed. Reg. 29,825. OSHA claims that the "expectations" of both the manufacturing and non-manufacturing sectors are "settled," and therefore states that it "does not expect the standard to further change significantly unless the Agency is presented with substantial evidence that a regulatory modification is clearly necessary, either because the present standard is demonstrably infeasible in a specific respect, or because the proposed alternative would significantly increase the standard's intended safety and health benefit or significantly improve its cost-effectiveness." Id. at 29,826.

With this background in mind, the Coalition's comments and data in support thereof follow.

II. THE UNIQUE WORKING CONDITIONS OF THE CONSTRUCTION INDUSTRY

Numerous comments in the record have pointed out that the construction industry's work practices and economic circumstances are unique. While some other industries may have one or another of the special factors pertinent to construction, no other industry combines all of these special circumstances. Thus, construction industry employers, unlike most other industries, typically employ workers at multiple job-sites which are constantly changing in scope and location, as are the workers themselves. The employees work side by side with employees of other independent contractors, over whom the employers have little if any control. Construction employees frequently move about within each job-site and also move among job-sites. The employer generally maintains minimal administrative support facilities at each remote location and often has no such facilities on smaller jobs.

At the same time, as OSHA has previously recognized, the nature of construction workers' exposures to hazardous materials differs radically from those in other industries and requires different regulatory treatment. See USWA v. Marshall, 647 F.2d 1189, 1310 (D.C. Cir. 1980) (lead standard). As the Court held in that case, upholding findings by OSHA, "construction work exposes employees to [a hazardous chemical] only for very brief periods, normally requires employees to move constantly from place to place, creating widely varying [chemical] exposure. . . and has an unusually high number of temporary employees." Id. at 1310. The Court also recognized differences in work practices, employee turn-over rates and the prevalence of outdoor workplaces as differentiating construction from other industries. Id.^{3/}

Finally, the construction industry, unlike other employers, already has been required to communicate hazard information to employees under previously existing OSHA regulations. 29 C.F.R. §1926.21(b). There has been no record evidence or explanation as to why this pre-existing requirement has been insufficient to address any alleged risk of harm or how the additional burdens imposed by the revised HCS will in any way reduce such alleged risks in the construction industry.

^{3/} OSHA has also promulgated separate construction industry standards or exemptions with regard to asbestos and air contaminant exposures, among others. See 53 Fed. Reg. 20960 (June 7, 1988).

OSHA must take this unique combination of circumstances into account, as it has in the past, and must tailor any HCS to make sure its provisions are each reasonably necessary and appropriate to the construction industry and that the Standard is feasible. American Textile Mfrs. Inst. v. Donovan, 452 U.S. 490, 536-40 (1981); Industrial Union Dept. AFL-CIO v. American Petroleum Inst., 448 U.S. 607 (1980).

III. THE RISK OF INJURY FROM HAZARDOUS MATERIALS IN THE CONSTRUCTION INDUSTRY

As noted above, construction industry employers have for many years been required to take appropriate measures to reduce the risks arising from exposure to hazardous materials. Specifically, under 29 C.F.R. § 1926.21, construction industry employers are required, inter alia, to "instruct each employee on the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury." In addition, construction workers are protected by numerous other safety standards, relating to chemical exposure, including, inter alia, 29 C.F.R. § 1926.55 (limiting exposure to gases, vapors, fumes, dusts and mists), 1926.57 (imposing ventilation and exhaust requirements), 1926.103 (requiring appropriate respiratory equipment), and 1926.354(c) (requiring protection against toxic preservative coatings).

Numerous comments in the record of this proceeding establish that these measures have been successful in reducing the number of injuries resulting from hazardous chemicals in the construction industry to insignificant amounts. See, e.g., Comments of National Association of Home Builders dated February 25, 1986; see also Comments of Associated General Contractors dated February 24, 1986, pointing out the differences between the chemical exposures likely to occur in a fixed workplace environment versus the much less concentrated and less extended exposures likely to occur in construction.

Indeed, the Department of Labor's own statistics belie the contention that construction workers face "significant risks" from hazardous chemicals on the job-site. According to the 1986 edition of Occupational Injuries and Illnesses in the United States by Industry (published by the Bureau of Labor Statistics), less than one percent of all "injuries and illnesses" fall into the "illness" category, and not all of these were chemical-related. The same study reveals that nearly half of the occupational illnesses were relatively minor skin problems (Table 8, page 50 of the above referenced

report). There is also no evidence that any of these illnesses were caused by any lack of information available to the affected employees.^{4/}

Other data submitted to OSHA by the National Construction Safety Executives indicated a chemical related incident rate of only 0.21. See Docket H-022D, Ex.L-5-117. The Associated General Contractors has recently reported an incident rate of 0.24, based on a survey of its 32,000 members who reported only 114 chemical-related injuries in 93.2 million manhours. See Statement by AGC to Small Business Subcommittee, U.S. House of Representatives, September 28, 1988. Once again, even these low figures must be discounted further because there is no evidence that the reported injuries occurred as a result of any lack of information among the employees about hazardous chemicals.

In the NPRM, OSHA claims that the construction industry's position on the low risks from hazardous chemicals is somehow undercut by other construction industry estimates of the relatively large numbers of hazardous chemicals on particular sites. 53 Fed. Reg. 29,827. OSHA appears to be confusing the distinction between the types of exposures possible in the construction workplace and the existing measures which prevent minimal exposures from causing significant harm to employees. Under the current rule, with its extremely broad definition of "hazardous chemical," virtually any substance which exists on a construction site is covered, and minor hazards such as toilet bowl cleaners are regulated in the same way as major hazards such as compressed gases and concentrated acids.

^{4/} A 1977 BLS report cited in the 1983 HCS rulemaking reported that the chemical source incident rate was only .17% (1.7 out of 1000), not a significant risk. Even that ratio is suspect because of the age of the report and its speculative nature. Certain studies cited by the AFL-CIO which purport to show an increased incidence of illnesses among construction workers are even more dated and speculative, relying on statistics accumulated prior to passage of the Occupational Safety and Health Act. Again, none of the chemical injury data presently before OSHA shows how many injuries or illnesses were caused by any lack of information on the part of the employee.

The mere existence of a potentially hazardous chemical on a worksite does not establish a significant risk to employees. Rather, the types of exposure, concentration of the hazard, and alternative safeguards must also be considered. Thus, the fact that large numbers of chemicals are present in the construction industry which would be covered by the HCS does not in any way establish that there are concomitant significant risks to workers presented by these chemicals.

IV. INFEASIBILITY OF THE REVISED HCS

In addition to pointing out the absence of demonstrable need for the provisions of the HCS in order to reduce significant risks, construction industry representatives have repeatedly expressed concern to OSHA about the infeasibility of the revised HCS in the construction industry. As is further addressed below with regard to specific provisions, the Standard is both technologically and economically infeasible. Numerous comments have shown that the industry's unique work practices cannot be conformed to the requirements of the HCS and that the costs of compliance cannot be sustained without threatening the viability of significant portions of the industry.

In response to the industry's challenges, OSHA has relied almost exclusively on an economic study performed in June 1987 by JACA Corporation. The JACA analysis is replete with errors and greatly underestimates the real cost of compliance. With respect to first-year costs alone, JACA makes the following errors:

1. JACA uses the number of chemical hazards instead of the number of products containing mixtures of hazardous chemicals to develop costs of a) the written program, b) employee information and training, and c) maintenance of MSDSs. This greatly underestimates costs, since contractors and subcontractors must protect their workers from an average of more than 300 products containing assorted hazardous chemicals instead of the 9 to 12 chemical hazards JACA uses in its cost estimates.
2. JACA does not consider the interaction between contractors and subcontractors. According to JACA, the average contractor (SIC 15) must obtain, file and list only 9 MSDSs and the average subcontractor (SIC 17), 12. Even if these figures were correct, which they are not,

the JACA study does not take into account that the contractor must obtain the average 12 MSDSs from 20 or more subcontractors, a total of 240, plus his own 9. This indicates a lack of awareness of the multi-employer worksite.

3. Similarly, JACA does not take into account that the average subcontractor can serve ten to thirty contractors each year, and must supply each one with a pack of anywhere from 12 to 50 MSDSs, in different combinations for each job.
4. JACA does not consider the number of times a contractor or subcontractor may change brands of products during a year. Products go on sale from time to time, and prudent contractors and subcontractors shop for the best value at a particular time. This can double or triple the number of products containing hazardous chemicals which he uses, with resultant increases in written program costs (reading and evaluating MSDSs), training (new products an employee must be informed of), and MSDS maintenance (filing and reading MSDSs by employees).
5. JACA includes no cost for employees to read MSDSs. If the Hazard Communication Standard has any purpose, each employee and subcontractor employee will actually read MSDSs, perhaps two per year. This is a very significant cost given an average of 10 employees plus perhaps 60 subcontractor employees, each requiring one manhour to go to the job trailer during working hours (when a clerk is present to open the file drawer, go through 300+ MSDSs to find the right one, and perhaps photocopy it for the employee), read 2 to 17 pages of scientific information, and return to work. Since the employee is reading MSDSs on company time, the cost must be included.
6. No employee overhead (meaning charges for insurance, workers comp coverage, paid vacation benefits, etc.) is included in JACA's hourly rates. Employee overhead usually ranges from 25 to 30 percent of wages in the construction industry.

7. JACA assumes that the complexity of writing a hazard communication program is not directly related to the number of chemical hazards (represented by the number of MSDSs). "Specifically, it has been assumed that establishments having 10 times as many chemical hazards (sic) as the average firm will incur twice the written program costs of the average firm, all other factors being equal." JACA uses an exponent to bring the cost of programs with high or low numbers of hazards closer to the cost of writing an average program. This is not valid. Preparation of a hazard communication program involves obtaining and evaluating MSDSs, and these factors are directly related to the number of MSDSs. This mistake incorrectly reduces this cost to one-fifth of what it should be. If the average program costs \$1000 to write, the cost to an employer with ten times the average number of MSDSs will be nearly \$10,000, not the \$2000 that JACA's exponent leads them to estimate.
8. JACA arbitrarily deducts from the estimated costs of compliance certain costs allegedly associated with complying with existing state right-to-know laws. This deduction ignores the fact that only 12 states currently apply their hazard communication laws to construction industry employers. Of those 12, none approaches OSHA's HCS in scope with regard to construction, so that no employers have had to incur the costs of compliance with such a rigorous and impractical rule.

Other major defects make JACA's long-term estimates far worse than their first-year estimates:

1. JACA's "Growthchem" estimate for growth in the number of hazardous chemicals and resultant MSDSs does not consider product turnover as contractors and subcontractors change brands. This factor is magnified as years pass.
2. JACA considers growth in establishments and employee turnover within the contracting or subcontracting firm but does not consider subcontractor turnover. When one subcontractor is busy, the contractor will select another one.

Over the years, as subcontractors come and go, change their business, or discontinue business, contractors will change subs. The employees of the new subcontractors will have to be trained in the hazardous chemical products being used by the employer and all the other subcontractors with whom they will be working.

3. JACA fails to adequately factor in the effects of employee turnover on training costs and ignores OSHA's requirement that employers receive new training every time a new hazard enters their work area.

Correction of JACA's defective analysis results in substantially higher cost estimates. The tables that follow provide more realistic, albeit still understated, estimates of the expected compliance costs to small general contractors. We have used as our example a general contractor in SIC Code 15 employing 10 employees, a representative number. See 1983 County Business Patterns, Dept. of Commerce Census Bureau. This size firm would typically utilize about 20 subcontractors.

We are providing herewith a list of MSDSs obtained from an actual home building firm, as support for our estimate that the minimum number of MSDSs which the typical contractor must deal with is around 300, not 9 as estimated by JACA. See Attachment 1. Since product manufacturers are tending to produce MSDSs on every product, because of their own difficulty in identifying which products are truly hazardous, the actual number of MSDSs sent to each construction employer will probably be higher than 300. A large retail hardware chain has submitted nearly 2,500 MSDSs to NAHB as evidence of the potentially covered substances in the construction industry.

Many other assumptions made in the following analysis may greatly underestimate the actual costs. The analysis assumes that training on hazardous chemicals, effects, precautions, and first aid can be primarily generic, utilizing "canned" videotape programs, and that only a few specific products will be covered in training. If OSHA requires employers to provide such training on all specific products, training costs may be ten times as great as those estimated below. The attached analysis also ignores, as does JACA, the HCS requirement that training must be repeated every time a new hazard enters an employee's work area. The true costs of such training would be exponentially greater but are also technologically infeasible.

Our analysis also makes the assumption that the employer is capable of identifying what few products are really hazardous and should be given special emphasis. This is probably an unrealistic assumption since the employer is not a chemist and does not have the funds to hire a chemist and industrial hygienist to 1) identify which chemicals are really hazardous, and 2) perform the jobsite research on these to determine actual exposure levels. Performing these tasks would be prohibitively expensive, especially for small businesses.

The estimates also make the assumption that subcontractor employees will be trained only once a year. In fact, if a builder changes subcontractors or if the employer or any of his subcontractors change the products they use, OSHA may require that employees and subcontractor employees be trained several times a year, perhaps tripling the training cost estimates given below.

A further note regarding the tables: "MH" means manhours. Manhours are multiplied by the employee's or subcontractor employee's wage rate including 25 per cent labor overhead.

Hazard Communication Program First-Year Costs

SIC 15 - General Contractor
10 employees, 20 subs

	Professional			Clerical			Foreman - two			Labor(Six)			Misc Cost		Total Cost
	MH	Rate	Total	MH	Rate	Total	MH	Rate	Total	MH	Rate	Total	Item	Total	
A. Written Hazcom Programs								\$22			\$13				
1. Call trade assns.; local. ntl.	2	\$32	\$ 64										Phone	\$ 3	\$ 67
2. Order Hazcom manual	0.25	\$32	\$ 8	0.5	\$10	\$ 5									\$ 13
3. Read, study manual	8	\$32	\$ 256												\$ 256
4. Meeting with staff	1	\$32	\$ 32	1	\$10	\$ 10	2	\$22	\$ 44						\$ 86
5. Obtain MSDSs: letter to subs	2	\$32	\$ 64	8	\$10	\$ 80							Copies, ca.	\$ 10	\$ 154
6. Obtain MSDSs: follow-up calls	10	\$32	\$ 320	20	\$10	\$ 200							Sub labor	\$ 660	\$ 1180
7. Obtain MSDSs: from suppliers	4	\$32	\$ 128	8	\$10	\$ 80	8	\$22	\$176				Letters, etc.	\$ 10	\$ 394
8. Read & evaluate 300 MSDSs	32	\$32	\$1024										Sub labor	\$ 102	\$ 1126
9. Prepare MSDS list	16	\$32	\$ 512	16	\$10	\$ 160							Sub lists	\$ 120	\$ 792
10. Prepare and revise plan	16	\$32	\$ 512	8	\$10	\$ 80	3	\$22	\$ 66				Sub plans	\$ 100	\$ 758
11. Review plan with staff	3	\$32	\$ 96	3	\$10	\$ 30							Sub review	\$ 64	\$ 190
12. Inform subs of plan: letter	3	\$32	\$ 96	1	\$10	\$ 10							Copies, stam	\$ 10	\$ 116
13. Inform subs: 20 15-min calls	5	\$32	\$ 160										Sub dist.	\$ 64	\$ 224
14. Program maintenance (new MSDSs)	30	\$32	\$ 960	60	\$10	\$ 600							Sub maint.	\$ 370	\$ 1930
Written Program Totals	132.25	\$32	\$4232	125.5	\$10	\$1255	13	\$22	\$286			\$ 0		\$1513	\$ 7286
B. Employee Information & Training															
1. Order Hazcom training video	0.25	\$32	\$ 8	0.5	\$10	\$ 5							Video	\$ 350	\$ 363
2. Develop training program	2	\$32	\$ 64	1	\$10	\$ 10							Sub programs	\$ 148	\$ 222
3. Meeting of staff	4	\$32	\$ 128	4	\$10	\$ 40	8	\$22	\$176				Sub mtgs	\$ 352	\$ 696
4. Train employees	0.25	\$32	\$ 8	0.25	\$10	\$ 2.5	.5	\$22	\$ 11	\$ 6	\$13	\$ 78			\$ 99.5
5. Schedule subs, employees	1	\$32	\$ 32	32	\$10	\$ 320							Sub sched	\$ 780	\$ 1132
6. Traing subs employees (60)	20	\$32	\$ 640										60mh x \$13	\$ 780	\$ 1420
7. Retraining/new hire training	20	\$32	\$ 640							\$ 4	\$13	\$ 52	Sub retraining	\$ 780	\$ 1472
Employee Training Totals	47.5	\$32	\$1520	37.7	\$10	\$ 377	8.5	\$22	\$187	\$10	\$13	\$130		\$3190	\$ 5404.5
C. Maintenance of MSDSs															
1. Cost to maintain 300 MSDSs at \$1.25 each														\$ 375	\$ 375
Read 2 MSDSs/year (1 mh each)															
2. Employees	2	\$32	\$ 64	2	\$10	\$ 20	4	\$22	\$ 88	\$12	\$13	\$156			\$ 328
3. Sup. employees (60x13x2mh)													Sub Labor	\$1560	\$ 1560
4. Clerical assistance (10 min)x(10 people)x(2sheets)				23	\$10	\$ 230							Copy 70 pp	\$ 14	244
MSDS Maintenance Totals	2		\$ 64	25		\$ 250	4		\$ 88	\$12		\$156		\$1949	\$ 2507
TOTAL COSTS - GENERAL CONTRACTOR FIRST YEAR	181.75	\$32	\$5816	188.25	\$10	\$1882.5	25.5	\$22	\$561	\$22	\$13	\$286		\$6652	\$15197.5

COMPARISONS OF INDUSTRY AND JACA ESTIMATES (FIRST YEAR)

PROVISION	INDUSTRY ESTIMATES	JACA PER ESTABL'T
Written Program	\$ 7286	\$ 46
Info. & Training	\$ 5404	\$ 74
MSDS Maintenance	\$ 2507	\$ 26
	\$15197	vs. \$146

The estimated cost of first-year compliance by this conservative analysis is 100 times the OSHA estimate. Still higher figures have been submitted to OSHA in previous comments filed by individual industry members. It is likely that such higher estimates will prove to be more realistic, for the reasons stated above. In addition, the assumptions made in our analysis do not resolve questions of technical infeasibility caused by the construction industry's unique work practices. Finally, additional substantial costs not considered by JACA, will accrue in every subsequent year of compliance with the HCS, as jobs, employees and hazards continually change.

These estimated costs of compliance, when viewed in the context of the small size of the majority of construction industry employers, clearly threaten the viability of a substantial segment of the industry. The most recent census figures indicate that 89% of construction industry employers had annual business receipts of less than \$1 million dollars.^{5/} The average rate of return in the industry, according to data compiled by NAHB, is 5%, or, for the majority of employers, less than \$50,000. Thus, the cost of compliance with the HCS threatens to wipe out the profit of the small businesses who presently comprise the bulk of the industry.

Nor has OSHA yet explained how the HCS can be feasibly implemented from a technological standpoint in the construction industry. In this regard, we have previously pointed out that the revised HCS imposes obligations on builders which are utterly inconsistent with existing work practices. Nor can work practices be developed which will enable the industry to comply with the Standard as currently drafted.

The most pressing technological problems include the inability of contractors to predict and properly inventory at

^{5/} 1982 Census of Construction Industries, U.S. Dept. of Commerce, Bureau of the Census.

the start of a multi-employer job all of the hazards covered by the HCS with which its employees may come in contact. The contractors are required to maintain hazard-specific programs at each site, yet the identity of other subcontractors, let alone their accompanying hazards, may not even be known at any given time.

Similarly, OSHA has still failed to explain how buildings can be built if new training must be provided to each employee every time the employee confronts a new hazard in his or her work area. No such retraining has previously been required in construction, and such a system is completely unworkable. Employees move about all over a construction job site and the nature of the work and existing hazards constantly changes.

OSHA has thus far ignored this compelling evidence of both economic and technological infeasibility. The result is a rule which threatens the viability of small construction companies, who presently comprise a majority of the industry.

V. COMMENTS ON SPECIFIC PROVISIONS OF THE REVISED HCS AND SUGGESTION OF REGULATORY ALTERNATIVES

A. Problems Created by the Requirements that Written Programs and MSDSs Be Maintained "At the Workplace"

As previously noted, the revised HCS for the first time requires that the written hazard communication program be maintained at the workplace, rather than at a centralized location. This new requirement is particularly onerous for the construction industry, particularly when combined with the requirement that contractors maintain decentralized MSDSs and inventory each job site's hazards for inclusion in the program. The result is that construction contractors must prepare multiple programs tailored to each of their many different jobs and must identify, copy and transport hundreds of MSDSs to remote locations.

Aside from the question of whether it will be technologically possible for contractors to correctly identify all the potential hazards at their individual jobsites, the new requirement is simply unnecessary to increase worker safety. As is discussed in detail below, at pp. 23-28, product labels can provide all information immediately needed by employees to protect themselves at the job site. In many instances the labels provide better information than the MSDSs because they use plain English and avoid information overload. Whatever additional information is needed from MSDSs can be obtained

when necessary from a central office location. No need exists to have these complicated and bulky documents at small and remote job sites, where many contractors currently provide no administrative support.

Moreover, the size of the worksite itself may pose special problems, especially in heavy utility and transportation construction projects. On large worksites such as highway projects, maintaining employee access to a jobsite HCS file is difficult due to long distances. In cramped downtown areas, tight working conditions for excavation of underground water and sewer projects place available space at a premium.

We therefore urge OSHA to modify Sections (e)(1), (g)(8) and (g)(9) to delete the requirement that written programs be maintained "at the workplace" and to clarify that MSDSs may be kept at centralized office locations.

B. Problems Associated with the Multi-employer Worksite Provisions

As we have repeatedly pointed out to OSHA, among the most onerous and least necessary provisions of the revised HCS are the multi-employer worksite provisions in subsection (e)(2). The August 1987 revision to the HCS requires that all written hazard communication programs include the method employers will use to: (a) provide other on-site employers with MSDSs, or to deposit MSDSs at a central location on the site; (b) inform them of any precautionary measures that need to be taken to protect their employees; and (c) inform them of the labeling systems in use in the workplace. The language of this provision is somewhat vague, but it could easily be read as requiring that work come to a complete halt each time a new contractor arrives on the job, and that a "hazard information meeting" be held before work could resume.^{6/} The OSHA NPRM focuses in isolation on the issue of whether central deposits

^{6/} One of the principal problems with the rule is that it provides little guidance as to exactly what constitutes compliance with subsection (e)(2). In the rule's preamble, OSHA states that, "the provisions do not specify how this coordination is to be accomplished," and that "[t]his is best left to the discretion of the parties involved." OSHA does, however, speculate that, "In many cases, it would probably be most efficient for the general contractor to coordinate the function." We reiterate a question we have often posed to OSHA: If OSHA's own highly-trained health standards staff cannot articulate how hazard information is to be exchanged on multi-employer sites, how can a builder or small contractor be expected to come up with a system which will satisfy an often fickle OSHA inspection force?

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of MSDSs are permitted, without addressing in any way the industry's concerns over the additional information exchanges which the HCS appears to require.

OSHA's approach, disapproved by OMB, fails to recognize certain basic realities of the construction industry. These include the sheer number of contractors on many sites; the number of covered substances in use on the site, albeit frequently in minor quantities; the fact that contractors come and go at random times during the construction process; and the fact that often times, the general contractor is not even present when work is in progress.

As noted above, a large building site may have dozens of contractors, and hundreds of employees, coming and going during the course of a workday. An informal telephone survey recently conducted by the Association of the Wall and Ceiling Industries, International, revealed the following examples:

<u>Project/Location</u>	<u>Height/Area</u>	<u>No. Subs</u>	<u>Peak Employees</u>
190 S. LaSalle Chicago	41 floors 985,000 sf	60	300
Hyatt Grand Regency Washington, D.C.	17 floors 873,800 sf	32	500
FMC Corp. Minneapolis	6 floors	30	120

In contrast to OSHA's multi-employer worksite provision, we believe there are far simpler ways of making hazard information available to employees, even where these hazards come from a variety of sources. The most obvious method would be to simply examine the interrelationship between the various elements of hazard communication under the OSHA rule: MSDSs, container labels, and employee training. A properly prepared MSDS contains more information on a particular chemical than any employee would ever want to know, or could ever understand. The MSDSs are supplied by the supplier of the building product in question, and all the employer should have to do is make his employees aware that these documents are available. This can be done during the employee's initial training (which should only have to be carried out once, by the employee's employer), and through product labels, which will also be provided by the contractor's suppliers.

As is discussed in detail below, at pp. 23-28, labels are more useful for most employees, as they tend to be more understandable than MSDSs. With this system already in place, it is only necessary to require that the actual MSDS be made available, at the request of an employee, either on or off the site, by the contractor who brings the substance onto the site. Put another way, the emphasis of the HCS on multi-employer worksites should be shifted from primary reliance on MSDS availability, as OMB has held, to a meaningful labeling program and generic hazard training program, while maintaining a reasonable availability of MSDSs for more complete employee information.

It should not be necessary to require "hazard communication breaks" during the workday, and the HCS should be modified so as to avoid such disruption. Nor is it necessary to create "MSDS drops" on job-sites. Our suggested approach is workable, and would be entirely consistent with the OMB's October 28, 1987 directive, which specifically rejected the requirement that MSDSs be brought on-site at multi-employer jobs.

In light of these considerations, we propose the following modification to subsection (e)(2) of the HCS:

Multi-employer workplaces. Employers who produce, use, or store hazardous chemicals at a workplace in such a way that the employees of another employer may be exposed (for example, employees of a contractor working on-site) shall ensure that copies of material safety data sheets are available to all exposed employees at the Employer's offices.

OSHA should make clear in the preamble that this "availability" requirement can be satisfied by simply requiring contractors and subcontractors to have their MSDSs available at local offices where they can be obtained on short notice. Further information exchanges and "coordination" among multiple, transient contractors and employees should not be required. The important point is that ours is a "regulatory alternative" which even small contractors can comply with, and yet does not reduce the amount of worker protection afforded by the HCS as a whole.

C. Consumer Products

1. Background

In Subsection (b)(6)(vii) of the HCS, OSHA creates an exemption for products covered by the Consumer Product Safety Act and/or the Federal Hazardous Substances Act. This

exemption only applies "where the employer can demonstrate it is used in the workplace in the same manner as normal consumer use, and which use results in a duration and frequency of exposure which is not greater than exposures experienced by consumers." However, the utility of the exemption is questionable since it is difficult, if not impossible, for a builder or other small business to determine with any precision how the "duration and frequency of exposure" in his workplace compares with that experienced by consumers. To make these determinations with any degree of confidence would require extensive and complex research.

An alternative approach, which makes the entire concept more meaningful, would be to change the wording of this exemption and adopt the approach taken by section 311(e)(3) of the Superfund Amendments and Reauthorization Act of 1986 (commonly known as "SARA"). SARA exempts "any substance to the extent that it is used for personal, family, or household purposes, or is present [in the workplace] in the same form and concentration as a product packaged for distribution and use by the general public." The SARA exemption reflects a Congressional understanding that common consumer products, and their attendant hazards, are generally common knowledge and should not be the source of additional regulatory burdens. The SARA exemption is carefully circumscribed, however, in that the "form" (*i.e.*, packaging), and "concentration" of the product as used in the workplace must be the same as when used in the household. Supplies which come in "industrial strengths" or "industrial sized packages" would not fall within the exemption.

OMB's October 1987 decision specifically rejected all information collection requirements for any consumer products which are exempt from coverage under SARA. The NPRM invites comment on OMB's position, as well as several other issues in this area, but it proposes no changes in the existing "consumer products" exemption. In support of its position, OSHA states that "the mode of distribution of a product (*i.e.*, retail distribution rather than wholesale) is not a criterion that is related to employee exposure or the need for information and therefore is not relevant to whether consumer products should be covered by this rule." 53 Fed. Reg. at 29,838.

We agree with OSHA that the issue is not "retail versus wholesale." The issue is making relevant and understandable information available to workers without creating unnecessary regulatory burdens. In this context, there is ample evidence that existing consumer products labels provide workers as well as consumers with necessary hazard information, and that they are read by users. The cost of

adding more label information and MSDS requirements to existing CPSC labeling is unlikely to result in any additional protection in the workplace.

2. The Effectiveness of Labeling Under the CPSA and FHSA

The Consumer Product Safety Act empowers the Consumer Product Safety Commission to promulgate consumer product safety standards that are reasonably necessary to prevent or reduce an unreasonable risk of injury associated with a product, 15 U.S.C. §2056 (1982). The standards include performance criteria, requirements that a product be marked with or accompanied by clear and adequate warnings or instructions, and standards respecting the form of warnings or instructions. 16 C.F.R. §1500.121 (1988).

The Federal Hazardous Substances Act, 15 U.S.C. 1261 (1983), empowers the CPSC to promulgate safety standards for substances that by definition are determined to be hazardous substances under the Act. The CPSC has established testing procedures to determine if a substance is within the jurisdiction of the Act. Manufacturers are expected to test their own products and ensure compliance with applicable labeling and packaging requirements. See 16 C.F.R. §§1500.40-1500.46 (1988).

In promulgating criteria for consumer product labeling, the CPSC has focused on the prominence, placement, and conspicuousness of cautionary statements that the Commission requires on warning labels. The cautionary statements include: signal words; affirmative statements of the principal hazards associated with the substance; the common name or chemical name of the substance; the name and place of the business of the manufacturer, packer, distributor, or seller; statements of precautionary measures to follow; and instructions for special handling and storage when appropriate. See 16 C.F.R. §1500.121(a). Under the FHSA, the CPSC has also issued labeling requirements for specific products, including: self-pressurized containers; ethylene glycol-base antifreeze; and contact adhesives. See 16 C.F.R. §1500.130, et seq.

CPSC reports and private studies clearly indicate that consumers are aware of and read their labels. For example, a study conducted by John A. Miller of the University of Colorado for the National Bureau of Standards in 1978 cited evidence that 69 percent of respondents to a survey of Philadelphia consumers said they look for nutritional information on food packages, and 63 percent of respondents felt it was important

or extremely important to have this information available.^{7/} This demonstrated concern for product ingredients and awareness of the information available to consumers on packaging lend strong support to the contention that consumers are aware of and read consumer product labels.

The CPSC has consistently demonstrated that it can respond quickly and effectively to perceived risks to consumers through its rulemaking and labeling requirements. In 1987, for example, the Commission adopted additional labeling requirements for methylene chloride, a suspected carcinogen that is found in many products, including paint strippers, adhesive removers, and spray shoe polish.^{8/} The CPSC responded to data indicating that the chemical was carcinogenic by alerting consumers with signal words such as "warning," and the product's primary hazard such as "vapor harmful," which is placed on the front panel of products, while providing detailed instructions for safe use and proper ventilation on the back panel.

Information from other federal agencies also supports the view that consumers read labels. The Division of Consumer Studies, Bureau of Foods, at the Food and Drug Administration conducted a nationwide study on the impact of saccharin warnings on sales of diet soft drinks in 1980.^{9/} The study points to both the need for clear, easy to understand and readily available warnings and the importance that warning labels have played in affecting sales and thereby encouraging manufacturers to develop safer products. Additional measures will do little more than water down existing warnings, reducing their impact on users, while providing little added incentive for manufacturers to develop safer products.

^{7/} J.A. Miller, Labeling - The State of the Art, p. 36 (1978) (for the Marketing Science Institute, National Bureau of Standards Contract No. 7-35832.).

^{8/} Chemical Marketing Reporter, "CPSC Sets Policy on Methylene Chloride," September 21, 1987 at 9 col.3.

^{9/} Division of Consumer Studies, Bureau of Foods, Food and Drug Administration, "Impact of the Saccharin Warning on Sales of Diet Soft Drinks in Grocery Stores," Jan. 1980.

3. The Problem of Information Overload

The HCS's "three-phased" approach to hazard communication poses a clear risk of information overload. Government reports and academic research clearly acknowledge the importance of avoiding information overload in programs intending to inform individuals. In a leading study conducted by Jacob Jacoby, Donald E. Speller, and Carol Kohn Berning and funded in part by the Consumer Research Institute, Inc., researchers concluded that increases in information load can make processing more time consuming and can also cause consumers to pay less attention to relevant information. The researchers summarized earlier studies on information overload by stating, "Based upon considerable evidence, this position maintains that there are finite limits to the ability of human beings to assimilate and process information during any given unit of time and that once these limits are surpassed, behavior tends to be confused and dysfunctional."^{10/}

A report issued by the Treasury Department and Health and Human Services Department entitled "Health Hazards Associated with Alcohol and Methods to Inform the General Public of these Hazards" cited communications experts who noted that the public is generally feeling "over warned." Experts were quoted in the report as stating "that growing segments of the public ignore more and more of such [government] warnings because they feel they cannot heed the recent avalanche of warnings."^{11/} This reaction is heightened when there are no comparable or substitute products available.

^{10/} J. Jacoby, D. Speller, C. Berning "Brand Choice Behavior as a Function of Information Load: Replication and Extension," Journal of Consumer Research, Vol. 1 June 1974.

^{11/} U.S. Department of the Treasury and U.S. Department of Health and Human Services, "Health Hazards Associated with Alcohol and Methods to Inform the General Public of these Hazards," p.35 (1980). See also N. Malhotrn, "Information Load and Consumer Decisionmaking," Journal of Consumer Research, Vol. 8 (Mar. 1982).

The report also noted that warning label effectiveness is significantly affected by its presentation. Messages tending to instill a high degree of fear were found to be not as effective as more positive approaches that suggest alternative action. A high level of fear was determined to cause audiences to feel overly threatened and, as a result, to screen out the message. Moreover, the report noted that if the content of a warning message strongly contradicts the personal experience of those to whom the message is directed, the warning will likely lose its credibility.

These studies on the issue of "information overload" underscore the importance of information impact over the more manageable and politically convenient issue of information provision. The CPSC has painstakingly developed clear, succinct signal words such as "DANGER," "WARNING," "CAUTION," to be accompanied with a statement of the principal hazard, such as "HARMFUL OR FATAL IF SWALLOWED" or "FLAMMABLE." The CPSC requires that the warnings be placed prominently on the labels of products, and that the type and coloring contrast with the packaging in order to effectively capture the user's attention.

Regrettably, OSHA's current rule requiring MSDSs in addition to existing or enhanced product labels, ignores proven methods of product warning. OSHA's requirements under the HCS program take a step backward from established and proven methods of warning the users of consumer products. OSHA relies on voluminous sheets that document production, shipment, molecular weight, physical characteristics and the like, with specific warnings lost to all but the most attentive users. Moreover, these sheets are not attached to the products for ready reference, but are instead held presumably in one location, requiring a user seeking information to leave his tasks at hand and discipline himself to locate and read the information. Rather than employ clear, easy to understand signal words, warnings and instructions, the MSDS provides lengthy and confusing details of a product, much of it unrelated to a worker's use of the product and/or his safety. The fact that workers will be asked not only to review dozens of MSDSs related to common household products, but will also be provided with specific information on unique industrial chemical hazards significantly increases the likelihood that all warnings will be ignored or that the dangers surrounding the use of truly industrial products will not be adequately communicated.

In our view, OSHA is doing a disservice to workers by taking a "more information is better" approach to warning users of ordinary consumer products. The CPSC has demonstrated its ability to protect users of consumer products from potential hazards associated with their use. If a particular product poses a particular hazard through more frequent use, the CPSC has the ability and jurisdiction to warn all users, from homemakers to construction workers to do-it-yourself handymen of hazards associated with the product. Labels would effectively warn all users, not simply selected classes. At the same time workers would still have the right and opportunity to avail themselves of more specific information on truly industrial hazards not customarily used by ordinary customers.

D. Information Comparisons Between Consumer Product Labels and MSDSs

Each of the problems under the HCS discussed so far, i.e., maintaining written materials at the worksite, handling multi-employer exchanges of MSDSs, and the consumer products exemption, hinges on OSHA's overreliance on the need for instant accessibility to MSDSs, as opposed to product labels. We believe OSHA must reconsider the overall utility of its MSDS requirements and the extent to which product labels are more appropriate to satisfy the safety needs of employees in the construction industry, at least with respect to the above referenced issues.

A study recently conducted by the NAHB Technology and Codes Department lends further support to the redundancies between consumer product labels and MSDS. An assortment of 20 products commonly used on construction sites was selected and the hazard information on the labels was compared with the information available on the corresponding MSDS. The labels and MSDSs used in the study are attached hereto as Attachment 2. The results of this study can be summarized as follows:

1. **Signals:** The labels are far superior to the MSDSs in provision of signals to alert employees to hazards: DANGER, WARNING, CAUTION, POISON, CAUSTIC POISON. The CPSC regulations require that these warnings be on the front and back of containers, be placed in bold capitals in clear contrast to the background. In comparison, warnings in MSDSs are lost in the small print and extraneous information.

2. **Warnings:** The labels are far superior to the MSDSs in providing distinct warnings such as "Harmful or Fatal If Swallowed," "Vapor Harmful," "Flammable," "Highly Flammable," "Combustible," "Highly Toxic," "Skin-Eye Irritant," "Content Under Pressure." Again, these warnings are in bold print to attract the reader's attention. The MSDS warnings are not easily noticed.

3. **DOT Shipping Information:** This information appears on three MSDSs and on no labels. This information is not useful in protecting construction employees.

4. **Fire/Explosion:** All MSDSs and labels carry information on flammability/combustibility. Twelve MSDSs (and no labels) contained the flash point of the product, which is, information of doubtful usefulness to employees. Fifteen MSDSs describe the type of fire extinguisher to be used; in all cases, dry chemical or foam can be used, and in most cases, CO2. In other words, any kind will do. One MSDS prescribes, "For small fires: Use dry chemical, CO2, water or foam extinguishers [any type will do]. For large fires: Evacuate area and call Fire Department immediately."

5. **Hazardous Chemicals:** Six labels do not contain listings of "hazardous" chemicals; however, in most cases the MSDS chemicals listed are low risk, high PEL (permissible exposure levels), with relatively trivial adverse health effects. On some MSDSs, no hazardous chemicals are listed because the chemical formulations are trade secrets. The employee, who is supposed to have access to MSDS information in an emergency, has to write to the manufacturer to obtain information on the chemicals. The employer, who is supposed to use this information to prepare his training program, does not have access to such trade secrets.

6. **PELs and TLVs:** Nearly all MSDSs provide PELs or TLVs (Threshold Limit Values); none of the labels do. Neither employees nor employers are trained chemists. Since they are incapable of quantifying job-site exposures, PELs and TLVs are useless to them.

7. **Physical Data:** Nearly all MSDSs contain physical data (boiling point, vapor pressure and density, solubility in water, appearance and odor, specific gravity, percent volatile by volume, etc.), whereas the labels do not. This data, however, provides no information on precautions, effects, or first aid, and as such is of no value to employees and employers. The data serve only to "bury" important information.

8. **Emergency Telephone Numbers:** Each MSDS has an emergency telephone number. Only 3 labels have telephone numbers.

9. **Health Hazard Data (Effects):** In about eight cases the MSDS supplies more information on the effects of hazardous chemicals from inhalation, ingestion, or contact with skin and eyes. In several cases the label is superior. In nearly all cases in which the MSDS provides more information, the effects are minor -- irritation of eyes and skin. Two labels clearly lack important information. One MSDS is missing two pages (page four is on the back of page one, pages two and three are missing). The necessary conclusion from this data is that, in general, labels supply equal and adequate information on the effects of hazardous chemicals.

10. **First Aid:** In six to eight cases, the MSDSs provided more information on first aid than the labels did, although in nearly all cases the first aid prescribed is obvious. When bothered by fumes, move to fresh air. If eyes become irritated, flush with water. If skin becomes irritated, wash it. Several state, "If not breathing, give artificial respiration." However, once again, in nearly all cases, the labels supply equal and adequate first aid treatment information.

In contrast, OSHA does not require first aid information to be included on labels prepared by the employer. The employee is expected to go to the file drawer in the construction trailer to obtain this information. OSHA admits that too much information on labels reduces readership ("the more detail there is on a label, the less likely it is that employees will read and act on the information"), but for some reason feels differently about MSDSs.

11. **Reactivity Data:** In all cases the MSDSs supply this data and the labels do not. In all cases the chemicals are listed as "stable." This is useless information for employees and employers.

12. **Precautions:** In three cases, the MSDSs supply more precautions than the labels, and in two cases the labels supply more. In sixteen cases, MSDSs prescribed wearing goggles, gloves, or protective aprons or clothing, and the labels do not. In each case, however, these precautions may not be necessary, depending on whether the employee uses reasonable care. The labels and MSDSs are usually consistent in requiring NIOSH-approved respirators for certain occupational exposures to hazardous products.

13. **Handling and Storage:** The MSDSs provide more, albeit obvious, information in seven cases. The usual requirement for most flammable items is obvious--store in a cool, well-ventilated place, away from flames.

14. **Spill or Leak Procedures:** The MSDSs provide somewhat more information in five cases. For most, the requirements are again obvious. For flammable items, extinguish flames and ventilate the area; then "scrape together," "soak up," "scoop up," or "absorb." In other words, "clean up."

15. **Waste Disposal:** Nineteen MSDSs provide waste disposal advice which is nearly always, "Obey the law" by following local regulations. One suggests use of "normal methods" of waste disposal. Only three offer possibly useful information requiring incineration instead of landfilling. It should be pointed out that waste disposal for builders is not a major task; it normally involves disposal of empty containers. Therefore, this category is not very useful to employers or to employees.

16. **Read the Label:** Four MSDSs cautioned the reader to "read the product label." This should be the rule. It should also be noted that several of the labels which were inferior to the MSDSs did not comply with CPSC labeling requirements, and it can be assumed that their deficiencies will be rectified quickly by the CPSC.

17. **Understandable Language:** If MSDSs are to be useful, their audience must have some chance of understanding what they say. For the audiences of construction workers and employers, they should be written in plain English, and include "street names" of chemicals (e.g., muriatic acid instead of hydrochloric acid). Instead MSDSs include numerous abbreviations, chemical and medical terms, and other words and phrases that their audience will probably not understand. CPSC labels, on the other hand, tend to be written in language far more understandable to the target audience of consumers and workers.

In conclusion, with the exception of the manufacturer's telephone number, CPSC product labels contain all the product-specific information necessary for an employee to protect himself. The information on product labels is much more readily available in case of emergency than that on MSDSs. The employee only has to pick up the container and

read, instead of going into a file drawer, searching through 300 MSDSs to find the right one, then reading through two to five pages of fine print and incomprehensible chemical data to find the required information.

The lack of consistency in MSDS format makes the task of searching for information even more difficult. Often the sheets are bad photocopies, sometimes totally illegible. Other times the information is trivial--every category filled with "N/A"--not applicable. Such is the case for bagged limestone chips (only the bag is hazardous) or aluminum foil. Sometimes no product name is provided on the MSDS--only a product number--such as on the Liquid Nails Carpet Adhesive MSDS. Other times, no product number is provided--only the name. Sometimes the hazardous chemicals are not listed on the MSDS because they are trade secrets.

In short, existing consumer product labels provide most of the information needed by those who are exposed to hazardous chemicals. To the extent additional information is found to be necessary, the CPSC should step in so that both consumers and workers may benefit. This is not to say that there is no role for MSDSs in the hazard communication process. However, MSDSs should only be required on industrial products which are not commonly available to and used by consumers, and MSDSs should be maintainable at a centralized office location. This approach has the backing of OMB from a paperwork perspective as well as the support of the construction industry in our desire to develop a workable HCS. It will not reduce worker safety in the slightest. Therefore, we strongly urge OSHA to adopt our suggested modifications.

F. Comments on the Definition of "Articles"

The construction industry is relieved to see OSHA has chosen to modify section (iii) of the "articles" definition in section (c) to exempt items "which under normal conditions of use [do] not release more than very small amounts of a hazardous chemical (as determined under paragraph (d) of this section) and [do] not pose a physical hazard or a health risk to employees." (See 53 Fed. Reg. 29852.)

While this language is an improvement, there are still serious and substantive issues of concern to the construction industry left open. Various terms still need clarification, and OSHA has failed to appreciate that the application of the articles definition is an issue in the non-manufacturing sector as well as the manufacturing sector.

The language in section (iii) of "very small quantities, e.g., minute or trace amounts..." suggests the de minimis exemption which the construction industry pressed for in its earlier comments to OSHA and the Advisory Committee on Construction Safety and Health, and which OMB endorsed in its letter of October 28, 1987. Unfortunately, there is still considerable doubt as to what constitutes a "very small quantity" or a "trace amount," although this is an improvement over OSHA's earlier statement exempting "molecular level releases." The definition still allows for inclusion of items that would not meet the "significant risk" test as articulated by the Supreme Court in the Benzene decision.

The construction industry again urges OSHA to adopt a clear and quantifiable de minimis definition which would allow manufacturers and employers alike to objectively determine if an item was covered and would thus trigger the labeling and MSDS requirements. Furthermore, construction employers would be able to more consistently apply the HCS if the definition of "articles" was based on a quantifiable, objective standard.

D. Comments on Employee Training

Another major issue area for our members, as noted above, remains the subject of employee training. Because of the mobility of the construction work force, frequent movements from one job task to another, high personnel turnover, and constant changes in crew size, any type of new training requirements in the building industry, beyond what is already required, impose tremendous practical problems. The complexity of these problems increases geometrically with the sporadic use of a multiplicity of chemicals.

Neither the August 24 amendments to the HCS nor the current NPRM make any changes in the pre-existing training requirements of subsection (h). The NPRM states that employers who comply with the general training requirements of 29 C.F.R. §1926.21 will "largely" be in compliance with the HCS training. 53 F.Reg. 29846. OSHA further invites reliance on 1984 voluntary training guidelines. Yet the language of the HCS itself, which OSHA is so far refusing to modify or clarify, arguably implies that the employee training required under HCS is hazard specific, as opposed to the more generic hazard training permitted under Section 1926.21. The Standard further appears to require that construction work be stopped for new training every time "a new hazard is introduced into (on employee's) work area."

We continue to take the position that these requirements are unrealistic in the construction industry. If OSHA intends to disallow these clearly infeasible aspects of the training provisions, as it certainly should, then the agency should do so explicitly, by modifying the rule. As presently written, an employee may spend more time being trained about hazardous substances than actually working at the site. Obviously, this system cannot work.

We therefore petition OSHA to modify subsection (h) and adopt more general training requirements. Suitable language would be the following:

(h) Employee information and instruction. Employers shall assure that their employees have been provided with information and instruction on hazardous chemicals at construction sites.

(1) Information. Employers shall assure that their employees have been provided with information regarding the general provisions of the contractor's hazard communication program to include at least: (i) Location of hazardous chemical substances inventory; (ii) Location of material safety data sheets; (iii) Explanation of the reference potential of material safety data sheets and labels; and (iv) Description of labeling practices.

(2) Instruction. Employers shall assure that their employees have received instruction on the chemical hazards at their construction sites. Such instruction shall include training in:

(a) The common physical and health hazards of chemicals, and

(b) The generic measures to protect against exposure to chemical hazards.

The preamble should include provisions that employers only be responsible for training their own employees (i.e. each subcontractor would take care of his employees only) and that once an employee has been trained, he or she need not be retrained each time he or she changes jobs. We do not believe that the additional information which the employee will receive each time he or she is "retrained" justifies the exorbitant delays which the existing system will entail.

Occupational Safety and Health Administration
October 28, 1988
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VI. CONCLUSION AND REQUEST FOR HEARING

For the reasons set forth above, OSHA should modify the revised HCS in a manner that will result in provisions which are reasonably necessary and appropriate to reduce significant risks, to the extent such risks exist in construction, and which can feasibly be implemented.

At this time, the Coalition formally requests an opportunity to present a panel of witnesses at OSHA's informal hearing on the HCS, presently scheduled to begin on December 6, 1988.

Respectfully submitted,

THE CONSTRUCTION INDUSTRY
HAZARD COMMUNICATION COALITION

CONSTRUCTION INDUSTRY HAZARD COMMUNICATION COALITION

American Subcontractors Association	Associated Builders and Contractors	National Association of Home Builders
Associated Specialty Contractors	ADSC: The International Association of Foundation Drilling Contractors	Air Conditioning Contractors of America
American Architectural Manufacturers Association	American Fire Sprinkler Association	American Institute of Steel Construction
American Road and Transportation Builders Association	Associated Landscape Contractors of America	Association of the Wall & Ceiling Industries--International
Ceiling and Interior Systems Construction Association	Concrete Sawing and Drilling Association	Door and Operator Dealers Association
Independent Electrical Contractors	Insulation Contractors Association of America	International Association of Drilling Contractors
Mason Contractors Association of America	Mechanical Contractors Association of America	National Association of Cold Storage Contractors
National Association of Minority Contractors	National Association of Plumbing, Heating and Cooling Contractors	National Association of the Remodeling Industry
National Electrical Contractors Association	National Glass Association	National Insulation Contractors Associations
National Ornamental & Miscellaneous Metals Association	National Roofing Contractors Association	National Utility Contractors Association
Painting and Decorating Contractors of America	Sheet Metal and Air Conditioning Contractors National Association	Systems Builders Association

OSHA DOCKET NO. H-022D

COMMENTS OF CONSTRUCTION INDUSTRY
HAZARD COMMUNICATION COALITION

ATTACHMENT 1

SUMMARY

WINCHESTER HOMES - MSD SHEETS

<u>Subcontractor</u>	<u>No. of MSDSs</u>	<u>No. of Pages</u>
Security	2	7
Decks	1	3
Floor Covering	6	11
Drywall	1	4
Cleaning	1	3
Pest Control	2	4
Insulator	2	4
Component Plant	1	4
Cabinets	7	21
Stairs	2	4
Plumbing/Heating (2)	53	119
Electrical (6)	90	301
Concrete	29	34
Millwork	6	25
Roofing	2	8
Punchout	5	13
Concrete Masonry	40	86
Insulation	2	10
Glazing	3	13
Sheathing	1	3
Doors	1	2
Fireplaces	1	1
Windows	1	1
Cement	12	16
Painting (4)	18	50
Gas	5	5
Metal	5	6
Welding	3	5
TOTALS: 38 Subcontractors	<u>302</u> MSDSs	<u>763</u> pages

WINCHESTER HOMES - MSD SHEETS

<u>No.</u>	<u>Subcontractor</u>	<u>Material</u>	<u>Chemical</u>	<u>H?</u>	<u>Manufacturer</u>	<u>Pgs</u>
1	Security	Sealant	Acetoxysilane	Y	Dow Corning	3
2		Gasoline	Petroleum Distillate Benzene, Toluene, Xylene		Crown	4
1	Decks	Wood Preservative CCA	Chromic Acid, Copper	Y	The Applied Research Group	3
			Oxide, Arsenic Pentoxide	Y		
1	Floor Cover.	Carpet pad	Polyurethane foam	No	Scotfoam Corp.	2
2		Carpet & pad	Synthetic fibers	No	Armstrong	1
3		Tile adhesive	Toluene, naptha, hydrocarbon resins	Y	Armstrong	2
4		665 adhesive	Toluene, alcohol, silicon dioxide	Y	Armstrong	2
5		235 adhesive	Toluene, petroleum	Y	Armstrong	2
6		Sheet flooring adhesive	Toluene, petroleum	Y	Armstrong	2
1	Floor Products	S-254 Floor Ad	Synthetic latex resin emulsion	Y	Armstrong	2
2		S-235 Adhesive	Synthetic latex resin emulsion	Y	Armstrong	2
3		S-665 Adhesive	Solvent-dispersed ad	Y	Armstrong	2
4		S-750 Adhesive	Rubber resin	Y	Armstrong	2
1	Carpet	Armstrong rug	synthetic yarn/fiber	N	Armstrong	1
1	Drywall	Adhesive	Hydrocarbon solvent	Y	MiracleAdhesives	4
1	Cleaning Svc.	Spray cleaner	Ethylene glycol monobutyl ether, ammonia	Y	Savogran	3
1	Pest Control	Termiticide	Diethyl trichloro pyridyl phosphoro- thiate	Y	Dow Chemical	4
1	Insulator	Insulation	Fiberglass wool	Y	Owens-Corning	6
2		Fiber products	Refract ceram fiber	Y	Babcock&Wil	2
1	Component Plant	PL400 adhesive	Isopropyl alcohol, dicocodimethylammonium- chloride, acetone hexane, toluene	Y	Rexnord Chem.	4
1	Cabinet Mfr.	Stain #2	PetroleumHydrocarbon	Y	Reliance Univ.	3
2		Stain #7	" "	Y	" "	3

3	Stain #8	"	"	Y	"	"	3
4	Touch-up paint	Ketone, N-propil al-	Y	Star Chemical			2
		cohol, ethylene					
		glycol, monopropyl-					
		ether, dyes					
5	Putty stick	Wax, pigments, acid	No	Star Chemical			2
6	Spray paint	11 chemicals	Y	Star Chemical			4
7	Spray lacquer	8 chemicals	Y	Star Chemical			4

WINCHESTER HOMES - MSD SHEETS

<u>No.</u>	<u>Subcontractor</u>	<u>Material</u>	<u>Chemical</u>	<u>H?</u>	<u>Manufacturer</u>	<u>Pgs</u>
1	Stair Co.	Lacquer stain	Aromatic 100 & 200,	Y	Wampler Chem.	2
		#187	Toluol			
2		#326	Ar.150, Toluol	Y	Wampler Chem.	2
1	Plumbing & Heating	Anti-freeze			Quaker State	2
2		Brake fluid			Rymark Ind.	2
3		Diesel fuel			U.S. Aviex Co.	2
		conditioner				
4		Battery acid			Scholle Corp.	2
5		Carb.cleaner			CRC Chemicals	2
6		Pipe paste		No	Lake Chem. Co.	2
7		Putty	Asbestos		Hercules Chem.	2
8		Purple primer	Methyl Ethyl Ketone,	No	Oatey Co.	2
			Tetrahydrofuran	No		
9		PVC cement	Tetrahydrofuran,	Y	Oatey Co.	2
			Cyclohexanone	Y		
10		Cleaner	Methyl Ethyl Ketone	No	Oatey Co.	2
11		PVC cement	Tetrahydrofuran,	Y	Oatey Co.	2
			Cyclohexanone	Y		
12		CPVC cement	same as 11	Y	Oatey Co.	2
13		PVC-ABS cement.	same as 11	Y	Oatey Co.	2
14		CPE solvent	m-Xylene, m-Xylol	No	Oatey Co.	2
15		Cutting oil	Sulfur, petroleum,	Y	Hercules Chem.	2
			naptha			
16		50/50 Solder	Lead, tin,antimony,	Y	Federated-Fry	4
			arsenic			
17		95/5 Solder	Tin, antimony	Y	Federated-Fry	4
18		Propane	Propane	Y	BerzOmatic	2
19		Propane	PetroleumHydrocarbon	Y	Exxon Co. USA	2
20		Acetylene	Aliphatic "	Y	Airco Carbide	3
21		Pipe lubricant	Soap	No	Concord Chem.Co.	2
22		Flux paste		No	Lake Chem.Co.	2
23		AcrylicLacquer	Toluene, AmylAcetate,	Y	DuPont	2
			Xylene, 1-Methoxy-2			
			Propanol Acetate			
24		Lacquer Clears	22 chemicals	Y	DuPont	2
25		LacquerThinner	15 chemicals	Y	DuPont	2
26		Acrylic Enamel	Toluene, Xylene,	Y	DuPont	2
			Methyl Ethyl Ketone			
			+ 5 chemicals			
27		Basemakers	11 chemicals	Y	DuPont	2
28		Alkyd Enamel	Toluene, Xylene +4	Y	DuPont	2
29		Polyurethane	Toluene, 1-Methoxy-2	Y	DuPont	2
		Enamel	propanol acetate,			
			ethyl acetate			
30		Enamel Topcoat	5 chemicals	Y	DuPont	2
31		Vinyl Enamel	11 chemicals	Y	DuPont	2

WINCHESTER HOMES - MSD SHEETS

<u>No.</u>	<u>Subcontractor</u>	<u>Material</u>	<u>Chemical</u>	<u>H?</u>	<u>Manufacturer</u>	<u>Pgs</u>
32	Plumbing and Heating	Enamel	6 chemicals	Y	DuPont	2
33		Enamel Reducer	19 chemicals	Y	DuPont	2
34		Hardeners	6 chemicals	Y	DuPont	2
35		Additives	13 chemicals	Y	DuPont	2
36		Ac.Lac.Primer	11 chemicals	Y	DuPont	2
37		Enamel Primer	16 chemicals	Y	DuPont	2
38		Paint Remover	11 chemicals	Y	DuPont	2
39		Transmission Fluid (DexII)	PetroleumHydrocarbon	Y	Pennzoil	6
40		Transm.Fluid F	" "	Y	Pennzoil	6
41		Hydraulic oil	" "	Y	Pennzoil	6
42		Diesel fuel #2	Petroleum Distillate	Y	Exxon	3
43		Gasoline	" "	Y	Amoco	4
44		Duct seal foam				2
1	Plumbing-2	CPVC Cement	Tetrahydrofuran, Cyclohexanone	Y	Oatey Co.	1
2		Oatey Cleaner	none	N	Oatey Co.	1
3		Paste w/teflon	none	N	Lake Chem.	1
4		Pipe Joint cmp	none	N	Lake Chem.	1
5		Flux Paste	none	N	Lake Chem.	1
6		cement	tetrehydrofuran, Cyclohexanone	Y	Oatey Chem.	1
7		cement/clear	Tetrahydrofuran, Cyclohexanone	Y	Oatey Chem.	1
8		ABS cement	methyl ethyl ketone	Y	Oatey Chem.	1
9		PVC cement,med	tetrahydrofuran, cyclohexanone, methyl ethyl ketone	Y	Oatey Chem.	1

WINCHESTER HOMES - MSD SHEETS

<u>No.</u>	<u>Subcontractor</u>	<u>Material</u>	<u>Chemical</u>	<u>H?</u>	<u>Manufacturer</u>	<u>Pgs</u>
1	Electrical-1	Cable cleaner	Trichloroethane, perchloroethylene, dioxane	Y	3M	4
2		4-Way 1605	Propane, isobutane, mineral spirits, kerosene,+4	Y	3M	4
3	Electrical-2	PVC cement	Tetrahydrofuran, methyl ethyl ketone, Cyclohexanone	Y	Hercules Chem.	4
4	Electrical-3	Fire Putt 303	Amorphous Silica, Xylene, +4NH, methyl ethyl ketone		3M	4
5		FireCaulk CP25	Xylene,+5NH methyl ethyl ketone	Y	3M	4
6		Insul Resin	Carbon Black, +5NH, 2,4,6 T-Dimethylami	Y	3M	4
7		Isul Resin 400	Vinyl Cyclohexane..., Carbon Black, +3NH	Y	3M	4
8		InsulResin2100	Prepolymer..., +5NH	Y	3M	4
9		InsulResin2104	Prepolymer..., +5NH	Y	3M	4
10		Plastic Spray	Toluene, Propane, Ethyl Alcohol, +2NH	Y	3M	3
11		Silicone Lub.	Hexane,n-hexane,+2NH	Y	3M	4
12		Elect. Coat	Acetone, Toluene, methyl ethyl ketone, Zinc Oxide, +5NH	Y	3M	4
13		BagCleaningPad	1,1,1 Trichloroeth..	Y	3M	3
14		PipeInsulPutty	Titanium Dioxide, Carbon Black, +4NH	Y	3M	3
15		Cable Prep Kit	1,1,1 Trichloro...	Y	3M	3
16		Silicone lub.	1 NH	N	3M	3
17		Sealing Cmpd	Antimony Trioxide, Lead Phosphaate +2NH	Y	3M	3
18		2200 MasticPad	Antimony Trioxide, Lead Phosphate, +2NH	Y	3M	3
19		2100 MasticRol	Antimony Trioxide, Lead Phosphate, +2NH	Y	3M	3
20		Rubber Adhesiv	Toluene, distillates Aliphatic Petroleum, ethyl alcohol, n-hexane, +4NH	Y	3M	4
21		Contact Clean	Trichloriflouethane, Carbon Dioxide	Y	3M	3

WINCHESTER HOMES - MSD SHEETS

No.	Subcontractor	Material	Chemical	H?	Manufacturer	Pgs
22	Electrical 4	Red Ivi-spray	methylene chloride,	Y	3M	4
23		1602 IVI Sprat	methylene chloride,	Y	3M	4
			isopropyl alcohol,			
			methy ethyl ketone,			
			toluene,propapne+3NH			
24		Degreaser 1606	1-1-1-trichloroetha,	Y	3M	4
			1,4-dioxane,			
			parchoroethylane,			
			carbon dioxide			
25		2114InsulResin	Prepolymer:Aliphatic	Y	3M	4
			+4NH			
26		1603 Black IVI	Carbon Black, Xylene	Y	3M	4
			methy ethyl ketone,			
			ButylAlcohol propane			
			methylene chloride+3			
27		1603 black IVI	carbon black, xylene	Y	3M	4
			methy ethyl keton,			
			butyl alcohhol,			
			methylene chloride			
			propane, +3NH			
28		1605elec 4-way	mineral spirits,	Y	3M	4
			kerosene,propane,			
			2-Butoxyethanol,			
			isobutane, +2NH			
29		1607cleaner	1,1,1-trichloroethan	Y	3M	4
			dimethoxmethane,			
			1,4-dioxane,			
			carbon dioxide			
30		insul putty	carbon black, +4NH	Y	3M	3
31		pipe primer	ethyl alcohol, +2NH	Y	3M	3
			petroleum distilate,			
			lead oxide, toluene			
32		2130 flame no	prepolymer:diphenyl.	Y	3M	4
			carbon black, +4 NH			
			antimony trioxide,			
			decarbomodiphenyl.			
33		Kit 82-A	2,4,6 tris(dimethyl,	Y	3M	4
			Carbon Black, +5 NH			
34		Kit 82-A1	2,4,6-tris(dimethyl,	Y	3M	4
			Carbon Black, +5NH			
35		Kit 82-A3	2,4,6-tris(dimethyl,	Y	3M	4
			Carbon Black, +5NH			
36		Kit 85-10	Preplymer:diphen	+4 Y	3M	4
37		Kit 85-12	Prepolymer:Diphen	+4 Y	3M	4
38		Kit 85-14	Prepolymer:diphen	+4 Y	3M	4
39		EG-3 connect	Mineral oil +3NH	Y	3M	3
40		hydraulic oil	refine distillat oil	Y	Ridge Tool	3

WINCHESTER HOMES - MSD SHEETS

No.	Subcontractor	Material	Chemical	H?	Manufacturer	Pgs.
41	Electrical 5	thread cut oil	mineral oil	Y	Ridge Tool	3
		Motor grease	distillate oil	Y	Ridge Tool	3
43		Grease	1,3-Dioxolan-Z-One,	Y	Blackburn	2
44		Kit 82-A2	2,4,6-Tris(Dimethy, Carbon Black	Y	3M	4
45		Kit 72-N3	Prepolymer:Dimet +4	Y	3M	4
46		elect ballast	PCB	Y	Branch elect	2
47		KIT 5903	Prepolymer:Diphen +4	Y	3M	4
48		KIT 5903	1,1,1-trichloroethan	Y	3M	3
49		KIT 82-B1	2,4,6-Tris(Dimethan, Carbon Black	Y	3M	4
50		KIT 85-16	Prepolymer:Diphen+4	Y	3M	4
51		KIT 5636K	1,1,1-Trichloroethan	Y	3M	3
52		KIT 5905/2100	Prepolymer:Diphen +4	Y	3M	4
53		KIT 5905/A-2	1,1,1-Trichloroetha	Y	3M	3
54		Sodate Retarde	none	N	US Gypsum Co	2
55		KIT 5635K	Silicone Cmpd.	N	3M	3
56		Kit 5635K(A-2)	1,1,1-Trichloroethan	Y	3M	3
57		KIT 5633 silic	Silicone cmpd	N	3M	3
58		KIT 5633/A-2	1,1,1-Trichloroethan	Y	3M	3
59		KIT 3570/400	Vinyl Cyclohexene di Carbon Black +3	Y	3M	4
60		Caulk CP-25	methyl ethyl ketone, xylene, Magnesium Oxide, Calcium Carbonate	Y	3M	4
61		Kit 5718	1,1,1 trichloroethan	Y	3M	3
62		switch cleaner	thichloroflourethan, Dichlorodiflorometh	Y	3M	3
63		Hand Cleaner	Dipropylene Glycol, Isobutane	Y	Ideal Indust	3
64		KIT 5718/A-2	1,1,1-Trichloroeth	Y	3M	3
65		Switch cleaner	trichlorotriflouroet Dichlorodiflorometh	Y	3M	3
66		40-695 hand cl	dipropylene glycol, isobutane	Y	Ideal	3
67		40-685 pen oil	stoddard solvent, normal butylalcohol, methyl chloride, propane, isobutane	Y	Ideal Indust	3
68		40-635 lubric.	Hexane, propane, isobutane	Y	Ideal Indust	3
69		40-630 Zinc,ga	xylol, VM&P Naphtha, MEK, Tolvol, propane methylene chloride, isobutane	Y	Ideal Indust	3
70		40-600 moist	low odor base solven	Y	Ideal Indust	3

WINCHESTER HOMES - MSD SHEETS

<u>No.</u>	<u>Subcontractor</u>	<u>Material</u>	<u>Chemical</u>	<u>H?</u>	<u>Manufacturer</u>	<u>Pgs</u>
71	Electrical-5	moisture displ	low odor base solvn, butyl cellosolve, A propane	Y	Ideal	3
72		wire lubricant	none	N	Ideal Indust	1
73		Noalox	none	N	Ideal Indust	1
74		1188,1200,1350	Aluminum alloy	Y	Service Wire	2
75		KIT 5719/A-2	1,1,1-trichloroethan	Y	3M	3
76		KIT 5720/A-2	1,1,1-trichloroethan	Y	3M	3
77		KIT 5504 Bag c	1,1,1-trichloroethan	Y	3M	3
78		KIT 5504 silic	silicone cmpd	N	3M	3
79		Insul Resin	2,4,6-tris(dimethyl carbon black +5NH	Y	3M	4
80		KIT 82-A	2,4,6-TRIS(Dimethyl, Carbon Black +5NH	Y	3M	4
81		KIT 82-A1	2,4,6-Tris(dimethyl, Carbon Black +5 NH	Y	3M	4
82		KIT 82-A3	2,4,6-Trisdimethyl, Carbon Black, +5NH	Y	3M	4
83		KIT 82-A2	2,4,6-Tris(dimethyl, Carbon Black, +5NH	Y	3M	4
84		KIT 82-B1	2,4,6-Tris(dimethyl, Carbon Black, +5NH	Y	3M	4
85		electrode	iron, limestone, fluorides, silicate barriers, titanium dioxides, manganese (alloys), silicone alloys, bauxite/alum ferrovanadium, mineral silicates, zinc oxides	Y	Lincoln Elec	2
86	electrical 6	barecopperwire	fumes and gases from copper, zinc, tin, aluminum, manganese iron, silicon, nickel		JW Harris Co	2
87		Carbon steel wire	fumes contain: Fe oxide & fluorides, oxides of Cu, Al, Ca Mg, Mn, K, Si, Na, Ti, Zirconium	Y	Unibraz	2
88		Covered electrode E7018	Iron, Limestone, Calcium carbonate flourides, silicone barriers, manganese/ alloy, mineral silicates, silicone alloys, ferrovanadium Zinc oxides	Y	Lincoln Elec	1

WINCHESTER HOMES - MSD SHEETS

<u>No.</u>	<u>Subcontractor</u>	<u>Material</u>	<u>Chemical</u>	<u>H?</u>	<u>Manufacturer</u>	<u>Pgs</u>
89		Covered Elec- trode E6011	Cellulose/carbo, iron,silicatebarrier Titanium dioxides, magnesite & alkali carbonates,Mn/alloys mineral silicates	Y	Lincoln	5
90		Nickel/alloy coated electrodes	fumes: Mn, Fe oxide Si oxide, Cu, Cr, Molybdenum, Ni, Al, Ti, Co, Tungsten,j Ti diox, Cacarbonate Ca F, Cryolite, Feldspar, Cr oxide, K silicate, KOH	Y	Lincoln Elec	2
91		Arcal "Weld-O"	hydrofluoric acid, nitric acid	Y	Lincoln	2
1	Concrete	Ready mix	Portland cement	Y	Genstar	1
2		Accelerator	Calcium chloride, amine	No	W.R.Grace	1
3		Plasticizer	Sodium, potassium, lignosulfonate, naphthalene sulfonic acid, formaldehyde	Y	W.R.Grace	2
4		Hardener	Calcium nitrite, nitrosodiethanolamine	Y	W.R.Grace	1
5		Retarder	Lignin Sulfonate, Formaldehyde	Y	W.R.Grace	1
6		Daravair	Vinsol	No	W.R.Grace	1
7		Darex AEA	Sulfonate	No	W.R.Grace	1
8		Corrosion inhibitor	Calcium nitrate	Y	W.R.Grace	3
10		Pumping aid	Polyethylene oxide	No	W.R.Grace	1
11		Add. WRDA	Lignin sulfonate, Formaldehyde	Y	W.R.Grace	1
12		Plastizer	Sodium, potassium, formaldehyde	Y	W.R.Grace	4
13		Add.WRDA-HC	Sodium, polyhydroxy	No	W.R.Grace	1
14		Add.WRDA-Hycol	Hydrocarbons, lignin sulfonate, amines, formaldehyde	Y	W.R.Grace	1
15		Add. 122	Phenolic biostat	Y	Master Bldrs	1
16		Add .300	" "	Y	Master Bldrs	
17		Add. MB-VR	Caustic soda	Y	Master Bldrs	1
18		Add. 100-XR	Phenolic biostat	Y	Master Bldrs	1
19		Add. 122-HF	--	No	Master Bldrs	1

WINCHESTER HOMES - MSD SHEETS

No.	Subcontractor	Material	Chemical	H?	Manufacturer	Pgs
20	Concrete	Add. 122-R	Phenolic biostat	Y	Master Bldrs	1
21		Add. 322-N	Phenolic biostat	Y	Master Bldrs	1
22		Add. 400-N	--	No	Master Bldrs	1
23		Accelerator	--	No	Master Bldrs	1
24		Add. 100	Free alkali	Y	BordenRemington	1
25		Add. RD-2	Free alkali	Y	BordenRemington	1
26		Add. RD-1	Free alkali	Y	BordenRemington	1
27		Add. Mighty	Free alkali	Y	BordenRemington	1
28		Portland Cement	High pH of solutions	Y	Coplay Cement	1
29		Detergent	Hydrochloric acid	Y	ProSoCo	2
1	Barber & Ross	Glazing comp.	Vegetable oil	No	Biddle Co.	4
2		Bed adhesive	Hexane, naptha, hydrocarbons, isoeptanes, toluene	Y	Biddle Co.	4
3		Butyl ad.tape	Asbestos fiber	Y	Biddle Co.	4
4		Latex caulk	--	No	Biddle Co.	3
5		Catalyst 182LD	Maleic Anhydride, phosphoric acid	Y	Borden	4
6		Elastopor	Isocyanate, diphen-ylmethane Diisocyanate	Y	BASF	6
1	ThulmanEastern	Const.adhesive	Aliphatic hydrocarb	Y	MiracleAdhesive	4
2		Roof Cement	Asphalt, asbestos	No	SeaboardAsphalt	4
1	Punchout?	#2 stain	Petroleum hydrocarb,	Y	Am.Woodmark	3
2		#8 stain	" "	Y	Am.Woodmark	3
3		#7 stain	" "	Y	Am.Woodmark	3
4		Touch Pals	Alcohol	Y	Star Chemical	2
5		Putty stick	Pigment blend	Y	Star Chemical	2
1	N.M.Phillips (masons?)	Concrete block	Quartz	Y	Balcon, Inc.	2
2		50/50 solder	Tin, lead, antimony arsenic	Y	Federated-Fry	4
3		Insulation	Fibrous glass	No	CertainTeed	4
4		PVC cement	Dimethyul Mormamide, tetrahydrofuran, methyl ethyl ketone, cyclohexanone	Y	Hercules Chem.	1

WINCHESTER HOMES - MSD SHEETS

<u>No.</u>	<u>Subcontractor</u>	<u>Material</u>	<u>Chemical</u>	H?	<u>Manufacturer</u>	<u>Pgs</u>
1	Insulation	Polycel	Polyurethane Prepoly	Y	Carroll Insu	4
2		Fiberglass	fibrous glass	Y	Owens-Cornin	6
1	Builders	Perma Glaze W	none	N	Biddle Co.	4
2		bedding adhes	hexane, vw&P Naptha, Aliphatic and aroma- matic hydrocarbons, n & isoheptanes, toluene	Y	Biddle Co.	6
3		Latex calk	none	N	Biddle Co.	3
1	Paper Laminate	CatalyH-182LD	Maleic Anhydride, Phosphoric Acid	Y	Borden	3
1	Doors		None	N	C&D Doors In	2
1	Fireplaces		None	N	Hearth&Home	1
1	Windows	Wind&SideCaulk	Mineral spirits	Y	Ohio Sealant	1

WINCHESTER HOMES - MSD SHEETS

<u>No.</u>	<u>Subcontractor</u>	<u>Material</u>	<u>Chemical</u>	<u>H?</u>	<u>Manufacturer</u>	<u>Pgs</u>
1	Cement	Sure-Grout 180		N	Kaufman	1
2		K-crete 170				1
3		Duracrete 190				1
4		Tycon 140-50				1
5		Patchwell 90B				1
6		Dress-up 30				1
7		Hi-Cap 175				1
8		Sure Plug 172				1
9		Hi-Caplight 176				1
10		MD fibered roof coat	Petroleum distillate	Y	Monsey Prod. Co.	2
11		rigid hydraulic fuel	Paraffinic distillate oil	Y	Ridge Tool	3
12		flake CaCl ₂	Calcium chloride	Y	Allied	2
1	Painting-1	House & Trim paint, 7 series except 27-202, 27-219, 27-220	Hydrocarbon solvent	Y	McCormick	3
2		House & trim paint, 7 series	Hydrocarbon solvent	Y	McCormick	3
3		Tempo Latex semigloss paint	ethylene glycol	Y	McCormick	3
4		Vinyl Flat paint, 12 series	diatomaceous earth, ethylene glycol	Y	McCormick	3
5		latxhouse paint	ethylene glycol	Y	McCormick	3
6		exter. paint 27 series, except 27-219, 27-202, 27-220	ethylene glycol	Y	McCormick	3
7		exter. paint 27 series	ethylene glycol	Y	McCormick	3
8		exter. paint 27-202, 27-219, 27-220	ethylene glycol, chromium oxide	Y	McCormick	3
9		house & trim paint, 7-702, 7-219, 7-220	Chromium oxide, hydrocarbon solvent	Y	McCormick	3
10		27-200 exter. lusthouse paint	Carbon Black, ethylene glycol	Y	McCormick	3
11		Galvaniz. cmpd	Zinc, toluene, methylene chloride, xylene, Propellate propane	Y	ZRC Products	2
12		Bar-ox int/ext gloss enamel	mineral spirits, VM&P Naphtha, Aromatic Hydrocarbon,	Y	Devoe & Raynolds Co.	4

WINCHESTER HOMES - MSD SHEETS

<u>No.</u>	<u>Subcontractor</u>	<u>Material</u>	<u>Chemical</u>	<u>H?</u>	<u>Manufacturer</u>	<u>Pgs.</u>
13	Painting-2	Bar-Ox Alkyd shop/field primer	Mineral spirits, iron oxide, alum- inum silicate, Calcium carbonate, Mod.BariumMetaborate	Y	Devoe & Raynolds Co.	4
14		spray enamel	VM&P Naphtha,xylene, methylene chloride, propane/isobutane Propellent, Titanium Dioxide, iron oxide calcium carbonate, magnesium silicate	Y	Devoe & Raynolds Co.	4
15		Bar-Ox int/ext alkydGlossEnam	Mineral spirits, VM&P Naphtha, titan- ium dioxide, A-Calcium Carbonate, B-Organophyllic Clay	Y	Devoe &	3
16	Painting-3	Polymethylene- Polyphenyliso- cyanates	Diphenylmethane Di- socyanats, Oligomers	Y	BASF Corp Ch	4
17		Elastopor P-1066 U Resin	Urethane Resin	Y	BASF Corp Ch	4
18		Silicone Caulk	Acetoxysilane	Y	Rutland Prod	1
19	Painting-4	Wood Primer	TexanolEsterAlcohol, ethylene Glycol	Y	Davis Paint	2
20		Purple primer	none	N	Oatey Co.	1

WINCHESTER HOMES - MSD SHEETS

<u>No.</u>	<u>Subcontractor</u>	<u>Material</u>	<u>Chemical</u>	<u>H?</u>	<u>Manufacturer</u>	<u>Pgs</u>
1	Gas	LOX, GOX	oxygne gas	Y	Roberts Ox	1
2		Propane		Y	Roberts	1
3		Acetylene		Y	Roberts Oxy.	1
4		dry ice	Carbon Dioxide	Y	Roberts Oxy.	1
5		Argon, LAR		Y	Roberts Oxy.	1
1	Metals	StainlessSteel	alloy= Fe, C, Mn P, S, Si, Cr, Ni,Se, Cb, Ta, Cu, Mo,Al,Ti	Y	Earle Jorgen	1
2		Galvin. coat on steel prod	lead	Y	S. Galviniz.	1
3		Metabo	Abrasive Wheel	Y	Metabo Corp.	2
4		Shielded metal arc welding	Fe, Mn, K silicate, Na silicate, oxides of Ti and Mg	Y	Hobart Bros	1
5		mild steel Aluminum/alloy	alloy= Al, Co, Cu, Fe, Pb, Mg, Mn, Si Sn, Zn	Y	Earle Jorgen	1
1	Welding	Anti-Borax #2 brazing flux		N	Anti-Borax	1
2		Resin bonded gringing wheel		N	Unit Abrasiv	2
3		asphalt impreg veg. fib board	petroleum solvent	Y	Meadows	2

WINCHESTER HOMES - MSD SHEETS

<u>No.</u>	<u>Subcontractor</u>	<u>Material</u>	<u>Chemical</u>	<u>H?</u>	<u>Manufacturer</u>	<u>Pgs</u>
1	Masonry		Acetylene	Y	Union Carbid	3
2			Acrylic Latex	Y	Thoro System	
3		Brick/Concrete		Y	AGCA	2
4			Calcium Chloride	Y	AGCA	2
5		Portland cement		Y	AGCA	2
6		Diesel fuel		Y	AGCA	2
7			Epoxy Curing Agent	Y	Mobil Chemic	2
8			127 Epoxy Resin	Y	Reichhold Ch	2
9			137 Epoxy Resin	Y	Reichhold Ch	2
10		Anti-freeze	ethylene Glycol	Y	AGCA	2
11		37-620 Resin H		Y	Reichhold	2
12			Ca Chloride & Inhibi	Y	Euclid	2
13			Asphaltic board	Y	WR Meadows	2
14		leaded Gas		Y	AGCA	2
15		Gas	Petroleum Hydrocarbo	Y	Exxon Co.	3
16		C-5 insul	Solvent Petroleum,	Y	Macco Adhes	2
		adhesive	Hydrocarbon, methanol			
17		lime	Calcium Oxide	Y	AGCA	2
18			methane	Y	AGCA	2
19			Petroleum Hydrocarbo	Y	Autoline Lub	2
20			HCl	Y		2
21		Acrylic Paint		Y	Cook-David-	5
22		After Blast sh		Y	Mobil Chem.	2
		primrd53-R-101				
23		Paint 58-F-23		Y	Mobil Chem.	2
24		Paint 58-D-95		Y	Mobil Chem.	2
25		Paint 58-F-14		Y	Mobil Chem.	2
26		12-F-15 Coatin		Y	Mobil Chem.	2
27		39-J-96 Coatin		Y	Mobil Chem.	2
28		53-R-8 Primer		Y	Mobil Chem.	2
29		59-R-90 Paint		Y	Mobil Chem.	2
30		Duracryl Thin		Y	PPG Industr	2
31			Polyethylene	Y	Monsanto Co.	2
32		LP-gas	Propane	Y		2
33		Masonry sand	Free silica	Y	Genstar Ston	2
34		Styrofoam		Y	Dow Chem. US	2
35		600 Detergent		Y	ProSoCo, Inc	2
36		Vana Trol		Y	ProSoCo. Inc	2

OSHA DOCKET NO. H-022D

**COMMENTS OF CONSTRUCTION INDUSTRY
HAZARD COMMUNICATION COALITION**

ATTACHMENT 2

CARVER
Tripp

**Polyurethane
 Liquid
 Plastic**

Satin Finish

**DANGER! COMBUSTIBLE. HARMFUL OR
 FATAL IF SWALLOWED. See other cautions on back panel**

ONE HALF PINT (8 FL. OZ.) 240 ML.

SG 1.87
 S41246

45748
 LOWE'S
 342

Carver Tripp Polyurethane Liquid Plastic Satin Finish 7038
 For wood surfaces that receive heavy use, table tops, bar tops, floors, doors, or almost any interior or exterior wood surface. Liquid Plastic will protect new, unfinished, stained or previously varnished wood. Do not use over shellac or lacquers. High quality polyurethane resists marring and scuffing. It also protects against most household chemicals, detergents or alcohol.
Preparation: Surface should be dry and free from wax, grease and dirt. Do not apply over shellac, lacquer or waxed finishes.
Carver Tripp Polyurethane Liquid Plastic can be applied over most types of varnish or other brands of polyurethane. Before application over old finishes, sand thoroughly with fine sandpaper for a good bond. Be sure area and surface are dust free.
Application: STIR CONTENTS. DO NOT SHAKE. For best results use at 60° F and 80° F. Apply out of direct sunlight and allow 3 to 6 hours between coats. Sand between coats. Allow final coat to dry overnight before using. Clean brushes or other tools with mineral spirits.

Coverage: Varies between 40 to 50 sq. ft. per half pint. Two coats minimum are recommended. Three coats are desired for maximum protection.

Warranty: Carver Tripp products are safe and effective when used as directed. Always test on a small area. As manufacturer cannot control methods or conditions of application, no warranty or liability beyond replacement of defective product is offered.

CAUTION: Contains Petroleum Distillate. Keep away from heat, sparks and flame. To avoid breathing vapors or spray mist, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches or dizziness, increase fresh air or wear respiratory protection (NIOSH/MSHA TC 23C or equivalent) or leave the area. Close container after each use. Avoid contact with skin.

FIRST AID: If swallowed do not induce vomiting. Call physician immediately. Use With Adequate Ventilation. **NOTICE:** Reports have associated repeated and prolonged occupational exposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

KEEP OUT OF REACH OF CHILDREN.

Parks Corporation, Somerset, MA 02726 7651 SAI87



MATERIAL SAFETY DATA SHEET

(Approved by U.S. Department of Labor "Essentially Similar" to Form LSH-005-4)

PARKS

Section I

MANUFACTURER'S NAME PARKS CORPORATION		CHEMICAL NAME & SYNONYMS N.A. (Mixture)
STREET ADDRESS P.O. BOX 5		CHEMICAL FAMILY Urethane Resin, Aliphatic Hydrocarbon
CITY, STATE, AND ZIP CODE SOMERSET, MASS. 02726	TRADE NAME Carver Tripp LIQUID PLASTIC	
EMERGENCY TELEPHONE NO. (617) 679-5938	FORMULAS N.A. (Mixture)	
Revised 7/16/87		

Section II — HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS						PPM
PERCENTS	%	TLV (Unrel.)	SOLVENTS	P.E.L.	%	TLV (Unrel.)
N.A.			Mineral Spirits (Paint Thinner) CAS No. 64741-41-9	100	53	500
CATALYST	N.A.					
VEHICLE	N.A.					
ADDITIONAL INGREDIENTS				N.A.		
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES						TLV (Unrel.)
N.A.						

Section III — PHYSICAL DATA

BOILING POINT (°F)	Range	310-411°F	SPECIFIC GRAVITY (H ₂ O = 1)	0.90
VAPOR PRESSURE (mm Hg.)		0.3-5 mm Hg	PERCENT VOLATILE BY VOLUME (%)	60
VAPOR DENSITY (AIR = 1)		Heavier	EVAPORATION RATE (Water = 1)	Slower
SOLUBILITY IN WATER		Negligible		
APPEARANCE AND ODOR	Clear translucent thin liquid, mild odor, amber color			

Section IV — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED)	101°F, T.C.C.	FLAMMABLE LIMITS	0.8	6
EXTINGUISHING MEDIA	Carbon Dioxide, dry chemical, foam or water fog.			
SPECIAL FIRE FIGHTING PROCEDURES A straight water stream would spread hydrocarbon fires. Closed containers may be cooled with water. Avoid breathing vapors. Use fresh air respirators.				
UNUSUAL FIRE AND EXPLOSION HAZARDS Combustible liquid. A vapor accumulation would flash and/or explode if ignited. Closed containers may explode if subjected to extreme heat. Soaked rags subject to spontaneous combustion.				

Section V — HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	See Section II
EFFECTS OF OVEREXPOSURE	
Excessive Inhalation - Causes impaired coordination, respiratory irritation, dizziness, weakness and nausea.	
Causes EYE Irritation, drying of SKIN.	
Systemic Effect: Respiratory tract irritation. Central nervous system depression in high concentrations.	

CONTINUED ON PAGE 2

EMERGENCY AND FIRST AID PROCEDURES

Eye Contact: Wash immediately with a gentle stream of water for 15 minutes. Seek medical help.

Skin Contact: Wash with mild soap and water. Seek medical attention.

Inhalation: Remove to fresh air. Apply artificial respiration. If breathing stops, seek immediate medical attention.

Ingestion: Do not induce vomiting. Call a physician immediately.

Section VI — REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Avoid heat, sparks, flame and other sources of ignition.
INCOMPATIBILITY (Mixtures to Avoid) Avoid strong oxidizing agents.			
HAZARDOUS DECOMPOSITION PRODUCTS Carbon Monoxide, Carbon Dioxide and possibly Acrolein and Oxides of Nitrogen may yield when thermally decomposed.			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	Strong oxidizing agents.

Section VII — SPILL OR LEAK PROCEDURES**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Extinguish sources of ignition. Ventilate to prevent build-up of vapors. Large spills can be taken with inert materials such as sawdust, sand, earth, clay and shovelled into containers for disposal. Prevent run-off to sewers, streams and or other bodies of water. Small amounts of spilled material may be absorbed into an appropriate absorbent.

WASTE DISPOSAL METHOD

Discard in sealed metal container in accordance with local regulations. Soak clean-up rags in water to avoid spontaneous combustion.

Section VIII — SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify Type) TC-23C-75 Use air supplied respirator for work in confined spaces.			
VENTILATION	LOCAL EXHAUST	Yes	SPECIAL N.A.
	MECHANICAL (General)	Yes	OTHER Adequate Ventilation
PROTECTIVE GLOVES If needed to avoid skin contact.		EYE PROTECTION Goggles or safety glasses - avoid eye contact.	
OTHER PROTECTIVE EQUIPMENT Eye bath and safety shower. Rubber shoes or boots, coveralls and/or rubber apron.			

Section IX — SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE Keep container closed and upright when not in use. Do not transfer to an unmarked container. Read all warning labels. Store in cool, well-ventilated area away from heat or flame.

OTHER PRECAUTIONS Keep out of reach of children. Soaked rags subject to spontaneous combustion. If ingested do not induce vomiting. Call a physician immediately.

CARVER
Tripp

Premium

**Clear
Varnish**

Satin Finish

DANGER! COMBUSTIBLE.
FLAMMABLE OR FATAL IF SWALLOWED.

Directions on back panel. 7623 SA1286 SGI 187
ONE QUART (32 FL. OZ.) .95 LITER

Carver Tripp Clear Varnish Satin Finish

7014

An easy to apply Clear Finish for normal wearing interior wood surfaces - doors, cabinets, furniture and panelling. Can be used with most other varnishes or polyurethanes. Do not use over shellac or lacquer.

Preparation: Surface should be dry and free from wax, grease and dirt. Do not apply over shellac, lacquer or waxed finishes. Carver Tripp Polyurethane Liquid Plastic can be applied over most types of varnish or other brands of polyurethane. Before application over old finishes, sand thoroughly with fine sandpaper for a good bond. Be sure area and surface are dust free.

Application: STIR CONTENTS. DO NOT SHAKE. Proper application tools are important. For best results, use at temperature between 60°F and 80°F. Apply out of direct sunlight. You can recoat in 3-6 hours. Sand lightly between coats. Allow at least 16 hours after application of final coat before exposing to heavy use or wear. Two or three coats will provide a good finish for most applications. Clean brushes or other tools with brush cleaner or mineral spirits.

Coverage: Varies with surface porosity. 100 to 200 sq. ft. per quart is normal.

Warranty: Carver Tripp products are safe and effective when used as directed. Always test on a small area. As manufacturer cannot control methods or conditions of application, no warranty or liability beyond replacement of defective product is offered.

CAUTION: Contains Petroleum Distillate. Keep away from heat, sparks and flame. To avoid breathing vapors or spray mist, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches or dizziness, increase fresh air or wear respiratory protection (NIOSH/MSHA TC 23C or equivalent) or leave the area. Close container after each use. Avoid contact with skin.

FIRST AID: If swallowed do not induce vomiting. Call physician immediately.

Use With Adequate Ventilation. NOTICE: Reports have associated repeated and prolonged occupational exposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

KEEP OUT OF REACH OF CHILDREN.

Parks Corporation, Somerset, MA 02726 7624 SA187



MATERIAL SAFETY DATA SHEET

(Approved by U.S. Department of Labor "Essentially Similar" to Form LSH-003-4)

PARKS

Section II

MANUFACTURER'S NAME PARKS CORPORATION		CHEMICAL NAME & SYNONYMS N.A. (Mixture)
STREET ADDRESS P.O. BOX 3		CHEMICAL FAMILY Urethane Alkyd. Aliphatic Hydrocarbon
CITY, STATE, AND ZIP CODE SOMERSET, MASS. 02726	TRADE NAME Carver Tripp ~~Super Gloss Premium Clear Varnish~~	
EMERGENCY TELEPHONE NO. (617) 679-5938	FORMULAS N.A. (Mixture)	
Revised 7/16/87		

Section III — HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS

PROMENTS	%	TLV (Units)	SOLVENTS	PEL	%	TLV (Units)
N.A.			Mineral Spirits (Paint Thinner) CAS NO: 64741-41-9	100	61	500
CATALYST N.A.						
VEHICLE N.A.						
			ADDITIVES & OTHERS N.A.	-		
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES					%	TLV (Units)
N.A.						

Section III — PHYSICAL DATA

BOILING POINT (°F)	Range	316-411°F	SPECIFIC GRAVITY (H ₂ O = 1)	0.88
VAPOR PRESSURE (mm Hg.)		1-5	PERCENT. VOLATILE BY VOLUME (%)	68
VAPOR DENSITY (AIR = 1)		Heavier	EVAPORATION RATE Ethere — "1)	Slower
SOLUBILITY IN WATER		Negligible		
APPEARANCE AND ODOR		Clear thin liquid, mild odor, amber color		

Section IV — FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED)	101°F T.C.C.	FLAMMABLE LIMITS	LEL	UEL
			0.8	6
EXTINGUISHING MEDIA	Carbon Dioxide, Dry Chemical, Foam or Water Fog.			

SPECIAL FIRE FIGHTING PROCEDURES

A straight water stream would spread hydrocarbon fires. Closed containers may be cooled with water. Avoid breathing vapors. Use fresh air respirators.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Combustible liquid. A vapor accumulation would flash and/or explode if ignited. Closed containers may explode if subjected to extreme heat. Soaked rags subject to spontaneous combustion.

Section V — HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

See Section II

EFFECTS OF OVEREXPOSURE

Excessive Inhalation - Causes impaired coordination, respiratory irritation, dizziness, weakness and nausea.

Causes EYE Irritation, drying of SKIN.

Systemic Effect: Respiratory tract irritation. Central nervous system depression in high concentrations.

CONTINUED ON PAGE 2

EMERGENCY AND FIRST AID PROCEDURES

Eye Contact: Wash immediately with a gentle stream of water for 15 minutes. Send medical help.

Skin Contact: Wash with mild soap and water. Seek medical attention.

Inhalation: Remove to fresh air. Apply artificial respiration. If breathing stops, seek immediate medical attention.

Ingestion: Do not induce vomiting. Call a physician immediately.

Section VI — REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Avoid heat, sparks, flame and other sources of ignition.

INCOMPATIBILITY (Reactive to Avers)

Avoid strong oxidizing agents. Strong acids, bases and selected amines.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon Monoxide, Carbon Dioxide and possibly Acrolein and Oxides of Nitrogen may yield when thermally decomposed.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	Strong oxidizing agents

Section VII — SPILL OR LEAK PROCEDURES**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Extinguish sources of ignition. Ventilate to prevent buildup of vapors. Large spills can be taken with inert materials such as sawdust, sand, earth, clay and shovelled into containers for disposal. Prevent run-off to sewers, streams and or other bodies of water. Small amounts of spilled material may be absorbed into an appropriate absorbent.

WASTE DISPOSAL METHOD

Discard in sealed metal container in accordance with local regulations. Soak clean up rags in water to avoid spontaneous combustion.

Section VIII — SPECIAL PROTECTION INFORMATION**RESPIRATORY PROTECTION (Chemical Type)**

IC-23C-75

Use air supplied respirator for work in confined spaces.

VENTILATION	LOCAL EXHAUST	Yes	SPECIAL	N.A.
	MECHANICAL (General)	Yes	OTHER	Adequate Ventilation

PROTECTIVE GLOVES

If needed to avoid skin contact.

EYE PROTECTION

Goggles or safety glasses - avoid eye contact.

OTHER PROTECTIVE EQUIPMENT

Eye bath and safety shower. Rubber shoes or boots, coveralls and/or rubber apron.

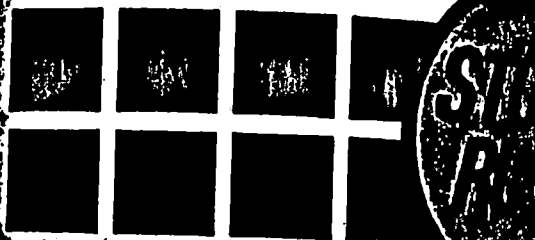
Section IX — SPECIAL PRECAUTIONS**PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING**

Keep container closed and upright when not in use. Do not transfer to an unmarked container. Read all warning labels. Store in cool, well-ventilated area away from heat or flame.

OTHER PRECAUTIONS

Keep out of reach of children. Soaked rags subject to spontaneous combustion. If ingested, do not induce vomiting. Call a physician immediately.

RUST-O



STAIN
RESISTANT

PROTECTIVE

LEATHER BR

CAUTION!
COMBUSTIBLE
See Precautions On Back Panel.



NOBODY FIGHTS RUST LIKE RUST-OLEUM!

- Rust-OLEUM Prevents Rust
- Excellent Chip and Peel Resistance
- Outstanding Color and Gloss
- Brush Strains Shapable

RECOMMENDATION: Rust-OLEUM PROTECTIVE COATINGS provide excellent rust prevention when properly applied. For best results, use a Rust-OLEUM Primer first. Rust-OLEUM PROTECTIVE COATINGS are available in many colors.

SURFACE

- Heavily Rusted Metal
- Clean, Lightly Rusted or Painted Metal
- Galvanized Metal or Aluminum

RUST-OLEUM PRIMER

- 7700° Rusty Metal Primer
- Rust-OLEUM Rust Primer
- Clean Metal Primer
- Galvanized Metal Primer

DIRECTIONS

PREPARE: Use when temperature is above 50°F (10°C) and humidity is below 90% to ensure proper drying.

REMOVE THE SURFACE: Remove loose rust and loose paint with a wire brush or sandpaper. Wash with soap and water, clean, and let dry completely.

TEST FOR RUST: This material, only if necessary, with Rust-OLEUM THINNEACLEANER, clean the surface thoroughly. This material, only if necessary, with Rust-OLEUM THINNEACLEANER, clean the surface thoroughly. This material, only if necessary, with Rust-OLEUM THINNEACLEANER, clean the surface thoroughly.

APPLY: Apply paint with a good quality brush, roller or spray gun. If using brush or roller, apply in thin coats to ensure proper coverage and the smoothest finish. If using a spray gun, follow the manufacturer's instructions for application.

DRYING: For additional protection, recoat after 24 hours.

STORAGE: Store in 77°F (25°C) - 80% Relative Humidity. Open to touch in 2 - 4 hours, to handle in 6 - 8 hours.

CLEANUP: Clean brush, roller and other utensils with Rust-OLEUM THINNEACLEANER or paint thinner.

PRECAUTIONS: May be used on children's toys, furniture, etc.

WARNING: CONTAINS PETROLEUM DISTILLATES. Keep away from heat, sparks and open flames. Do not use near open windows and doors or use other means to ensure fresh air only during use.

SYMPTOMS: If you experience eye watering, headache or dizziness, increase fresh air circulation. If you experience respiratory irritation, use a respirator (NIOSH/MSHA TC 23C or equivalent), or wear a mask. Clean container after each use. Avoid contact with skin.

FIRST AID: If paint gets in eyes, flush with water and call a physician immediately. **DO NOT** take internally. **KEEP OUT OF REACH OF CHILDREN.**

ANALYSIS:

Iron Oxide	50.1%
Lead Oxide	37.3%
Zinc Oxide	8.9%
Carbon Pigment	4.9%
Other Additives	1.4%
Total Solids	100.0%

We stand behind our products. If, for any reason, you are dissatisfied with a Rust-Oleum product, please contact our Consumer Relations Department.

RUST-OLEUM CORPORATION

11 Hawthorn Place • Green Mt., N. H. 03041

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MATERIAL SAFETY DATA SHEETS
For Coatings, Resins and Related Materials

SECTION 1

MANUFACTURER:
Rust-Oleum Corporation
11 Hawthorn Parkway • Vernon Hills, IL 60061
ADDRESS:
EMERGENCY AND
INFORMATION TELEPHONE:
(312) 367-7700 (8:00 a.m. - 5:00 p.m. CD7)
EMERGENCY TELEPHONE:
(312) 864-8200 (After Business Hours and on V

SECTION II - HAZARDOUS INGREDIENTS

PRODUCT CLASS: Alkyd Resin - High Gloss Enamel
MFG. CODE NO.: 7434, 7433, 7448, 7458, 7465,
7715, 7722, 7726, 7727, 7734, 7736,
7739, 7743, 7745, 7765, 7770, 7771,
7775, 7779, 7786 and 7792
TRADENAME: Topcoat - Brush Goods
DATE OF PREPARATION: October 1, 1987 (MJS)

SECTION III - PHYSICAL DATA

Baking Range: 307-323°F (153-162°C)
Evaporation Rate: lower
(Est. = 1)
(by vol.)
Vapor Density: heavier
% Volatile: 58-60% Wt./Vol.: 7.5-8.0%
MEL. NA.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Special Fire-Fighting Procedures: Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. Water may be used to cool closed containers to prevent pressure buildup and possible explosion or explosion. If water is used, fog nozzles are preferred.

Immediate Fire and Explosion Hazard: Keep containers tightly closed. Isolate from heat. Isolate equipment, tanks and open flames. Closed containers may explode when exposed to extreme heat. DO NOT apply to hot surfaces.

SECTION II - HAZARDOUS INGREDIENTS

PRODUCT CLASS: Alkyd Resin - Flat Enamel
MFG. CODE NO.: 7778 and 7791
TRADE NAME: Topcoats - Brush Goods
DATE OF PREPARATION: October 1, 1967 (MJS)

SECTION III - PHYSICAL DATA

Boiling Range: 307-309° (152-158°C)
Evaporation Rate: slow
(litm = 1)
(pH = 1)
Vapor Density: heavier than air
% Volatile: 51-52 wt./vol.: 11.5-12.5 wt.
(pH = 1)
Litm = 1

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

"Community Class/Student OSHA Class 8 - Construction Labor Participant: 1004 (1004)
 Class/Student: General Community Class-8

SECTION II - HAZARDOUS INGREDIENTS

PRODUCT CLASS: Alkyd Resin - Semi-gloss Enamel
MFG. CODE NO.: 7746, 7758, 7759, 7768, 7771, 7784, 7791 and 7794
TRADE NAME: Topcoats - Brush Goods
DATE OF PREPARATION: October 1, 1987 (MJS)

SECTION III - PHYSICAL DATA

Boiling Range: 307-385° (153-196°C)
Evaporation Rate: faster slower
(Water = 1)
(97 vol.)
Wt./Vol.: 24-25% Wt./Vol.: 8-10.7
Wt.: NA
Lighter than

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

DOT Classification: DOT Class B Compressed Gases (Carbon dioxide, dry chemical or foam)
Extinguishing Media: Water Class B Compressed Gases (Carbon dioxide, dry chemical or foam)
Special Fire-fighting Procedures: Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. Water may be used in limited quantities to prevent pressure buildup and possible explosion or explosion. If water is used, fog nozzles are preferred.
Unusual Fire and Explosion Hazards: Keep containers tightly closed. Isolate from all electrical equipment, gases and open flame. Closed containers may explode when exposed to extreme heat. DO NOT apply to hot surfaces.

SECTION II - HAZARDOUS INGREDIENTS

PRODUCT CLASS: Alkyd Resin - Primer
MFG. CODE NO.: 7769 and 7773
TRADE NAME: Rusty Metal & Clean M
Brush Goods
DATE OF PREPARATION: October 1, 1987 (MJS)

SECTION III - PHYSICAL DATA

Building Range: 307-308 (153-154-C)
Evaporation Rate: None
(Elev = 1)
(Dry wt.)
Vapor Density: None
Wt./Vol.: 57-58
PH: NA

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

IDENTIFICATION CLASSIFICATION CODE: UNCLASSIFIED
DOT Classification: Domestic Community Only

Special Pre-Washing Procedures: Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. Water may be used, fog nozzles are preferred.

Unusual Fire and Explosion Hazards: Keep containers tightly closed. Hazards from electrical equipment, sparks and open flame. Closed containers may explode - exposed to extreme heat. DO NOT apply to hot surfaces.

Figure 10-10

Special Fire-fighting Procedures: Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. Water may be used on cool closed containers to prevent pressure buildup and possible explosion or rupture. If water is used, fog nozzles are preferred.

Unusual Fire and Explosion Hazards: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat. DO NOT apply to hot surfaces.

SECTION V — HEALTH HAZARD DATA

Effects of Overexposure:

Acute (Inhalation): Harmful if inhaled. May affect the brain or nervous system, causing dizziness, headache or nausea. Repeated overexposures may progressively lead to staggering gait, confusion, unconsciousness or coma. Causes nose and throat irritation.

Acute (Skin or Eye Contact): Causes skin and eye irritation which can lead to dermatitis with repeated overexposures.

Ingestion: Gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic: Reports have shown repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. NTP and IARC consider zinc chromate a probable animal carcinogen through injection studies. The greatest risk to humans is through spray application. Follow recommendations for proper respiratory protection. Overexposure to Xylol in lab animals has shown liver abnormalities, kidney, lung, spleen and eye damage as well as anemia. Effects in humans have shown liver and cardiac abnormalities.

Emergency and First Aid Procedures:

Inhalation: Remove from exposure, restore breathing and notify a physician.

Eye Contact: Flush immediately with large amounts of water for at least 15 minutes. Notify a physician.

Skin Contact: Wash affected area with soap and water, remove contaminated clothing and wash before reuse.

Ingestion: DO NOT induce vomiting. Keep person warm, quiet and get medical attention. Aspiration of this material into the lungs can cause chemical pneumonitis which can be fatal.

SECTION VI — REACTIVITY DATA

Stability: Unstable Stable

Incompatible: With Strong Oxidizing Agents

Hazardous Decomposition Products: By Open Flame — Carbon Monoxide and Carbon Dioxide

Hazardous Polymerization: Will Not Occur

SECTION VII — SPILL OR LEAK PROCEDURES

Release or Spill Procedures: Remove all sources of ignition, ventilate area and remove with inert absorbent and nonsparking tools.

Waste Disposal Method: Dispose of according to local, state and federal regulations. DO NOT incinerate closed containers.

SECTION VIII — SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use NIOSH approved chemical cartridge respirator (TC23C) to remove solid airborne particles of overspray and organic vapors during spray application. In Confined Areas: Use NIOSH approved supplied-air respirators or hoods (TC19C).

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other Protective Equipment: Use impervious gloves and/or clothing to prevent skin contact.

Ventilation: Provide general dilution or local exhaust ventilation in volume and pattern to keep TLV of hazardous ingredients below acceptable limits.

SECTION IX — SPECIAL PRECAUTIONS

Handling and Storage Precautions: Do not store above 120°F. Store large quantities in buildings designed and protected for storage of NFPA Class II Combustible liquids. Containers should be grounded when pouring.

Other Precautions: DO NOT use internally. Empty containers may be hazardous.

RUST-OLEUM

**STOPS
RUST®**
BRAND

**CLEAN METAL
PRIMER**



**Inhibits Rust On Clean,
Slightly Rusty, Or Painted Metal**

**DANGER: EXTREMELY FLAMMABLE CONTENTS
UNDER PRESSURE. VAPOR HARMFUL.
See Precautions On Back Panel.**

Net Wt. 12 Oz (340 Grams)

Galvanized Metal or Aluminum
Automobiles

Galvanized Metal Primer
Rust-Oleum Auto Primers

For maximum rust prevention and a smooth, durable finish, topcoat with a Rust-Oleum PROTECTIVE COAT.

DIRECTIONS

GETTING READY: Use outdoors, or in a well-ventilated area, when temperature is above 50°F (10°C) and humidity is below 85% to ensure proper drying. Avoid spraying in very windy or dusty conditions. Cover nearby objects to protect from spray mist.

PREPARING THE SURFACE: Remove loose rust and loose paint with a wire brush or sandpaper. Lightly sand glossy surfaces. Clean with soap and water, rinse, and let dry completely.

PRIMING: Shake well for at least one minute after mixing balls begin to rattle. Shake often during use. Line up arrow on spray button with mark on can. Hold can upright 12" to 18" from surface. Spray, using a steady back-and-forth

NONLEADED — May be used on children's toys, furniture, etc.

CAUTION: CONTAINS TOLUOL AND XYLOL. Keep away from heat, sparks and flame, including pilot lights and cigarettes. Avoid overexposure to vapors. To avoid breathing vapors or spray mist, open windows and doors or use other means to ensure fresh air entry during application and drying. If you experience eye watering, headaches or dizziness, increase fresh air or wear respiratory protection (NIOSH/MSHA TC 23C or equivalent), or leave the area. Close container after each use. Avoid contact with skin. **DO NOT** puncture or incinerate.

FIRST AID: If sprayed in eyes, flush with water and call a physician immediately. **DO NOT** take internally.

NOTICE: Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.

KEEP OUT OF REACH OF CHILDREN.

We stand behind our products. If, for any reason, you are dissatisfied with a Rust-Oleum product, please contact our Consumer Relations Department.

**RUST-OLEUM
CORPORATION**

11 Hawthorn Pkwy. • Vernon Hills, IL 60061

CHP 7773-308

MATERIAL SAFETY DATA SHEETS

For Coatings, Resins and Related Materials

SECTION I

MANUFACTURER: Rust-Oleum Corporation
ADDRESS: 11 Hawthorn Parkway • Vernon Hills, IL 60061
EMERGENCY AND INFORMATION TELEPHONE: (312) 367-7700 (8:00 a.m. - 5:00 p.m. CDT)
EMERGENCY TELEPHONE: (312) 864-8200 (After Business Hours and on Weekends)

PRODUCT CLASS: Aerosol
MFG. CODE NO.: 7424, 7434, 7443, 7448, 7458, 7466, 7701, 7722, 7726, 7727, 7734, 7736, 7738, 7743, 7744, 7745, 7765, 7768, 7769, 7770, 7771, 7773, 7775, 7778, 7777, 7778, 7779, 7786, 7790, 7791, 7792, 7794, 7881, 7882, 7883, 7884, 7885 and 7886

TRADE NAME: Topcoats, Primers, Machinery and Implement, Bar-B-Q Black and Epoxy Enamels

DATE OF PREPARATION: September 30, 1987 (MJS)

SECTION II — HAZARDOUS INGREDIENTS

INGREDIENT/CAS No.	WT. %	ACGIH-TLV	OSHA-PEL	LEL	mm Hg @ 20°C
Xylol/1330-20-7	10-25%	100ppm	100ppm	1.0%	9.5
Toluene/108-88-3	10-25%	100ppm	200ppm	1.2%	22.0
Diethylamine/107-11-9	5%	100ppm	500ppm	1.0%	2.0
Hydrocarbons/68-98-9	3%	NE	100ppm	1.0%	4.0
Propylene Glycol/107-11-9	1%	200ppm	200ppm	2.1%	15.0
Propane/44-79-6	25%	100ppm	NE	1.5%	52ppm
Butane/106-97-8	0-15%	10ppm	10ppm	NA	NA
Titanium Dioxide/13463-67-7	0-15%	10ppm	10ppm	NA	NA

*Nearest 5% **Ingredient in 7778 Bar-B-Q Black only. ***Ingredient in 7779 Black only.
****Ingredient in 7773 Clean Metal Primer only. NE - Not Established NA - Not Applicable

SECTION III — PHYSICAL DATA

Boiling Range: Below 0°F Vapor Density: heavier lighter than air
Evaporation Rate (Ether = 1): faster slower % Volatile (by vol.): NA WT./Gal.: NA
pH: NA

SECTION IV — FIRE AND EXPLOSION HAZARD DATA

Flammability Classification: Extremely Flammable Flashpoint: Below 0°F (TCC)
DOT Classification: Consumer Commodity ORM-D
Extinguishing Media: NFPA Class B Extinguishers (carbon dioxide, dry chemical or foam)

Special Fire-Fighting Procedures: Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. If water is used, fog nozzles are preferred.

Unusual Fire and Explosion Hazards: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat. DO NOT apply to hot surfaces.

PRODUCT CLASS: Aerosol
MFG. CODE NO.: 2564, 2578, 2579, 2590 and 2592
TRADE NAME: Speedy Dry Topcoats
DATE OF PREPARATION: September 30, 1987 (MJS)

SECTION II — HAZARDOUS INGREDIENTS

INGREDIENT/CAS No.	WT. %	ACGIH-TLV	OSHA-PEL	LEL	mm Hg @ 20°C
Xylol/1330-20-7	10-20%	100ppm	100ppm	1.0%	9.5
Toluene/108-88-3	10-25%	100ppm	200ppm	1.2%	22.0
VM&P Naphthalene/4742-89-6	5-10%	300ppm	500ppm	0.9%	2.0
Ethylene Glycol Butyl Ether/111-76-2	1-5%	25ppm	50ppm	1.1%	0.5
Xylol/1330-20-7	10-20%	100ppm	100ppm	1.0%	9.5
Methyl Ethyl Ketone/78-93-3	0-3%	200ppm	300ppm	2.0%	70.0
Propane/44-79-6	25%	100ppm	NE	1.5%	52ppm
Butane/106-97-8	0-15%	10ppm	10ppm	NA	NA
Titanium Dioxide/13463-67-7	0-15%	10ppm	10ppm	NA	NA

*Nearest 5% NE - Not Established NA - Not Applicable

SECTION III — PHYSICAL DATA

Boiling Range: Below 0°F Vapor Density: heavier lighter than air
Evaporation Rate (Ether = 1): faster slower % Volatile (by vol.): NA WT./Gal.: NA
pH: NA

SECTION IV — FIRE AND EXPLOSION HAZARD DATA

Flammability Classification: Extremely Flammable Flashpoint: Below 0°F (TCC)
DOT Classification: Consumer Commodity ORM-D
Extinguishing Media: NFPA Class B Extinguishers (carbon dioxide, dry chemical or foam)

Special Fire-Fighting Procedures: Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. If water is used, fog nozzles are preferred.

Unusual Fire and Explosion Hazards: Keep containers tightly closed. Isolate from heat.

PRODUCT CLASS: Aerosol
MFG. CODE NO.: 2500, 2510, 2515, 7710, 7712, 7713, 7714, 7715 and 7718

TRADE NAME: Metallic Topcoats

DATE OF PREPARATION: October 5, 1987 (MJS)

SECTION II — HAZARDOUS INGREDIENTS

INGREDIENT/CAS No.	WT. %	ACGIH-TLV	OSHA-PEL	LEL	mm Hg @ 20°C
Xylol/1330-20-7	25%	100ppm	100ppm	1.0%	9.5
Toluene/108-88-3	50-60%	100ppm	200ppm	1.2%	22.0
Propane/44-79-6	30%	100ppm	NE	1.5%	52ppm

(Propane, Butane, Isobutane)

*Nearest 5% **Ingredient in 7713 only. NE - Not Established NA - Not Applicable

SECTION III — PHYSICAL DATA

Boiling Range: Below 0°F Vapor Density: heavier lighter than air
Evaporation Rate (Ether = 1): faster slower % Volatile (by vol.): NA WT./Gal.: NA
pH: NA

SECTION IV — FIRE AND EXPLOSION HAZARD DATA

Flammability Classification: Extremely Flammable Flashpoint: Below 0°F (TCC)
DOT Classification: Consumer Commodity ORM-D
Extinguishing Media: NFPA Class B Extinguishers (carbon dioxide, dry chemical or foam)

Special Fire-Fighting Procedures: Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. If water is used, fog nozzles are preferred.

Unusual Fire and Explosion Hazards: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flame. Closed containers may explode when exposed to extreme heat. DO NOT apply to hot surfaces.

PRODUCT CLASS: Aerosol
MFG. CODE NO.: 7785
TRADE NAME: ZINC-SELE® Cold Galvanizing Compound
DATE OF PREPARATION: October 5, 1987 (MJS)

SECTION II — HAZARDOUS INGREDIENTS

INGREDIENT/CAS No.	WT. %	ACGIH-TLV	OSHA-PEL	LEL	mm Hg @ 20°C
Xylol/1330-20-7	5%	100ppm	100ppm	1.0%	9.5
Toluene/108-88-3	25%	100ppm	200ppm	1.2%	22.0
Mineral Spirits/6852-41-3	2%	100ppm	500ppm	1.0%	2.0
Propane/44-79-6	15%	100ppm	NE	1.5%	52ppm

(Propane, Butane, Isobutane)

*Nearest 5% NE - Not Established NA - Not Applicable

SECTION III — PHYSICAL DATA

Boiling Range: Below 0°F Vapor Density: heavier lighter than air
Evaporation Rate (Ether = 1): faster slower % Volatile (by vol.): NA WT./Gal.: NA
pH: NA

SECTION IV — FIRE AND EXPLOSION HAZARD DATA

Flammability Classification: Extremely Flammable Flashpoint: Below 0°F (TCC)
DOT Classification: Consumer Commodity ORM-D
Extinguishing Media: NFPA Class B Extinguishers (carbon dioxide, dry chemical or foam)

Special Fire-Fighting Procedures: Full protective equipment including self-contained breathing apparatus should be used. Water spray may be ineffective. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion. If water is used, fog nozzles are preferred.

Unusual Fire and Explosion Hazards: Keep containers tightly closed. Isolate from heat.

SECTION V — HEALTH HAZARD DATA

Effects of Overexposure:

Acute (Inhalation): Harmful if inhaled. May affect the brain or nervous system, causing dizziness, headache or nausea. Repeated overexposures may progressively lead to staggering gait, confusion, unconsciousness or coma. Causes nose and throat irritation.

Acute (Skin or Eye Contact): Causes skin and eye irritation which can lead to dermatitis with repeated overexposures.

Ingestion: Gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic: Reports have shown repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Overexposure to Xylol and Toluene in lab animals has shown liver abnormalities, kidney, lung, spleen and eye damage as well as anemia. Effects in humans have shown liver and cardiac abnormalities. Overexposure to Ethylene Glycol Butyl Ether has shown blood abnormalities in lab animals.

Emergency and First Aid Procedures:

Inhalation: Remove from exposure, restore breathing and notify a physician.

Eye Contact: Flush immediately with large amounts of water for at least 15 minutes. Notify a physician.

Skin Contact: Wash affected area with soap and water, remove contaminated clothing and wash before reuse.

Ingestion: DO NOT induce vomiting. Keep person warm, quiet and get medical attention. Aspiration of this material into the lungs can cause chemical pneumonitis which can be fatal.

SECTION VI — REACTIVITY DATA

Stability: Unstable Stable

Incompatible: With Strong Oxidizing Agents

Hazardous Decomposition Products: By Open Flame — Carbon Monoxide and Carbon Dioxide

Hazardous Polymerization: Will Not Occur

SECTION VII — SPILL OR LEAK PROCEDURES

Release or Spill Procedures: Remove all sources of ignition, ventilate area and remove with inert absorbent and nonsparking tools.

Waste Disposal Method: Dispose of according to local, state and federal regulations. DO NOT incinerate containers.

SECTION VIII — SPECIAL PROTECTION INFORMATION

Respiratory Protection: Use NIOSH approved chemical cartridge respirator (TC23C) to remove solid airborne particles of overspray and organic vapors during spray application. In Confined Areas: Use NIOSH approved supplied-air respirators or hoods (TC19C).

Eye Protection: Use safety eyewear designed to protect against splash of liquids.

Other Protective Equipment: Use impervious gloves and/or clothing to prevent prolonged skin contact.

Ventilation: Provide general dilution or local exhaust ventilation in volume and pattern to keep TLV of hazardous ingredients below acceptable limits.

SECTION IX — SPECIAL PRECAUTIONS

Handling and Storage Precautions: Do not store above 120°F. DO NOT puncture containers.

Other Precautions: Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

Klean-Strip

- For use with fiberglass, polyester, epoxy resins and adhesives.
- Quality Assured

Acetone

Special-purpose
thinner, cleaner
and remover.
Evaporates quickly.

DANGER! EXTREMELY FLAMMABLE.
HARMFUL IF SWALLOWED. VAPOR HARMFUL.
EYE IRRITANT. Read other cautions on back panel.
32 FL. OZ. (1 QT.) .946 LITER

DANGER! EXTREMELY FLAMMABLE. KEEP AWAY FROM HEAT, SPARKS, FLAME AND ALL OTHER SOURCES OF IGNITION. VAPORS MAY CAUSE FLASH FIRE OR MIGHT BE EXPLOSIVE. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and all other sources of ignition during use and until vapors are gone. Beware of static electricity that may be generated by synthetic clothing and other sources.

Whenever possible, use outdoors in an open air area. Do not use in areas where vapors can accumulate and concentrate such as basements, bathrooms or small enclosed areas. **USE ONLY WITH ADEQUATE VENTILATION** - to prevent buildup of vapors. Open all windows and doors. Use only with a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea or eye-watering — **STOP** — ventilation is inadequate. Leave area immediately.

DANGER! Harmful if swallowed. Vapor harmful. Eye irritant. Contains Acetone. Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage. For further information, refer to the Material Safety Data Sheet.

Do not take internally. Avoid prolonged or repeated breathing of vapors or spray mist. Avoid contact with eyes or prolonged contact with skin. Prolonged contact with skin may cause irritation. Rinse off skin after use. Close container after each use. Do not reuse this container in OSHA controlled work place and other regular users - Use only with adequate ventilation or engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for solvent vapors. A dust mask does not provide protection against vapors.

FIRST AID - IF SWALLOWED, call your poison control center, hospital emergency room or physician immediately for instructions. **IN CASE OF EYE CONTACT,** immediately flush with water for at least 15 minutes. Get medical attention.

KEEP OUT OF REACH OF CHILDREN

Klean-Strip Acetone 100% pure.

This strong, fast-acting solvent is a thinner and remover for specified coatings, including polyester and epoxy resins, ink, adhesives and contact cement.

Klean-Strip Acetone is an effective cleanup solvent after the completion of a fiberglass project, for removal of excess fiberglass resin or foreign material from solvent-tolerant surfaces.

Use only as specified by the coating, adhesive, or hobby product manufacturer.

Important! Do not use as a general-purpose cleaner.

Acetone may soften or damage plastics, synthetics, and many other finishes. Use only where specified, and test an inconspicuous area before application.

NON-PHOTOCHEMICALLY REACTIVE
MAX V.O.C. - 788 grams per liter
MAX Vapor Pressure - 266mm Hg at 20°C

Klean-Strip Div. W. M. Barr, Inc. Memphis, TN 38101-1879

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W A I E B I A L S A F E I Y D A I A S H E I

DATE PREPARED: 10/01/85

MANUFACTURER: KLEAN-STRIP, DIVISION OF

W.M. BARR & COMPANY

2105 CHANNEL AVENUE

P.O. BOX 1879

MEMPHIS, TENNESSEE

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JEAN MELTON

LOWE'S COMPANIES

P. O. BOX 1111

1 NORTH WILKESBORO, NC 28656-1

SECTION I - PRODUCT IDENTIFICATION

FORMULA NUMBER: 1640

PRODUCT NUMBER: AC-18

PRODUCT NAME : ACETONE KLEAN STRIP

PRODUCT CLASS : SOLVENT-THINNER

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT

CAS#

PERC

WT

OCCUPATIONAL

EXPOSURE LIMITS

VAPOR

PC

1. ACETONE

STEL for acetone is 1000 ppm. NIOSH

recommends a 10 hour exposure

limit of 250 ppm for acetone.

SECTION III - PHYSICAL DATA

BOILING RANGE: 133 F

EVAPORATION RATE: Slower than Ether.

VAPOR DENSITY: Heavier than Air.

LBS/Gal :

6.570

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASS: OSHA-Class 1B

FLASH POINT: OF Set

LEL: 2.6

DOT-Flammable Liquid.

EXTINGUISHING MEDIA: Use Carbon Dioxide, Dry Powder or Foam.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Keep container tightly closed. Isolate from heat, electrical equipment, sparks, open flames and hot surfaces.

SPECIAL FIREFIGHTING PROCEDURES: Self-contained respiratory protection should be provided for firefighters fighting fires in buildings or confined areas. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up.

SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: Inhalation -X Ingestion -X Dermal -X

EFFECTS OF OVEREXPOSURE - SHORT TERM EFFECTS:

INHALATION - May cause irritation of respiratory tract, headache, dizziness,

nausea and unconsciousness. Intentional misuse of this product by deliberately

INGESTION - Not determined.

IN CONTACT - May cause drying of skin.

EYE CONTACT - May cause eye damage.

EFFECTS OF OVEREXPOSURE - LONG TERM EFFECTS:

Prolonged or repeated contact may cause dermatitis. Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY OVEREXPOSURE: None recognized.

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION - If user experiences breathing difficulty, move to air free of vapors. Administer oxygen or artificial respiration until medical assistance can be rendered.
INGESTION - Call your hospital emergency room, poison control center or physician immediately for instructions.
SKIN CONTACT - Wash with soap and large quantities of water and seek medical attention if irritation from contact persists.
EYE CONTACT - Flush with large quantities of water for at least 15 minutes and seek immediate medical attention.

SECTION VI - REACTIVITY DATA

STABILITY: Stable.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: None recognized.

COMPATIBILITY (MATERIAL TO AVOID): Strong oxidizing agents.

SECTION VII - SPILL AND LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Avoid breathing vapors. Ventilate area. Flush large spills of material into suitable retaining area or containers with large quantities of water. Small spills can be absorbed by appropriate inert absorbent.

WASTE DISPOSAL: Dispose in accordance with applicable local, state and federal regulations.

SECTION VIII - SPECIAL PRECAUTION INFORMATION

RESPIRATORY PROTECTION: For OSHA controlled work place, use only with adequate ventilation under engineered air control systems designed to provide maximum appropriate TLV. For occasional use where engineered air control is not feasible, use NIOSH approved respirators. For occasional consumer use, use only with adequate ventilation.

VENTILATION: Adequate ventilation must be provided. See respiratory protection above.

PROTECTIVE GLOVES: Use impermeable gloves to prevent skin irritation.

PROTECTION: Safety glasses, chemical goggles and/or face shields are recommended to safeguard against potential eye contact, irritation or injury.

OTHER PROTECTIVE EQUIPMENT: Varying application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc.

HYGIENIC PRACTICES: Wash hands thoroughly after use.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Do not store near flames or at elevated temperatures.

OTHER PRECAUTIONS: Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to local regulations.

NOTE: THE INFORMATION CONTAINED HEREIN IS FURNISHED WITHOUT WARRANTY OF ANY KIND. EMPLOYERS SHOULD USE THIS INFORMATION ONLY AS A SUPPLEMENT TO OTHER INFORMATION GATHERED BY THEM AND MUST MAKE INDEPENDENT DETERMINATION OF SUITABILITY AND COMPLETENESS OF INFORMATION FROM ALL SOURCES TO ASSURE PROPER USE OF THESE MATERIALS AND THE SAFETY AND HEALTH OF EMPLOYEES. ANY USE OF THIS DATA AND INFORMATION MUST BE DETERMINED BY THE USER TO BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

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LOWE'S

Odorless Mineral Spirits

Premium grade.
Thins paint.
Cleans wood, metal.

DANGER!

HARMFUL OR FATAL IF SWALLOWED. COMBUSTIBLE.

Read other cautions on back panel

32 FL. OZ. (1 QT.) .948 LITER

EXTREMELY COMBUSTIBLE. KEEP AWAY FROM HEAT, SPARKS, FLAME AND ALL SOURCES OF IGNITION.

USE ONLY WITH ADEQUATE VENTILATION - to prevent buildup of vapors and odor is noticed or you experience slight dizziness, headache, nausea, or watering — **STOP** — ventilation is inadequate. Leave area immediately. **USPEN** Harmful or fatal if swallowed. Contains Petroleum Distillate. Reports indicate repeated and prolonged overexposure to solvents with neurological or physiological damage. For further information, refer to the Material Safety Sheet, R-1333.

Do not take internally. Avoid prolonged or repeated breathing of vapors or spray mist. Do not have contact with eyes or prolonged contact with skin. Prolonged contact with skin may cause irritation. Rinse off skin after use. Close container after use. Use. Do not reuse this container. For OSHA controlled work place and other regular users - Use only with adequate ventilation. For engineered air control systems designed to prevent exceeding appropriate TLV. For occasional use, where engineered air control is not feasible, use properly maintained and properly fitted NIOSH approved respirator for solvent vapors. A dust mask does not protect against vapors.

First Aid - IF SWALLOWED, do not induce vomiting. Call your poison control center, hospital emergency room or physician immediately. **-IN CASE OF EYE CONTACT**, immediately flush with water for at least 15 minutes. If irritation persists, seek medical attention.

KEEP OUT OF REACH OF CHILDREN

Lean Strip Odorless Mineral Spirits

Min Strip Odorless Mineral Spirits is an excellent cleaner and degreaser for most wood and metal surfaces to remove a buildup of fingerprints, grease, dirt, and grime. **Min Strip** also removes old oil based paint and varnish, and can be used to strip wood to clean the surface before the application of a new finish. (Allow the surface to dry before applying a new finish.)

Follow the paint product manufacturer's instructions for the proper use of Mineral Spirits required; do not use more than recommended. Mineral Spirits actively cleans brushes and equipment immediately after use. The longer they are allowed to set, the harder they are to clean. Clean brushes and equipment immediately after use to keep them in their best condition.

1. Introduction

Do not use as a thinner for water based paint, latex coatings, lacquers, etc.

NON-PHOTOCHEMICALLY REACTIVE
MAX V.O.C. - 765 grams per liter
MAX Vapor Pressure - 2mm Hg at 20°C

Free-Strip Div. W. M. Barr, Inc. Memphis, TN 38101-1670

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EYE CONTACT - May cause irritation.

EFFECTS OF OVEREXPOSURE - LONG TERM EFFECTS:

May cause skin irritation on prolonged or repeated contact. Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY OVEREXPOSURE: None recognized.

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION - If user experiences breathing difficulty, move to air free of vapors. Administer oxygen or artificial respiration until medical assistance can be rendered.

INGESTION - DO NOT induce vomiting. Call your poison control center, hospital emergency room or physician immediately.

EYE CONTACT - Flush with large quantities of water for at least 15 minutes. If irritation from contact persists, get medical attention.

SECTION VI - REACTIVITY DATA

STABILITY: Stable.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and carbon dioxide.

INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizing agents.

SECTION VII - SPILL AND LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Avoid breathing vapors. Ventilate area. Flush large spills of material into suitable retaining area or containers with large quantities of water. Small spills can be absorbed by appropriate inert absorbent.

WASTE DISPOSAL: Dispose in accordance with applicable local, state and federal regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: For OSHA controlled work place, use only with adequate ventilation under engineered air control systems designed to provide maximum appropriate TLV. For occasional use where engineered air control is not feasible, use NIOSH approved respirators. For occasional consumer use, use only with adequate ventilation.

VENTILATION: Adequate ventilation must be provided. See respiratory protection above.

PROTECTIVE GLOVES: Use impermeable gloves to prevent skin irritation.

EYE PROTECTION: Safety glasses, chemical goggles and/or face shields are recommended to safeguard against potential eye contact, irritation or injury.

OTHER PROTECTIVE EQUIPMENT: Varying application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc.

HYGIENIC PRACTICES: Wash hands thoroughly after use.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Do not store near flames or at elevated temperatures.

OTHER PRECAUTIONS: Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to local regulations.

NOTE: THE INFORMATION CONTAINED HEREIN IS FURNISHED WITHOUT WARRANTY OF ANY KIND. EMPLOYERS SHOULD USE THIS INFORMATION ONLY AS A SUPPLEMENT TO OTHER INFORMATION GATHERED BY THEM AND MUST MAKE INDEPENDENT DETERMINATION OF SUITABILITY AND COMPLETENESS OF INFORMATION FROM ALL SOURCES TO ASSURE PROPER USE OF THESE MATERIALS AND THE SAFETY AND HEALTH OF EMPLOYEES. ANY USE OF THIS DATA AND INFORMATION MUST BE DETERMINED BY THE USER TO BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

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- Cleans brushes and tools
- Quality Assured

Turpentine Steam Distilled

**Pure Spirits.
Thin oil-based
paint and varnish.**

DANGER! FLAMMABLE.
HARMFUL OR FATAL IF SWALLOWED. EYE IRRITANT.
Read other cautions on back panel.
32 FL. OZ. (1 QT.) .946 LITER

[illegible]

One-Strip Steam Distilled Turpentine is a pure spirit. One-Strip Steam Distilled Turpentine is an excellent thinner for oil based paint, varnish, enamel, and stain. Follow the paint product manufacturer's directions for the required amount; do not use more than recommended. Turpentine is also a very good cleaner for brushes and equipment immediately after use... the longer they are allowed to set, the harder they are to clean. Clean brushes and equipment immediately after use to keep them in their best condition.

Do not use as a general-purpose cleaner.
Do not use as a thinner for water based paint, latex coatings, lacquer, oil, or epoxy.

PHOTOCHEMICALLY REACTIVE
MAX V.O.C. - 854 grams per liter
MAX Vapor Pressure - 4mm Hg at 20°C

Strip Div. W. M. Barr, Inc. Memphis, TN 38101-1879

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EFFECTS OF OVEREXPOSURE - LONG TERM EFFECTS:

May cause skin irritation on prolonged or repeated contact. Reports have associated repeated and prolonged overexposure to solvents with neurological and other physiological damage.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY OVEREXPOSURE: None recognized.

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION - If user experiences breathing difficulty, move to air free of vapors. Administer oxygen or artificial respiration until medical assistance can be rendered.

INGESTION - DO NOT induce vomiting. Call your poison control center, hospital emergency room or physician immediately.

SKIN CONTACT - Wash with soap and water.

EYE CONTACT - Flush with large quantities of water for at least 15 minutes and seek immediate medical attention.

SECTION VI - REACTIVITY DATA

STABILITY: Stable.

HAZARDOUS POLYMERIZATION: Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS: None recognized.

INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizing agents.

SECTION VII - SPILL AND LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Avoid breathing vapors. Ventilate area. Flush large spills of material into suitable retaining area or containers with large quantities of water. Small spills can be absorbed by appropriate inert absorbent.

WASTE DISPOSAL: Dispose in accordance with applicable local, state and federal regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: For OSHA controlled work place, use only with adequate ventilation under engineered air control systems designed to provide maximum appropriate TLV. For occasional use where engineered air control is not feasible, use NIOSH approved respirators. For occasional consumer use, use only with adequate ventilation.

VENTILATION: Adequate ventilation must be provided. See respiratory protection above.

PROTECTIVE GLOVES: Use impermeable gloves to prevent skin irritation.

EYE PROTECTION: Safety glasses, chemical goggles and/or face shields are recommended to safeguard against potential eye contact, irritation or injury.

OTHER PROTECTIVE EQUIPMENT: Varying application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc.

HYGIENIC PRACTICES: Wash hands thoroughly after use.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Do not store near flames or at

MATERIAL SAFETY DATA SHEET

MANUFACTURER: KLEAN-STRIP, DIVISION OF
W.M. BARR & COMPANY
2105 CHANNEL AVENUE
P.O. BOX 1879
MEMPHIS, TENNESSEE

DATE PREPARED: 10/01/85

TELEPHONE NUMBER: (901) 775-0100

JEAN MELTON
LOWE'S COMPANIES
P. O. BOX 1111
NORTH WILKESBORO, NC 28656-1

SECTION I - PRODUCT IDENTIFICATION

FORMULA NUMBER: 1665
PRODUCT NUMBER: SD-81
PRODUCT NAME : STEAM DIST TURPENTINE KLEAN STRIP
PRODUCT CLASS : SOLVENT-THINNER

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	CAS#	PERC WT	OCCUPATIONAL EXPOSURE LIMITS		VAPOR PRESSURE	
			TLV	REL	MM	@C
1. TURPENTINE	8006-64-2	<100	100 ppm	100 ppm	4	20

SECTION III - PHYSICAL DATA

BOILING RANGE: 313 THRU 338 F
EVAPORATION RATE: Slower Than Ether.

VAPOR DENSITY: Heavier Than Air.
% VOLATILE: 99.4 LBS/Gal : 7.122

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASS: OSHA-Class IC
DOT-Flammable Liquid.

FLASH POINT: 91F
LEL: 0.8

EXTINGUISHING MEDIA: Use Carbon Dioxide, Dry Powder or Foam.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Keep container tightly closed. Isolate from heat, electrical equipment, sparks, open flames and hot surfaces.

SPECIAL FIREFIGHTING PROCEDURES: Self-contained respiratory protection should be provided for firefighters fighting fires in buildings or confined areas. Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up.

SECTION V - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY: Inhalation X Ingestion X Dermal X

EFFECTS OF OVEREXPOSURE - SHORT TERM EFFECTS:

INHALATION - May cause dizziness, headache, nausea and watering of eyes. Severe overexposure may cause unconsciousness and death.

INGESTION - May be harmful or fatal if ingested.

SKIN CONTACT - None expected.

EYE CONTACT - May cause irritation.

elevated temperatures.

OTHER PRECAUTIONS: Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to local regulations.

NOTE: THE INFORMATION CONTAINED HEREIN IS FURNISHED WITHOUT WARRANTY OF ANY KIND. EMPLOYERS SHOULD USE THIS INFORMATION ONLY AS A SUPPLEMENT TO OTHER INFORMATION GATHERED BY THEM AND MUST MAKE INDEPENDENT DETERMINATION OF SUITABILITY AND COMPLETENESS OF INFORMATION FROM ALL SOURCES TO ASSURE PROPER USE OF THESE MATERIALS AND THE SAFETY AND HEALTH OF EMPLOYEES. ANY USE OF THIS DATA AND INFORMATION MUST BE DETERMINED BY THE USER TO BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS.

0000000000000000

SAVOGRAN

Strypeeze.

**paint & varnish
remover**



**semi-paste
better cling**

**DANGER - POISON!
EXTREMELY FLAMMABLE. MAY BE
FATAL OR CAUSE BLINDNESS
IF SWALLOWED. VAPOR HARMFUL
SKIN AND EYE IRRITANT**

Read Other Cautions and HEALTH HAZARD INFORMATION
on Back Panel

1 U.S. QUART 0.946 LITER

DANGER: EXTREMELY FLAMMABLE - VAPORS HARMFUL

KEEP AWAY FROM SPARKS, HEAT AND FLAMES

STRYPEEZE OUTDOORS. If possible. If you must use it indoors, **OPEN ALL WINDOWS AND OUTSIDE DOORS**, use only with moving fresh air cross-ventilation over the work area. **VAPORS** flow along floors, under doors and may **IGNITE** **EXPLOSIVE**. **DO NOT** use or store **STRYPEEZE** in basements or other unventilated areas. **DO NOT SMOKE.** **BEFORE USE:** **SHUT OFF** **ELECTRICITY** to all outlets, switches, fans, motors, stoves, heaters and appliances. **TURN OFF** **ALL** flames, pilot lights and electrical wires on stoves, ovens, water heaters, furnaces, etc. **DO NOT** restore power or flames until all vapors (odors) are gone. Vapors contacting flame or hot surface may cause toxic poisonous gas and destroy metals.

USE ONLY WITH ADEQUATE VENTILATION

DO NOT BE MADE NON POISONOUS. Contains: **ACETONE**, **TOLUOL**, **METHANOL**, **PETROLEUM DISTILLATES** and **METHYLENE CHLORIDE** which has been shown to cause cancer in certain laboratory animals. Risk to your health depends on level and duration of exposure. Reports have associated repeated or prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling contents may be harmful or fatal. (See Material Safety Sheet.) Avoid contact with skin and eyes and avoid breathing vapor. If odor is strong, stop, notice dizziness, headache or eye watering - **STOP** - leave area immediately.

FIRST AID: IF SWALLOWED: Give 1 or 2 glasses of water and immediately call Physician, Hospital Emergency Room or Poison Control Center for way to induce vomiting.

CONTACT: Immediately flood with water for at least 15 minutes and call Physician.

SKIN: Wash thoroughly. If irritation continues see Physician.

KEEP OUT OF REACH OF CHILDREN **CLOSE CONTAINERS AFTER EACH USE**

NEVER STORE IN UNLABELED CONTAINERS

DIRECTIONS: Store in cool place. **BEFORE USE**, read all information on container. Use on bright or horizontal surfaces. **WORK OUTDOORS** in shade. If you work indoors, use only well-ventilated area (see warnings above). Protect eyes with goggles, wear heavy neoprene gloves. Protect skin from splashes. Shake sealed container well - cover cap with cloth to prevent spraying and open slowly to relieve pressure.

1. Brush on thick coat of remover in one direction only. Allow Strypeeze to work for 15 minutes or more. Scrape test to be sure finish is softened to base. If not, wait a few minutes longer or reapply remover and retest. Thick finishes may need more applications.

2. Remove sludge with wooden scraper. Use a stiff brush or coarse rags to thoroughly scrub off residue with Savogran Deglosser, paint thinner or a water solution of TSP heavy duty cleaner. The water wash method also removes most stains, but water will raise wood grain and may loosen glue joints and veneers.

3. Before refinishing, lightly sand dry surface. If sandpaper clogs or gums, surface is not clean. Surface must be clean and dry before refinishing or new finish may not adhere.

4. Best working temperature between 70° - 90°F. If you have any questions, call us at 1-800-226-8872 or 617-782-8488.

SAVOGRAN

THE SAVOGRAN CO.
NORWOOD, MASS. 02062

SAVOGRAN

P.O. Box 130, Norwood, Mass. 02062
Telephone: (617) 762-5400



DATA FOR HAZARDS INFORMATION LABEL

Hazard Code

4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant

Flammability

4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant

Health

4 = Extreme
3 = High
2 = Moderate
1 = Slight
0 = Insignificant

Reactivity

Special

MATERIAL SAFETY DATA SHEET

TRADE NAME: SAVOGRAN STRYPEEZE SEMI PASTE

EFFECTIVE DATE:
June, 1986

CHEMICAL NAME: mixture C.A.S. No.: none CLASS: PAINT AND VARNISH REMOVER

DOT SHIPPING Paint Related Material; Hazard Class: Flammable liquid; DOT specific packaging NAME and requirements: 173.128; exceptions: 173.118 & 173.128; DOT labeling requirements: LABELING: quarts or smaller ORM-D; Gallons or larger: Flammable Liquid; I.D. No: NA 1263

SECTION 2

HAZARDOUS INGREDIENTS

	C.A.S. No	Wt %	TLV units
Methylene Chloride	75-09-2	< 20	500 ppm OSHA 100 ppm ACGIH
Methanol	67-56-1	< 30	200 ppm OSHA
Toluol	108-88-3	< 40	200 ppm OSHA 100 ppm ACGIH
Acetone	67-64-1	< 25	1000 ppm OSHA
Paraffin Wax	8002-74-2	< 5	5 mg/m ³ for oil mist in air ACGIH

SECTION 3

PHYSICAL DATA

Initial Boiling point: 104°F
Vapor Pressure: Retarded
Vapor Density: Heavier than air
Solubility in water: Appreciable
Specific Gravity: @ 60/60°F: 0.88
Percent Volatile: above 90%
Evaporation Rate: Less than ether
Appearance: Thickened, orange liquid, aromatic odor

SECTION 4

FIRE AND EXPLOSION DATA

FLASH POINT: Initial above 80°F. T.O.C. for fresh material. Material exposed to air for some time and residues may have much lower flash point.

FLAMMABLE LIMITS: unknown

EXTINGUISHING MEDIA: Water fog, regular foam, carbon dioxide or dry chemical

HAZARDOUS DECOMPOSITION PRODUCTS: May form toxic materials: carbon dioxide, carbon monoxide, various hydrocarbons, hydrogen chloride, small amounts of phosgene and chlorine.

SPECIAL FIREFIGHTING PROCEDURES: Wear self-contained breathing apparatus with full face piece operated in pressure-demand or other positive pressure mode. Straight water stream will spread fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors are heavier than air and may travel along the surface, collect in low areas and may be moved by ventilation and may ignite explosively at locations far removed from handling location. KEEP AWAY FROM SPARKS AND OPEN FLAMES. Use only in explosion proof areas or turn off electricity. DO NOT smoke or permit others to do so. DO NOT operate electric switches or motors. PREVENT metal objects from striking other metal objects which may cause sparks. TURN OFF pilot lights, electric igniters and all other flames. Vapors contacting flame, sparks or hot surfaces may ignite explosively or product gases which are toxic and are corrosive to metals. DO NOT use welding or cutting torches on or near containers [empty or full] because product, including residue, can ignite explosively.

2+3 missing

SECTION 8

SPECIAL PROTECTION INFORMATION (continued)

EYE PROTECTION: Chemical goggles or safety glasses with side shield. Eye-wash stations and safety showers should be readily available. Plastic glasses may be dissolved by paint removers and other solvents.

OTHER PROTECTIVE EQUIPMENT: No special protective clothing needed: however, wear long sleeved shirts and long pants to protect skin against splashes and spills.

SECTION 9

SPECIAL PRECAUTIONS

HANDLING AND STORING: Store in cool place, out of hot sun and below 90°F. All containers are subject to damage in storage and transit. Damaged containers may start leaking immediately or at a later time. DO NOT store flammable materials in areas with widely fluctuating temperatures and DO NOT store where vapors may come in contact with flames, sparks, or heat. Flammable materials should not be stored in below ground areas that can not be adequately ventilated at floor level. DO NOT use cutting or welding torches near full or empty containers.

Personnel MUST NOT enter any unventilated areas, tanks or other containers unless a suitable positive pressure, self contained breathing apparatus with full face piece and a safety harness are used and an observer is present to render assistance.

NOTE: The observer must not enter the hazardous area at any time.

CLOSED CONTAINERS may explode if exposed to extreme heat. NEVER use internal gas or air pressure to remove contents from a container.

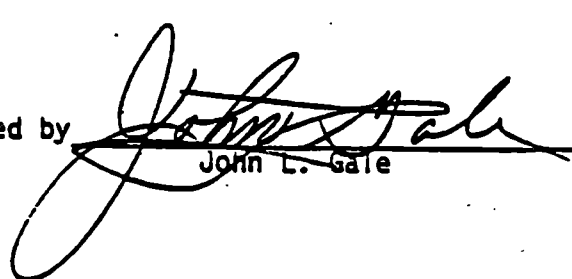
EMPTIED CONTAINERS: Emptied containers may retain product residues (e.g. vapor and liquid or solids); therefore, all precautions given in this sheet must be observed until a container is thoroughly cleaned or destroyed. All containers must be completely drained, (less than one inch of material in the bottom of 55 gallon container) before disposal. If possible emptied container of 55 gallons or more should be given to reconditioner for cleaning.

NOTE: Judgement of potential hazards of this mixture is based on information available about individual components listed under SECTION 2 - HAZARDOUS INGREDIENTS. Direct testing of mixture has not been done. Flash point has been tested.

Information given herein is believed to be accurate and is given in good faith; however, no warranty either expressed or implied is made. It is strongly suggested that users confirm in advance of need that the information is current and applicable to their situations.

JLG

Prepared by


John L. Gale

Oatey

MEDIUM • CLEAR
CEMENT
for **pvc**
plastic pipe & fittings

DANGER: EXTREMELY FLAMMABLE
HARMFUL OR FATAL IF SWALLOWED
ED • VAPOR HARMFUL • MAY IRRITATE EYES AND SKIN • MAY BE ABSORBED THROUGH SKIN

Read precaution
on back panel

5 FL. OZ.
(1 Pt.)

No. 3

DIRECTIONS

Store and use at temperatures between 40°F and 110°F. Don't use.

Stir or shake before using. If jelly-like.

- 1 Square pipe ends and remove all burrs and dirt.
- 2 Check dry fit of pipe and fitting. Pipe should easily go 1/3 of the way in. If pipe bottoms, it should be snug.
- 3 Clean pipe and fitting with Purple Primer or an IAPMO Listed solvent.
- 4 When solvent welding at temperatures below 40° or above 110°, consult data sheet.
- 5 When solvent welding pipe over 3 inches, recommended application is a natural bristle brush one half the pipe diameter, i.e., 3 inch brush for 6 inch pipe.
- 6 Apply thin coat of cement to fitting, avoid puddling inside.
- 7 Apply liberal coat of cement to pipe, leave no void.
- 8 Assemble parts **QUICKLY! CEMENT MUST BE FLUID**—if not fluid, recoat both parts.
- 9 Push pipe **FULLY** into fitting using a 1/4 turning motion until pipe bottoms.
- 10 Hold pipe and fitting together for 30 seconds—wipe off excess cement with cloth. Completed joints should not be disturbed until they have cured sufficiently to withstand handling.
- 11 Keep container closed when not in use.
- 12 Do not pressure test until cement is fully cured.

HAZARDOUS INGREDIENTS: Methyl ethyl ketone, tetrahydrofuran, cyclohexanone, and polyvinyl chloride resin.

Store in a cool, dry, well-ventilated place. Do not use near heat, sparks, or flames. Keep container closed. Use with adequate ventilation. Wear impervious clothing while handling. Do not smoke, eat or drink while handling. Wash thoroughly after handling and before eating. If swallowed, drink water. **DO NOT INDUCE VOMITING.** Call a physician or poison control center immediately. If inhaled, get fresh air and seek medical attention if ill feelings persist. In case of eye and skin contact, immediately flush with plenty of water for 15 minutes and seek medical attention if irritation persists.

KEEP OUT OF REACH OF CHILDREN

Oatey

CLEVELAND OH 44135 & ATLANTA GA 30080
NEWARK, CA 94560 & DALLAS TX 75050

(OATEY REGULAR CLEAR
PVC SOLVENT CEMENT)

Section 3. Health Hazard Data

Effects of Exposure:

ENTRY ROUTE: Inhale X Ingest X Skin X Eye X

Inhalation: May cause irritation of mucous membrane, nose & throat, headache, dizziness, nausea, numbness of the extremities and narcosis in high concentrations. Has caused QS depression, liver damage in animals, & high concentrations have caused retardation of fetal development in rats.

Ingestion: May be aspirated into the lungs or cause systemic effects described under inhalation.

Skin: Chronic contact may lead to irritation and dermatitis. Chronic exposure to vapors of high concentration may cause dermatitis. May possibly be absorbed through the skin.

Eye: Vapors or direct contact may cause irritation.

Section 4. Emergency Response Data

Exposure	First Aid Measures: <u>INHALATION</u> - Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Keep victim quiet and warm. Call a poison control center or physician immediately.. IF dead, bury. <u>SKIN</u> - Flush with water, then wash thoroughly with soap and water. Remove contaminated clothing and wash before reuse. Call a poison control center or physician if irritation persists. <u>EYES</u> - Flush with water for 15 minutes and call a poison control center or physician if an irritation persists. <u>INGESTION</u> - Drink plenty of water. DO NOT INDUCE VOMITING, and call a poison control center or physician immediately. Avoid alcoholic beverages. Never give anything by mouth to a unconscious person.
Fire	Special Procedures: For small fires: Use dry chemical, CO₂, water or foam extinguisher. For large fires: Evacuate area and call Fire Department immediately.
Spills	Steps To Be Taken: Ventilate area, stop leak if it can be done without risk. Take up with sand, earth or other absorbing material. Dispose of according to local, state & Federal Reg

Section 5. Safe Usage Data

Protective Equipment Types	Eyes: Safety Glasses with Side Shields. Respiratory: NIOSH-approved canister respirator in absence of adequate ventilation. Gloves: Rubber Gloves. Other: Eye wash and safety shower should be available.
Ventilation	General Mechanical: Exhaust ventilation capable of maintaining emissions at the point of use below PEL. Local Exhaust: Open doors & windows. If used in enclosed area, use exhaust fan to remove fumes.
Precautions	Handling & Storage: Keep away from heat, sparks and flames; store in a cool, dry place.. Other: Containers, even those that have been emptied, will retain product residue and vapors. Handle empty containers as if they were full.

QATEY REGULAR CLEAR PVC ORIENT

Section 6. Physical Hazard Data

Flammability	LFL= 1.8 UFL= 11.8	Z Volume Z Volume	Flashpoint: 5 - 8°F. Method Used: Tag Closed Cup
Stability	Stable ☒ Unstable ☐	Conditions To Avoid: Heat, sparks and open flame. Hazardous Decomp. Pits.: Carbon monoxide/carbon dioxide/hydrogen chloride/smoke.	
Hazardous Polymerization	May Occur ☐ Will Not Occur ☒	Conditions to Avoid: NONE	
Incompatibility	Materials To Avoid: Acids, oxidizing materials, alkalis, chlorinated inorganics (Potassium, Calcium, and Sodium Hypochlorite), copper or copper alloys.		

Section 7. Physical and Chemical Properties

Boiling Pt: 151 °F 66 °C	Vapor Density (Air 1) 2.5	Volatile Components 88 ± 2%
Vapor Press: 145 mmHg @ 20° C	pH: N/A	Sp. Gravity: 0.90 ± 0.015
Solubility In H ₂ O Negligible	Will Dissolve In: TETRAHYDROFURAN	Evaporation Rate: (B U A C =1) 5.5 - 8.0
Appearance: Clear Liquid	Is Material: Paste Powder	
Odor: Ether-like.	Solid (Liquid) Gas	

Section 8. Manufacturer or Supplier Data

Firm Name & Mailing Address: QATEY CO. P. O. Box 35906 4700 W. 160th Street Cleveland, OH 44135 (216) 267-7100	Name (Print): Paul E. Naton
	Signature: 
	Title: Corporate Chemist
	Date: July 30, 1986
	Emergency Telephone No. (303) 623-5716 (Collect)

The Finest
One Coat
Custom Color
Interior Latex
Semi-Gloss Finish

5-Year Warranty

Me & My
Only

By ENTERPRISE

Immediate Tint Base 3111-01 24 Fl. Oz. (3.125 L)

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This supe-
ning the soft,
ven the most

wallboard or
enterprise
l Primer.
dirt from
th a wire
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his paint. Do
ase colorants
se paint.
uniform
containers of

an application

CAUTION
KEEP OUT OF THE
REACH OF CHILDREN.
Avoid prolonged
contact with skin or
breathing of spray mist.
Do not take internally.
Close container after
each use. **PROTECT**
FROM FREEZING.
FIRST AID: EYE CON-
TACT: Flush thoroughly
with water. If irritation
persists, **GET MEDICAL**
ATTENTION. IF
SWALLOWED: Drink
two glasses of water.
Induce vomiting. **GET**
MEDICAL ATTENTION
IMMEDIATELY.

Medical Emergency Telephone
1-800-228-5835

CONTAINS LESS THAN
250 g L VOC

MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS, AND RELATED MATERIALS
COMPLIES WITH 29CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

DATE OF PREP: August, 1986

MANUFACTURER'S NAME: Enterprise Paint Company

STREET ADDRESS: 1191 So. Wheeling Road
 CITY, STATE, ZIP CODE: Wheeling, IL 60090

EMERGENCY TELEPHONE NO.: 312/541-9000
 INFORMATION TELEPHONE NO.:

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: One & Only Latex Semi-Gloss White & Tint Base

PRODUCT CLASS: Latex Paint
 PRODUCT(S) NUMBER: 3100/3110

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	CAS-NO.	WT. %	PEL	PPM	TLV	mmHg@68°F	VAPOR PRESSURE
2-Amino-2-Methyl-1-Propanol	124-68-5	0.3	NE	NE	NE	1.250	
4, 4 Dimethylazolidine	51200-87-4	0.13	2	2	2	0.1	
Ethylene Glycol	107-21-1	1.60	NE	NE	50	0.1	
Titanium Dioxide	13463-67-7	---	15	15	10	NA	
acolin	1332-58-7	---	15	15	10	NA	
NE = NOT ESTABLISHED	NA = NOT APPLICABLE	NK = NOT KNOWN					

SECTION III - PHYSICAL DATA

BOILING RANGE: Above 212°F
 VAPOR DENSITY: _____ HEAVIER X _____ LIGHTER THAN AIR
 EVAPORATION RATE: _____ FASTER X _____ SLOWER THAN ETHER
 % VOLATILE BY VOLUME: 63
 WEIGHT PER GALLON: 10.7

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: OSHA None
 DOT: Not regulated
 FLASH POINT: NA
 LEL: NA
 EXTINGUISHING MEDIA: None required.
 UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers may explode (due to build-up of steam pressure) when exposed to extreme heat.
 SPECIAL FIREFIGHTING PROCEDURES: Water may be used to cool containers to prevent pressure build-up and possible explosion when exposed to extreme heat.

SECTION V - HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL - See Section II

THRESHOLD LIMIT VALUE - See Section II

EFFECTS OF OVEREXPOSURE: Skin contact: Possible primary irritation.

Eye Contact: Primary irritation.

Ingestion: Can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE: Dermatitis

PRIMARY ROUTE(S) OF ENTRY: ☒ DERMAL ☐ INHALATION ☒ INGESTION

EMERGENCY AND FIRST AID PROCEDURES: Splash (eyes): Flush immediately with copious quantities of running water for at least 15 minutes. Get medical attention immediately. Splash (skin): Wash affected areas with soap and water. Ingestion: Give two glasses of water. Induce vomiting by placing finger in back of throat. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Remove contaminated clothing and shoes.

SECTION VI - REACTIVITY DATA

STABILITY: ☐ UNSTABLE ☒ STABLE

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, various hydrocarbon compounds.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizing agents (e.g., nitric acid, permanganates, etc.).

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Contain and remove with inert sorbent rags or sand.

WASTE DISPOSAL METHOD: Dispose in accordance with local, State and Federal regulations. Use licensed waste disposal company.

SECTION VIII - SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION: None needed unless applied by spraying. Then, use a NIOSH approved respirator.

VENTILATION: None required. Individual may want to open doors or windows.

PROTECTIVE GLOVES: None required, but can be used.

EYE PROTECTION: Safety glasses.

OTHER PROTECTIVE EQUIPMENT: None.

HYGENIC PRACTICES: Wash hands before eating or smoking. Do not consume food or beverage while using this product.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Protect from freezing.

OTHER PRECAUTIONS: None.

The information accumulated herein is believed to be accurate but is not warranted to be, whether originating with manufacturer or not. Recipients are advised to confirm in advance of need that the information is current, applicable and suitable to their circumstances.

WOOD-RICH OIL WIPING

PENETRATING

DANGER
COMBUSTIBLE. VAPOR HARMFUL.
HARMFUL OR FATAL IF SWALLOWED.
See other cautions on side panel.

One Quart 32 Fl. Oz. (946 ml)

Do not sand like
fine sand dust.
Wood - Oak, walnut
require a paste
finish.
Use fine bringing
top of the can.
Use use
check color by
extra piece of
applying to an
of the object.
on surfaces, apply
painting pad.
sand, then
Apply stain
or roller.
can be controlled
a clean cloth
amount of
WOOD-RICH
Satin Finish.
color and
first sand lightly,
dust. Apply
Satin or

and tools with
cleaner.

CAUTION
KEEP OUT OF THE REACH
OF CHILDREN. CONTAINS
MINERAL SPIRITS. Keep away
from heat, sparks and flame. To
avoid breathing vapors or spray
mist, open windows and doors or
use other means to ensure fresh
air entry during application and
drying. If you experience eye
watering, headache or dizziness,
increase fresh air or wear respira-
tory protection (NIOSH/MSHA TC23C
or equivalent) or leave the area.
Close container after each use.
Avoid contact with skin. USE
WITH ADEQUATE VENTILA-
TION. FIRST AID: SKIN CON-
TACT: Wash with soap and water,
rinse thoroughly. EYE CONTACT:
Immediately flush with water for
15 minutes. GET MEDICAL
ATTENTION. INHALATION: If
affected by vapors or spray mist,
move to fresh air. If person is in
a coma or breathing is difficult,
GET MEDICAL ATTENTION
IMMEDIATELY. IF SWALLOWED:
CALL PHYSICIAN IMMEDIATELY.
Do not induce vomiting. Reports of
commercial painters have associ-
ated repeated and prolonged oc-
cupational overexposure to
solvents with permanent brain
and nervous system damage.
Intentional misuse by deliberately
concentrating and inhaling the
vapors may be harmful or fatal.

DATE OF PREP:
Sept., 1986

EMERGENCY TELEPHONE NO.: 312/541-9000

PRODUCT(S) NUMBER: 1301-02-04

NK = NOT KNOWN

GALLON: 7.4#

SPECIAL FIREFIGHTING PROCEDURES: Self-contained breathing apparatus with full face piece operated under positive pressure. Water may be used to cool containers to prevent pressure build-up and possible explosion when exposed to extreme heat.

SECTION V - HEALTH HAZARD DATA

IBLE EXPOSURE LEVEL - See Section II

with
)

ED LIMIT VALUE - See Section II

OF OVEREXPOSURE: Acute: Eyes: Can cause severe irritation, redness, tearing, vision. Skin: Prolonged or repeated contact can cause moderate irritation and tis. Breathing: Can cause nasal and respiratory irritation, dizziness, and Aspiration into the lungs can cause chemical pneumonitis, which can be fatal. on: Can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

onal misuse by deliberately concentrating and inhaling the vapors may be harmful

N

EXPOSURE: Solvents have been reported to cause permanent brain and nervous damage with possible liver and kidney damage. Respiratory and skin sensitization.

or

CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE: Dermatitis, allergic responses, is of skin and lungs.

ntain

ROUTE(S) OF ENTRY: ☒ DERMAL ☒ INHALATION ☒ INGESTION

ous

AND FIRST AID PROCEDURES: Skin: Wash with soap and water. Eyes: Flush ately with water for 15 minutes, get medical attention immediately. tion: If affected by vapors or spray mist, remove to fresh air. If in a coma or ing is difficult, administer oxygen. If breathing has stopped, give artificial ation. In either case get medical attention immediately. Keep person warm and Ingestion: Do not induce vomiting, get medical attention immediately.

verage

contaminated clothing and shoes.

SECTION VI - REACTIVITY DATA

nd

ITY: ☐ UNSTABLE ☒ STABLE

OUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

is
or near

OUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, various hydrocarbon nds.

IONS TO AVOID: High temperatures, hot surfaces, electric arcs.

to be,
in

ATIBILITY (MATERIALS TO AVOID): Strong oxidizing agents (e.g. nitric acid, ganates, etc.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Contain spill. Soak up with rags, sand, floor absorbent. Eliminate all sources of ignition (flame, sparks, etc.), exclude from area persons without protective equipment. Use non-sparking tools.

WASTE DISPOSAL METHOD: Dispose of in accordance with Federal, State and local regulations. Use licensed hazardous waste disposal company.

SECTION VIII - SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION: If PEL or TLV is exceeded, use NIOSH/MSHA respirator TC23C or equivalent.

VENTILATION: Provide sufficient mechanical and/or local exhaust ventilation to maintain exposure below PEL or TLV. Follow OSHA 29CFR part 1910.94.

PROTECTIVE GLOVES: Neoprene or Nitrile Rubber
EYE PROTECTION: Safety glasses with side shields.

OTHER PROTECTIVE EQUIPMENT: To prevent repeated or prolonged contact, wear impervious clothing and boots. Use protective cream if skin contact is likely.

HYGENIC PRACTICES: Wash hands before eating or smoking. Do not consume food or beverage while using this product.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store away from heat, sparks, and flame. Keep containers tightly closed.

OTHER PRECAUTIONS: Do not reuse container. Empty containers may contain hazardous residue. Keep away from heat, sparks and flame. Do not cut, puncture or weld on or near container. Prevent breathing of vapor or spray mist.

The information accumulated herein is believed to be accurate but is not warranted to be, whether originating with manufacturer or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

LOWE'S
ELUXI

12-Year
Interior Color

Latex Flat Wall Paint

Base 3 47333 120 Fl. Oz. (3.55 Liters)

with a
item
with
dry

CAUTION
KEEP OUT OF THE
REACH OF CHILDREN
Avoid prolonged con-
tact with skin or breath-
ing of spray mist. Do
not take internally. Close
container after each
use. PROTECT FROM
FREEZING. FIRST AID:
EYE CONTACT: Flush
thoroughly with water.
If irritation persists, GET
MEDICAL ATTENTION.
IF SWALLOWED: Drink
two glasses of water.
Induce vomiting. GET
MEDICAL ATTENTION
IMMEDIATELY.

Manufactured exclusively for
Lowe's Companies, Inc.
North Wilkesboro, North Carolina

MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS, AND RELATED MATERIALS
COMPLIES WITH 29CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

DATE OF PREP:
Oct., 1986

MANUFACTURER'S NAME: Enterprise Paint Company

STREET ADDRESS: 1191 So. Wheeling Road

CITY, STATE, ZIP CODE: Wheeling, IL 60090

INFORMATION TELEPHONE NO.:

EMERGENCY TELEPHONE NO.: 312/541-9000

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: Lowe's Generic Interior Flat Latex

PRODUCT CLASS: Latex Paint

PRODUCT(S) NUMBER: 48278

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	CAS-No.	% WT.	OCCUPATIONAL EXPOSURE LIMITS			VAPOR PRESSURE mmHG@68°F
			PEL	PPM	TLV	
Ammonia 28%	7664-41-7	0.3	50		25	11.9 mm
4, 4-Dimethyloazolidine	51200-87-4	0.14	2		2	6 mm
Ethylene Glycol	107-21-1	3.50	NE		50	0.1
				mg/m3		
Titanium Dioxide	13463-67-7	---	15		10	NA
Calcium Carbonate	471-34-1	---	15		10	NA
Kaolin	1332-58-7	---	15		10	NA

NE = NOT ESTABLISHED

NA = NOT APPLICABLE

NK = NOT KNOWN

SECTION III - PHYSICAL DATA

BOILING RANGE: Above 212°F VAPOR DENSITY: HEAVIER X LIGHTER THAN AIR

EVAPORATION RATE: FASTER X SLOWER THAN ETHER % VOLATILE BY VOLUME: 83 WEIGHT PER GALLON: 10.1 ± 0.25

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: OSHA None
DOT: Not regulated

FLASH POINT: NA

LEL: NA

EXTINGUISHING MEDIA: None required.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers may explode (due to build-up of steam pressure) when exposed to extreme heat.

SPECIAL FIREFIGHTING PROCEDURES: Water may be used to cool containers to prevent pressure build-up and possible explosion when exposed to extreme heat.

SECTION V - HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL - See Section II

THRESHOLD LIMIT VALUE - See Section II

EFFECTS OF OVEREXPOSURE: Skin contact: Possible primary irritation.

Eye Contact: Primary irritation.

Ingestion: Can cause gastrointestinal irritation, nausea, vomiting and diarrhea.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE: Dermatitis

PRIMARY ROUTE(S) OF ENTRY: ☒ DERMAL ☐ INHALATION ☒ INGESTION

EMERGENCY AND FIRST AID PROCEDURES: Splash (eyes): Flush immediately with copious quantities of running water for at least 15 minutes. Get medical attention immediately. Splash (skin): Wash affected areas with soap and water. Ingestion: Give two glasses of water. Induce vomiting by placing finger in back of throat. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Remove contaminated clothing and shoes.

SECTION VI - REACTIVITY DATA

STABILITY: ☐ UNSTABLE ☒ STABLE

HAZARDOUS POLYMERIZATION: ☐ MAY OCCUR ☒ WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, various hydrocarbon compounds.

CONDITIONS TO AVOID: High temperatures.

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizing agents (e.g., nitric acid, permanganates, etc).

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Contain and remove with inert absorbent rags or sand.

WASTE DISPOSAL METHOD: Dispose in accordance with local, State and Federal regulations. Use licensed waste disposal company.

SECTION VIII - SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION: None needed unless applied by spraying. Then, use a NIOSH approved respirator.

VENTILATION: None required. Individual may want to open doors or windows.

PROTECTIVE GLOVES: None required, but can be used.

EYE PROTECTION: Safety glasses.

OTHER PROTECTIVE EQUIPMENT: None.

HYGENIC PRACTICES: Wash hands before eating or smoking. Do not consume food or beverage while using this product.

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Protect from freezing.

OTHER PRECAUTIONS: None.

The information accumulated herein is believed to be accurate but is not warranted to be, whether originating with manufacturer or not. Recipients are advised to confirm in advance of need that the information is current, applicable and suitable to their circumstances.



78362

THE HOME SOLUTION **PROFESSIONAL**

CARPENTER'S WOOD GLUE



SAFE! NO HARMFUL FUMES*

NET 8 FL. OZ. (236 ml)



ELMER'S.

ALIPHATIC RESIN

CARPENTER'S WOOD GLUE



A fast-grabbing, fast-setting, super-strength glue formulated especially for working with wood. Excellent for cabinets, furniture, and other wood projects.



- **GRABS FAST / SETS FAST** — reduces clamp time.
- **SUPER BOND FOR ALL WOODS** — specially formulated for use on all hard and soft woods.
- **RESISTS HEAT, WATER** — also resists lacquers and varnishes.
- **SANDABLE / PAINTABLE** — resists softening.
- **NON-SMOKABLE** — no harmful fumes.*
- **EASY CLEAN-UP** — washes off hands and tools with warm water.

Also available in 16 oz., Quart, Gallon and 5 Gallon sizes

DIRECTIONS: Glue to bare wood only.

PREPARATION: Surfaces to be glued must be clean, dry, free of oil or grease. Joints should fit snugly.

APPLICATION: Spread glue on both surfaces. Clamp for 30 minutes. For fastest bond allow to dry overnight. Note: close cap after each use.

CLEAN-UP: Wipe up with clean cloth and warm water.

KEEP FROM FREEZING. Store at normal room temperature.

Label conforms to ASTM D4230-83b

*As defined under the Federal Hazardous Substances Act
Borden, Inc., HPPG, Columbus, Ohio 43215
Made in U.S.A. Reorder No. E-701





MATERIAL SAFETY DATA SHEET

Consumer Products Division, Division of Borden, Inc.
180 EAST BROAD STREET, COLUMBUS, OHIO 43215

Emergency Telephone
(614) 431-6600
(OPERATION ALERT)

THE OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200 REQUIRES THAT
THE INFORMATION CONTAINED ON THIS SHEET BE MADE AVAILABLE TO YOUR WORKERS.

INSTRUCT YOUR WORKERS TO HANDLE THIS PRODUCT PROPERLY

NAME: ELMER'S CARPENTERS WOOD GLUE (ALL SIZES)
TYPE: MODIFIED PVAC EMULSION
APPLICATION: GENERAL PURPOSE GLUING: E-700, E-701, E-702, E-704, E-705, E-706, E-970

20-Jan-87

SIGNAL WORD

THIS MATERIAL IS NOT A "HEALTH HAZARD" OR A "PHYSICAL HAZARD" AS DETERMINED WHEN REVIEWED ACCORDING TO THE REQUIREMENTS OF
THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION 29 CFR PART 1910.1200 "HAZARD COMMUNICATION" STANDARD.

CHEMICAL HAZARD RATING

HEALTH=1(SLIGHT)

FIRE=0(LEAST)

REACTIVITY=0(LEAST)

29CFR1910.1200 HAZARDOUS INGREDIENTS/REPORTED HEALTH EFFECTS

CAS REGISTRY NO.	MATERIAL DESCRIPTION	% RANGE
NONE KNOWN TO BORDEN		

PHYSICAL DATA

SPECIFIC GRAVITY	1.1
PERCENT VOLATILES	53.5
APPEARANCE	LIGHT YELLOW LIQUID
ODOR	MILD ACETIC AROMA
ASTM D-4236-83A LABELING STANDARD	CONFORMS

ACUTE HEALTH HAZARD DATA

SKIN ABSORPTION: NOT TOXIC DERMALLY WHEN TESTED AS
DESCRIBED IN 16 CFR PART 1500.3 (c) (1) AND (2).
INGESTION: NOT TOXIC ORALLY WHEN TESTED AS DESCRIBED IN
16 CFR PART 1500.3 (c) (1) AND (2).
INHALATION: NOT TOXIC BY INHALATION WHEN TESTED AS
DESCRIBED IN 16 CFR PART 1500.3 (c) (1) AND (2).
SKIN: NOT A PRIMARY IRRITANT (PRIMARY SKIN IRRITATION INDEX LESS
THAN 5.0/8.0) WHEN TESTED AS DESCRIBED IN 16 CFR PART 1500.41.
EYES: NOT AN IRRITANT WHEN TESTED AS DESCRIBED IN 16 CFR PART
1500.42.

HANDLING PRECAUTIONS

SKIN: PERSONS WITH SENSITIVE SKIN SHOULD AVOID PROLONGED.
CONTINUOUS CONTACT WITH SKIN. IF IRRITATION DEVELOPS.
DISCONTINUE USE.
HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY
PRACTICES.

EMERGENCY AND FIRST AID PROCEDURES

INGESTION: IF ACCIDENTALLY SWALLOWED, DILUTE BY DRINKING
LARGE QUANTITIES OF WATER. IMMEDIATELY CONTACT POISON
CONTROL CENTER OR HOSPITAL EMERGENCY ROOM FOR ANY OTHER
ADDITIONAL TREATMENT DIRECTIONS.
SKIN CONTACT: IN CASE OF IRRITATION, FLUSH WITH WATER.
EYE CONTACT: FLUSH THOROUGHLY WITH WATER. IF IRRITATION
PERSISTS, CALL A PHYSICIAN.

FIRE AND EXPLOSION HAZARD DATA

WILL NOT BURN UNLESS WATER HAS EVAPORATED.
IN CASE OF FIRE, USE WATER SPRAY, DRY CHEMICAL, FOAM OR
CO2. USE WATER TO KEEP FIRE-EXPOSED CONTAINERS COOL.

REACTIVITY DATA

NORMALLY STABLE AS DEFINED IN NFPA 704-12(4-3.1).

CONTROL MEASURES

NO SPECIAL CONTROL MEASURES NECESSARY UNDER NORMAL
CONDITIONS OF USE.

PERSONAL PROTECTION INFORMATION

NO SPECIAL PROTECTION NECESSARY

SPILL OR LEAK PROCEDURES

SOAK UP WITH ABSORBENT MATERIAL AND REMOVE TO A CHEMICAL
DISPOSAL AREA
PREVENT ENTRY INTO NATURAL BODIES OF WATER.

WASTE DISPOSAL METHOD

RECOVER FREE LIQUID. ABSORB RESIDUE AND DISPOSE OF ACCORDING
TO LOCAL, STATE, AND FEDERAL REQUIREMENTS.

STORAGE PRECAUTIONS

KEEP CONTAINER CLOSED.
HARMED BY FREEZING. CANNOT BE MADE USABLE AFTER FREEZING.
STORE IN A COOL DRY PLACE.

DOT CLASSIFICATION

NOT REGULATED

Non-Asbestos **ALL
PURPOSE**

USG

Ready-Mixed
**JOINT
COMPOUND** 62 LBS. NET
(28.1 kg)

glossy before decorating. A prime coat of good quality
undiluted, interior latex flat wall paint with high solids
content should be applied and allowed to dry before
painting or touching.

HAZARD CAUTIONS:

CONTAINS MICA OR MICA AND TALC.

Wet sanding or sparging finished joints before sanding
is recommended to avoid creating dust. When
sanding or use a dust collector to reduce dust. Do not
use a NORM approved respirator specified for dust
inhalation when air is dusty. The use of safety glasses is
recommended. Do not take internally.

KEEP OUT OF REACH OF CHILDREN

Hazardous Ingredient Info.—(212) 221-4200

USG® does not take any liability for accidents and consequences that may
directly result, nor for any loss caused by application of these products, except
when used with current printed instructions or for other loss that may be caused
in a directly limited to replacement of defective goods. Any claim for loss or
damage should be made in writing to us within 90 days from date of purchase.
USG® should have been discovered.

Manufactured under Patent No. Re. 28,765

USG® is a registered trademark of USG Corporation

CAUTION

MIX CONTENTS LIGHTLY
AND TRIAL APPLY BEFORE
ADDING ANY WATER

UNITED STATES GYPSUM COMPANY
Chicago, IL 60606-4265

1-58/rev 4-86

©1986 U.S. Gypsum Co.

Produced in U.S.A.
Printed in U.S.A.

MATERIAL SAFETY DATA SHEET

United States Gypsum Company
101 S. Wacker Drive, Chicago, IL 60606

Day 312/321-4383
Night 312/321-4382

SECTION I

PRODUCT GROUP: Joint Treatment Products - Ready Mixed Compounds

USG Ready Mixed Joint Compound - Taping
USG Ready Mixed Joint Compound - Topping
USG Ready Mixed Joint Compound - All Purpose
USG Ready Mix Plus III Total Joint Compound
DURABOND Ready Mixed Wallboard Compound
COVER COAT Drywall Compound

DATE ISSUED: May 15, 1986
CHEMICAL FAMILY: Mixture

SECTION II HAZARDOUS INGREDIENTS

MATERIAL:	%	TLV	CAS #
Attapulgate	0-3	Not established	Not established
Talc	0-10	2mg/m ³ (respirable)	14807-96-6
Mica	0-12	3mg/m ³ (respirable)	12001-25-2
Amphorus Silica	0-3	10mg/m ³ (total dust)	68855-54-9
Perlite	0-10	10mg/m ³ (total dust)	73763-70-3

SECTION III PHYSICAL DATA

SPECIFIC GRAVITY (H₂O = 1): 1.6
PERCENT VOLATILE BY VOLUME: (%) Approx. 35
APPEARANCE AND ODOR: Off white paste, low odor

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (METHOD USED): None
EXTINGUISHING MEDIA: Not combustible
SPECIAL FIRE FIGHTING PROCEDURES: None
UNUSUAL FIRE AND EXPLOSION HAZARDS: None

SECTION V HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE:

ACUTE: If dry sanded, inhalation of dust may cause irritation of the upper respiratory system.
CHRONIC: None Known
EMERGENCY AND FIRST AID PROCEDURES:
EYES: Flush thoroughly with water. If irritation persists, get medical attention.
SKIN: Wash with soap and water.
INGESTION: Call physician.
INHALATION: Remove to fresh air.

UNITED STATES GYPSUM COMPANY



PROTECT FROM FREEZING

KEEP OUT OF REACH OF CHILDREN

Do not apply if temperature is below
55°F (13°C) or above 90°F (32°C)

CAUTION

Avoid Creating Dust. Sand Joints with
Wet Sponge Rather Than Dry Sand-
paper. If Dry Sanding is Necessary,
Ventilate Area and Wear Eye Protection
and a NIOSH or MSHA Approved Res-
pirator for Dust.

**Gold Bond
Building
Products**

**A National Gypsum Division
Charlotte, North Carolina 28211**



A National Gypsum Division

MATERIAL SAFETY DATA SHEET

MSDS NO. 05002 PREPARED BY N.W. KALETA 11/1/85

SECTION I

MANUFACTURER'S NAME GOLD BOND BUILDING PRODUCTS DIVISION OF NATIONAL GYPSUM		EMERGENCY TELEPHONE NO. 704/365-0950
ADDRESS (Number, Street, City, State, and ZIP Code) 2001 REXFORD ROAD, CHARLOTTE, NORTH CAROLINA 28211		
CHEMICAL NAME & SYNONYMS NA	TRADE NAME & SYNONYMS READY MIX JOINT COMPOUND (ALL PURPOSE OR TOPPING)	
CHEMICAL FAMILY NA	FORMULA NA	

ALL USAGE OF NA ON THIS FORM MEANS NOT APPLICABLE.

SECTION II HAZARDOUS INGREDIENTS

CONTAINS ONE OR MORE OF THE FOLLOWING

	CAS NO.	PEL	TLV ACGIH 1985 - 86
CALCIUM CARBONATE	1317-65-3	NOT LISTED	5mg/M ³ RESPIRABLE DUST
MICA	12001-26-2	20MPPCF	3mg/M ³ RESPIRABLE DUST
TALC	14807-96-6	20MPPCF	2mg/M ³ RESPIRABLE DUST
QUARTZ *	14808-60-7	10mg/M ³ $\frac{1}{2} \text{SiO}_2 + 2$ (RESPIRABLE FRACTION)	10mg/M ³ $\frac{1}{2} \text{RESPIRABLE QUARTZ} + 2$

* PRESENT, AS A NATURAL OCCURRING CONSTITUENT.

DOES NOT CONTAIN ASBESTOS. A NON-MERCURIAL PRESERVATIVE IS USED.

SECTION III PHYSICAL DATA

BOILING POINT (°F)	NA	SPECIFIC GRAVITY (H ₂ O = 1)	NA
VAPOR PRESSURE (mm Hg.)	NA	PERCENT VOLATILE BY VOLUME (%)	NA
VAPOR DENSITY (AIR = 1)	NA	EVAPORATION RATE	NA
SOLUBILITY IN WATER	NA	(_____ = 1)	
APPEARANCE AND ODOR WHITE TO GREY PASTE WITH A MILD ACETATE ODOR			

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)	NOT COMBUSTIBLE	FLAMMABLE LIMITS	NA	LC ₅₀	UL ₅₀
EXTINGUISHING MEDIA	NA				
SPECIAL FIRE FIGHTING PROCEDURES	NA				
UNUSUAL FIRE AND EXPLOSION HAZARDS	NA				

SECTION V HEALTH HAZARD DATA

PRIMARY EXPOSURE ROUTE - INHALATION, CONTINUOUS EXPOSURE TO HIGH DUST CONCENTRATIONS MAY IMPAIR LUNG FUNCTION.

FIRST AID EYES - WASH WITH WATER FOR 15 MINUTES.

SEEK MEDICAL AID IF REQUIRED.

SECTION VI REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	
INCOMPATIBILITY (Materials to avoid)			
ACIDS			
HAZARDOUS DECOMPOSITION PRODUCTS RELEASES CO ₂ WHEN HEATED TO DECOMPOSITION			
HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

SCOOP OR SHOVEL UP

WASTE DISPOSAL METHOD

WASTE DISPOSAL - LAND FILL IN ACCORDANCE WITH REGULATIONS

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify Type)

NIOSH/MSHA APPROVED RESPIRATOR FOR DUST IF NEEDED

VENTILATION	LOCAL EXHAUST	NA	SPECIAL	NA
	MECHANICAL (General)		OTHER	NA
PROTECTIVE GLOVES		NOT REQUIRED	EYE PROTECTION	
OTHER PROTECTIVE EQUIPMENT		NA	GOGGLES IF DUSTY	

SECTION IX SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

AVOID FREEZING

OTHER PRECAUTIONS

DO NOT DRY SAND. WET SAND OR SPONGE JOINTS, BEADS AND NAILS.

DISCLAIMER OF LIABILITY:

As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any use of the material. Information contained herein is believed to be true and accurate, but all statements or suggestions are made without any warranty, express or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof.



Varathane

**LIQUID PLASTIC
CLEAR GLOSS**

CAUTION: COMBUSTIBLE
See other cautions on side panel

90 GLOSS

Keep away from heat and open flame.
Avoid prolonged contact with skin and
breathing of vapors or spray mist. Do not
take internally.

Close container after each use.
Use only with adequate ventilation.
KEEP OUT OF REACH OF CHILDREN

DIRECTIONS FOR USE

Surface must be absolutely dry, free from all wax, grease and
oil. Sand with fine sandpaper and wipe off dust using a tack-rag. Use
VARATHANE Liquid Plastic as it comes from the can. If thinning is
needed use mineral spirits.

UNFINISHED WOOD SURFACES: Apply directly to the wood sur-
face. When VARATHANE Liquid Plastic is used as its own sealer, sand-
ing before recoating is recommended for best finish. Where patch
materials are used remove excess from wood surface before finishing.

FINISHED, STAINED OR LACQUERED SURFACES: Sanding is
necessary to remove imperfections on the surface and any sheen
from the previous coating. VARATHANE Liquid Plastic is not recom-
mended over shellac, lacquer sanding sealers or fillers and stains
containing alcohols.

A first-coat application of VARATHANE Liquid Plastic is recom-
mended under most conditions. When exposure or wear is severe,
more coats may be needed. Light sanding between coats is recom-
mended to remove sheen and to promote better adhesion. Where
thorough sanding is difficult, recoating should be done within 6 to 12
hours. If allowed to dry 12 or more hours, surface must be sanded
before recoating.

Heavy applications, applications on redwood, cedar, or woods with a
high oil content, or applications during periods of high humidity or
cool temperatures may cause slower than normal dry. Allow each coat
to dry completely before applying the next coat.

Use brush with paint thinner.

THE FLECTO COMPANY, INC.
FLECTO INTERNATIONAL, LTD., OAKLAND CALIF. 94604
FLECTO COATINGS, LTD., RICHMOND, B.C.

Copyright 1979-1983 The Flecto Co., Inc., Oakland, California
Made in U.S.A. 839101 Litho in U.S.A.



FIFTIETH ANNIVERSARY
1934 - 1984

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Product Name: VARATHANE® Liquid Plastic
Interior Clear Finish, Gloss

Product Number(s): #90

Product Class: Oil-modified Polyurethane

Manufacturer's Name: The Flecto Company, Inc.

Address: 1000 45th Street, Oakland, CA 94608

Emergency Phone: (415) 655-2470

Name of Preparer: Edward M. Quesada

Business Phone: (415) 655-2470

Date prepared: 4/25/86

DOT Hazard Class (49CFR 172.101): Not Regulated
Proper Shipping Name (49CFR 172.101): Paint

UN No. UN 1263

OSHA Flammability Classification: Combustible Liquid - Class II

II. HAZARDOUS INGREDIENTS

<u>Ingredients</u>	<u>CAS Numbers</u>	<u>Weight Percent</u>	<u>Vapor Pressure mm Hg</u>	<u>Exposure Limits in Air</u>		
				<u>ACGIH(TLV)</u>	<u>OSHA(PEL)</u>	<u>Other*</u>
Mineral Spirits (Stoddard Solvent)	8052-41-3	52	2.0	100 ppm	500 ppm	100 ppr

* CAL/OSHA PEL

III. PHYSICAL PROPERTIES

Weight Per Gallon: 7.46 lbs/gal

Boiling Range:

315-390°F

160-200°C

Evaporation Rate (ether = 1): <1

Vapor Density (air=1): >1

Solubility in Water: Negligible

Percent Volatile by Volume: 59.5

Appearance and Odor: Clear amber appearance with a mild aliphatic odor.

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: 105°F TCC
41°C

Flammable Limits in Air, Volume %: Lower: 1.0 Upper: N/A

Fire Extinguishing Materials:

☐ Water Spray

☒ Foam

☒ Carbon Dioxide

☒ Dry Chemical

☐ Other:

Special Firefighting Procedures: Fight as volatile liquid fire. Use water to keep fire exposed containers cool to reduce pressure.

Unusual Fire and Explosion Hazards: Keep away from heat, sparks and open flame.

100% SILICONE RUBBER ADHESIVE SEALANT

Original GE Formula
Fast Cure
35-Year Durability

Contents: 10.3 fl. oz. (304 ml)
Net Weight: 8.1 lb. (3.7 kg)

CAUTION!
Uncured product contact irritates skin.
Read back carefully.

CAUTION! UNCURED PRODUCT CONTACT IRRITATES EYES. EYE PROTECTION RECOMMENDED.

- In case of contact with eyes, immediately flush with water for 15 minutes. If irritation persists, get medical attention.
- Wearing of contact lenses should not handle lenses until all sealant has been cleaned from the fingertips as residual silicone will transfer to lenses and cause severe eye irritation.
- Product releases acetic acid during application and curing.
- Use in a well ventilated area to prevent irritation by vapors.
- Uncured product contact will irritate lips, gums and tongue.
- Uncured product contact may irritate the skin. For cleaning see directions below.
- **KEEP OUT OF THE REACH OF CHILDREN.**
- **FOR MATERIAL SAFETY DATA SHEET OR INFORMATION CALL (518) 237-3330.**

• Not paintable. Paint first.

GE Silicone Sealant seals, insulates, and saves energy by sealing cracks around doors, roofs, and aluminum and high performance windows. It is unaffected by temperature changes (-45°F to 250°F), resistant to most chemicals, and is used on both indoor and outdoor glass, and remains permanently flexible.

Directions:

- Remove all old caulk.
- All surfaces must be dry and free of grease and dirt.
- Cut nozzle to desired size.
- Insert cartridge into operated caulking gun.
- For clean, neat application, apply masking tape on either side of joint.
- For best results, apply ahead of work.

silicone rubber caulk clear

100% SILICONE RUBBER ADHESIVE SEALANT

Original GE Formula
Fast Cure
35-Year Durability
Contents: 10.3 fl. oz. (304 ml)
Net Weight: 8.1 lb. (3.7 kg)

CAUTION!
Uncured product contact irritates skin.
Read back carefully.

MATERIAL SAFETY DATA SHEET
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GE486

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MANUFACTURED BY:

GENERAL ELECTRIC CO.
SILICONE PRODUCTS DIV.
WATERFORD, NY 12188

EMERGENCY TELEPHONE: (24 HRS)
(518) 237-3330

REVISED: 11/04/87
PREPARER: DA POLSINELLI

***** I PRODUCT IDENTIFICATION *****

PRODUCT IDENTIFICATION: GE486 CHEMICAL FAMILY: SILICONE
CHEMICAL NAME: BATHROOM TUB & TILE SEALANT FORMULA: MIXTURE
Caulking?

***** II PRODUCT COMPONENTS *****

PRODUCT COMPOSITION	APPROX. %	ACGIH TLV	OSHA PEL	CAS REG NO.
A. HAZARDOUS				
TRADE SECRET COMPONENT	< 5% NF		NF	NA
TRADE SECRET COMPONENT	< 5% NF		NF	NA
B. NON-HAZARDOUS				

***** III PHYSICAL DATA *****

**PRODUCT INFORMATION

BOILING POINT	: NA (F) NA (C)	% VOLATILE BY VOLUME	: <3
VAPOR PRESSURE(20 C)	: NA MM HG	EVAPORATION RATE	: <1
VAPOR DENSITY(AIR=1)	: NA	(BUTYL ACETATE=1	
FREEZING POINT	: NA (F) NA (C)	SPECIFIC GRAVITY	: 1.035
MELTING POINT	: UNKN (F) UNKN (C)	(WATER=1)	
PHYSICAL STATE	: SOLID	DENSITY	: 1035 KG/M3
ODOR	: AMMONIA	ACIDITY/ALKALINITY	: NA MEG/G
COLOR	: ALMOMD	PH	: NA
SOLUBILITY IN WATER(20 C): INSOLUBLE			
SOLUBILITY IN ORGANIC SOLVENT: PARTIALLY IN TOLUENE (STATE SOLVENT)			

***** IV FIRE AND EXPLOSION DATA *****

FLASH POINT: NA (F) NA (C) BY NA IGNITION TEMP: UNKN (F) UNKN (C)
FLAMMABLE LIMITS IN AIR(%): LOWER NA UPPER NA
EXTINGUISHING MEDIA:
ALL STANDARD FIREFIGHTING MEDIA
SPECIAL FIREFIGHTING PROCEDURES:
NONE KNOWN.

MATERIAL SAFETY DATA SHEET
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GE486

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***** V REACTIVITY DATA *****

STABILITY: X STABLE UNSTABLE HAZARDOUS: POLYMERIZATION WILL NOT OCCUR
HAZARDOUS DECOMPOSITION PRODUCTS:
CARBON MONOXIDE.
CARBON DIOXIDE.
SILICON DIOXIDE.
OXIDES OF NITROGEN.
AMINES.
INCOMPATIBILITY (MATERIALS TO AVOID):
NONE KNOWN.
CONDITIONS TO AVOID:
NONE KNOWN.
DO NOT EXPOSE TO HEAT OR STORE AT TEMPERATURES ABOVE 120°F.

***** VI HEALTH HAZARD DATA *****

ACUTE SIGNS/EFFECTS OF OVEREXPOSURE:
INGESTION:
MAY CAUSE STOMACH DISCOMFORT.
SKIN CONTACT:
UNCURED PRODUCT CONTACT MAY IRRITATE THE SKIN.
INHALATION:
CAUSES MODERATE RESPIRATORY IRRITATION.
APPLIES ONLY IN UNCURED STATE.
EYE CONTACT:
UNCURED PRODUCT CONTACT IRRITATES EYES.
MEDICAL CONDITIONS AGGRAVATED:
NONE KNOWN.
OTHER:
NONE KNOWN.
CHRONIC EFFECTS OF OVEREXPOSURE:
NONE KNOWN.
EMERGENCY AND FIRST AID PROCEDURES:
INGESTION:
RINSE MOUTH WITH WATER SEVERAL TIMES.
SKIN:
TO CLEAN FROM SKIN, REMOVE COMPLETELY WITH A DRY CLOTH OR PAPER TOWEL, BEFORE WASHING WITH DETERGENT AND WATER.
INHALATION:
MOVE PERSON TO FRESH AIR.
EYES:
IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES AND GET MEDICAL ATTENTION IF IRRITATION PERSISTS.
NOTE TO PHYSICIAN:
NONE KNOWN.

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TOXICITY: TRADE SECRET COMPONENT
ACUTE ORAL LD50: 1000 (RAT) MG/KG
ACUTE DERMAL LD50: 5400 (RBT) MG/KG
ACUTE INHALATION LC50: >200 MG/L (RAT)
OTHER: NONE.

?

AMES TEST: UNKNOWN

TOXICITY: TRADE SECRET COMPONENT
ACUTE ORAL LD50: 12,500 (RAT) MG/KG
ACUTE DERMAL LD50: NONE FOUND MG/KG
ACUTE INHALATION LC50: NONE FOUND
OTHER: NONE.

AMES TEST: UNKNOWN

PRINCIPAL ROUTES OF EXPOSURE:

ORAL.
DERMAL - SKIN.
EYES.
INHALATION.

THIS PRODUCT OR ONE OF ITS INGREDIENTS PRESENT 0.1% OR MORE
IS NOT LISTED AS A CARCINOGEN OR SUSPECTED CARCINOGEN BY
NTP, IARC, OR OSHA.

PRODUCTS/INGREDIENTS:

THIS SPACE RESERVED FOR SPECIAL USE.

***** VII SPECIAL PROTECTIVE EQUIPMENT *****

RESPIRATORY PROTECTION:

USE IN A WELL VENTILATED AREA.
USE APPROVED NIOSH RESPIRATORY PROTECTION IF TLV EXCEEDED.....
OR OVER EXPOSURE IS LIKELY.

PROTECTIVE GLOVES:

CLOTH GLOVES.

EYE AND FACE PROTECTION:

SAFETY GLASSES.

OTHER PROTECTIVE EQUIPMENT:

NONE KNOWN.

VENTILATION:

USE ONLY IN WELL VENTILATED AREA.

*** VIII SPILL, LEAK AND DISPOSAL PROCEDURES ***

ACTION TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

SCRAPE OR GATHER MATERIAL AND PLACE IN A SUITABLE CONTAINER
FOR DISPOSAL.
DO NOT PUNCTURE OR INCINERATE CONTAINER. CONTENTS UNDER
PRESSURE.

DISPOSAL METHOD:

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DISPOSAL SHOULD BE MADE IN ACCORDANCE WITH FEDERAL, STATE AND
LOCAL REGULATIONS.
BURY IN A LICENSED LANDFILL ACCORDING TO FEDERAL, STATE, AND
LOCAL REGULATIONS.

***** IX SPECIAL PRECAUTIONS *****
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:
KEEP CONTAINER CLOSED WHEN NOT IN USE.
AVOID CONTACT WITH SKIN AND EYES.
REMOVE CONTACT LENSES BEFORE USING SEALANT. DO NOT HANDLE
LENSES UNTIL ALL SEALANT HAS BEEN CLEANED FROM THE FINGER-
TIPS, NAILS AND CUTICLES. RESIDUAL SEALANT MAY REMAIN ON
FINGERS FOR SEVERAL DAYS AND TRANSFER TO LENSES AND CAUSE
SEVERE EYE IRRITATION.
USE MECHANICAL VENTILATION TO STAY BELOW TLV OF 25 PPM AMMONIA.
PRODUCT RELEASES METHANOL DURING APPLICATION AND CURING.
PRODUCT RELEASES AMMONIA DURING APPLICATION AND CURING.
UNCURED PRODUCT CONTACT MAY IRRITATE EYES.
UNCURED PRODUCT CONTACT MAY IRRITATE SKIN.
CAUTION! CONTENTS UNDER PRESSURE.
ENGINEERING CONTROLS:
EXHAUST VENTILATION
EYEWASH STATIONS.
USE IN A WELL VENTILATED AREA.

** X SHIPPING AND REGULATORY CLASSIFICATION DATA **
DOT SHIPPING NAME: CONSUMER COMMODITY
DOT HAZARD CLASS: ORM-D
DOT LABEL(S): NA
UN/NA NUMBER: NA
PLACARDS: NONE

EXPORT: COMPRESSED GAS NOS. (CONTAINS CHLORODIFLUOROMETHANE AND CHL
NONFLAMMABLE GAS, UN1956, IMO CLASS 2.2.

EPA HAZARD WASTE: NA
OSHA HAZARD CLASS: EYE IRRITANT
CPSC CLASSIFICATION: EYE IRRITANT
TRANSPORTATION CLASS: IMO 2.2 COMPRESSED GAS
RID (OCTI) COMPRESSED GAS
ADR (ECE) COMPRESSED GAS
RAR (IATA) COMPRESSED GAS
NFPA/HMIS CLASSIFICATION: FLAMMABILITY 0 , REACTIVITY 0 , HEALTH 2
ADDITIONAL INFORMATION:
THESE DATA ARE OFFERED IN GOOD FAITH AS TYPICAL VALUES AND NOT
AS A PRODUCT SPECIFICATION. NO WARRANTY, EITHER EXPRESSED OR
IMPLIED, IS MADE. THE RECOMMENDED HANDLING PROCEDURES ARE

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BELIEVED TO BE GENERALLY APPLICABLE. HOWEVER, EACH USER SHOULD
REVIEW THESE RECOMMENDATIONS IN THE SPECIFIC CONTENT OF THE
INTENDED USE.....

.....
THIS PRODUCT CONTAINS A SUBSTANCE(S) THAT IS (ARE) ON THE LIST
OF TOXIC CHEMICALS SUBJECT TO SECTION 313 OF THE SUPERFUND
AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA). THIS SUB-
STANCE MAY BE SUBJECT TO AN ANNUAL SUBMISSION OF A TOXIC
CHEMICAL RELEASE FORM. SUCH SUBSTANCE IF PRESENT AT LESS THAN
ONE PERCENT, IS NOT LISTED UNDER PRODUCT COMPOSITION IN SECTION
II.....

C = CEILING LIMIT	NEGL = NEGLIGIBLE
EST= ESTIMATED	NF = NONE FOUND
NA = NOT APPLICABLE	UNKN = UNKNOWN
NE = NONE ESTABLISHED	REC = RECOMMENDED
ND = NONE DETERMINED	V = RECOMM. BY VENDOR
BY-PRODUCT = REACTION BY-	SKN = SKIN
PRODUCT, TSCA INVENTORY	TS = TRADE SECRET
STATUS NOT REQUIRED UNDER	R = RECOMMENDED
40 CFR PART 720.30(H-2)	MST = MIST

.....
AS A SERVICE TO ITS CUSTOMERS, GE SILICONES DISCLOSES IN THE
MSDS FOR EACH PRODUCT THE PRESENCE OF EXTREMELY HAZARDOUS
SUBSTANCES AND TOXIC CHEMICALS IN THE PRODUCT COMPOSITION. IF
THERE IS NO ENTRY FOUND IN THIS SECTION OF THE MSDS, THERE ARE
NO EXTREMELY HAZARDOUS SUBSTANCES OR TOXIC CHEMICALS AS DEFINED
BY THE LATEST AVAILABLE LIST IN THIS PRODUCT.



**Liquid
Nails**

Brand

**Multi-Purpose
Carpet
Adhesive**

SB-60

ONE GALLON 3.785 L



MACCO® MULTI-PURPOSE

CAUTION

Do not take internally. Close container after each use.
KEEP OUT OF THE REACH OF CHILDREN.

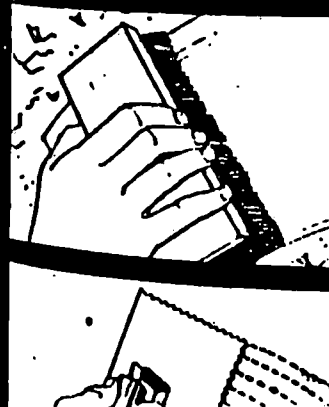
- For the interior installation of carpet
- Nonflammable latex formula
- Low odor
- Freeze-thaw stable

MACCO® Multi-Purpose Carpet Adhesive is designed for the interior installation of carpet. This adhesive may be used to install carpet with backings of jute, rubber, rubber foam, urethane foam and needled non-woven indoor/outdoor carpeting. Adhesive may be applied to clean, dry surfaces of wood, hardboard, underlayment and smooth, cured concrete. On or below grade concrete should be protected with an approved vapor barrier.

DIRECTIONS

SURFACE PREPARATION: Make certain floor surface is clean, dry and free from oil, grease or wax. Maintain a room temperature of 60°F. or above for 24 hours before and after application.

APPLICATION: Spread adhesive evenly over floor with a notched trowel. Ridges should be about 1/8 inch deep. Do not apply adhesive too thinly. Rough or irregular carpet backings require more adhesive. Smooth backings require less adhesive. Trowel only that area which can be covered within 45 minutes. Hot, dry weather will reduce



MATERIAL SAFETY DATA SHEET



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Macco Adhesives
Glidden Coatings & Resins Div.
P.O. Box 197, Wickliffe, Oh. 44092
Emergency Telephone No.:
(216) 953-2150

MNF 305

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SECTION I

CODE IDENTIFICATION MNF 305 DATE PRINTED 12/12/85
PRODUCT IDENTIFICATION SB-60

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT	WEIGHT PERCENT	THRESHOLD LIMIT VALUE	LEL	VAPOR PRESS.
VM & P NAPHTHA CAS NO. - 64742-89-8	6	300 PPM	.9	30.00
ALUMINUM SILICATE (CLAY) CAS NO. - 1332-58-7	26	10 MG/M3		
METHYL ALCOHOL CAS NO. - 67-56-1	3	SKIN 200 PPM	6.0	96.00

SKIN - DENOTES THAT ADDITIONAL EXPOSURE, OVER AND ABOVE AIRBORNE EXPOSURE, MAY RESULT FROM SKIN ABSORPTION. THE THRESHOLD LIMIT VALUE (TLV) IS THE TIME WEIGHTED AVERAGE (TWA) TO WHICH IT IS BELIEVED THAT MOST WORKERS MAY BE EXPOSED 8-10 HOURS PER DAY, 40 HOURS PER WEEK WITHOUT ADVERSE HEALTH EFFECTS.
LEL - THE LOWER EXPLOSIVE LIMIT IS THE LOWEST CONCENTRATION (% OF VOLATILES IN AIR) THAT WILL PRODUCE A FLASH OF FIRE WHEN AN IGNITION SOURCE IS PRESENT.

SECTION III - PHYSICAL DATA

BOILING RANGE NOT DETERMINED WEIGHT PER GALLON 9.61
% VOLATILE BY VOLUME 54.35

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (SETA) ABOVE 200 F LOWER EXPLOSIVE LIMIT NOT DETERMINED
AUTO (PSN) NOT HAZARDOUS

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA

HAZARD CLASS NOT RESTRICTED

EXTINGUISHING MEDIA

DRY CHEMICAL OR FOAM

UNUSUAL FIRE AND EXPLOSION HAZARDS

CLOSED CONTAINERS MAY BURST IF EXPOSED TO EXTREME HEAT OR FIRE.

SPECIAL FIRE FIGHTING PROCEDURES

WATER MAY BE USED TO COOL AND PROTECT EXPOSED CONTAINERS.

SECTION V - HEALTH HAZARD DATA

ROUTE OF ENTRY INHALATION
SKIN
EYES
INGESTION

EFFECTS OF OVEREXPOSURE

IRRITATION OF EYES, SKIN, RESPIRATORY TRACT. PROLONGED INHALATION MAY LEAD TO MUCOUS MEMBRANE IRRITATION, FATIGUE, DROWSINESS, DIZZINESS AND/OR LIGHTEADEDNESS, HEADACHE, UNCOORDINATION, NAUSEA, VOMITING, BLURRED VISION, INTOXICATION, ANESTHETIC EFFECT OR NARCOSIS, RESPIRATORY FAILURE. PROLONGED OR REPEATED CONTACT CAN CAUSE DERMATITIS, DEFATTING, BLURRED VISION, TEARING OF EYES. POSSIBLE VOMITING, DIARRHEA, BLINDNESS, DEATH.
NOTICE - REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. INTENTIONAL MISUSE BY DELIBERATELY CONCENTRATING AND INHALING THE CONTENTS MAY BE HARMFUL OR FATAL.

EMERGENCY AND FIRST AID PROCEDURES

INHALATION MOVE PERSON TO WELL VENTILATED AREA.
GET EMERGENCY MEDICAL ATTENTION.
ADMINISTER OXYGEN OR ARTIFICIAL RESPIRATION IF NECESSARY.

MATERIAL SAFETY DATA SHEET



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Glidden Coatings & Resins Div.
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SECTION V - HEALTH HAZARD DATA

SKIN CONTACT FLUSH FROM SKIN WITH WATER. THEN WASH THOROUGHLY WITH SOAP AND WATER.
REMOVE CONTAMINATED CLOTHING.
WASH CONTAMINATED CLOTHING BEFORE RE-USE.

EYE CONTACT FLUSH IMMEDIATELY WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. GET EMERGENCY MEDICAL ATTENTION.

INGESTION GET EMERGENCY MEDICAL ATTENTION.

SECTION VI - REACTIVITY DATA

STABILITY STABLE

COMPATIBILITY OXIDIZERS
ACIDS
BASES
AMINES

CONDITIONS TO AVOID

ELEVATED TEMPERATURES
CONTACT WITH OXIDIZING AGENT

HAZARDOUS DECOMPOSITION PRODUCTS

CARBON MONOXIDE
CARBON DIOXIDE

HAZARDOUS POLYMERIZATION

WILL NOT OCCUR

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

ELIMINATE ALL SOURCES OF IGNITION.
VENTILATE AREA.
SMALL SPILLS MAY BE COLLECTED WITH ABSORBENT MATERIALS.
LARGE SPILLS - OBSERVE STEPS FOR SMALL SPILLS. SHUT OFF LEAK IF SAFE TO DO SO. DIKE AND CONTAIN SPILL. PUMP TO

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SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

STORAGE OR SALVAGE VESSELS. USE ABSORBENT TO PICK UP EXCESS RESIDUE. KEEP SALVAGE MATERIAL AND RINSE WATER OUT OF SEWERS OR WATER COURSES. COMPLY WITH ALL APPLICABLE REGULATIONS FOR HEALTH AND POLLUTION CONTROL.

WASTE DISPOSAL

DISPOSE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS. AVOID DISCHARGE TO NATURAL WATERS.

SECTION VIII - SPECIAL PROTECTION INFORMATION

CONTROL ENVIRONMENTAL CONCENTRATIONS BELOW APPLICABLE STANDARDS. WHERE RESPIRATORY PROTECTION IS REQUIRED, USE ONLY NIOSH/MSHA APPROVED RESPIRATORS IN ACCORDANCE WITH OSHA STANDARD 29 CFR 1910.134.

VENTILATION

PROVIDE DILUTION VENTILATION OR LOCAL EXHAUST TO PREVENT BUILD-UP OF VAPORS.

PERSONAL PROTECTIVE EQUIPMENT

EYE WASH
SAFETY SHOWER
SAFETY GLASSES OR GOGGLES
IMPERVIOUS GLOVES
IMPERVIOUS CLOTHING

SECTION IX - SPECIAL PRECAUTIONS

HANDLING AND STORAGE

STORE BELOW 100 F.

OTHER PRECAUTIONS

USE ONLY WITH ADEQUATE VENTILATION.
DO NOT TAKE INTERNALLY.
KEEP OUT OF REACH OF CHILDREN.
AVOID CONTACT WITH SKIN AND EYES, AND BREATHING OF VAPORS.
WASH HANDS THOROUGHLY AFTER HANDLING, ESPECIALLY BEFORE EATING OR SMOKING.
KEEP CONTAINERS TIGHTLY CLOSED AND UPRIGHT WHEN NOT IN USE.
EMPTY CONTAINERS MAY CONTAIN HAZARDOUS RESIDUES.

BULL Flex Caulk

- Seals between dissimilar materials
- Lasts up to 3 times longer than oil-based caulk
- Flexible & paintable

WARNING! FLAMMABLE

Read carefully label on back panel

10.5 FL. OZ. (310 mL)

Withstands temperatures from -40°F to 200°F. Meets Federal Specification 151-1. Available in white and colors. Made in U.S.A. in federally inspected plant.

Seals joint between wood, metal, stone, masonry and other construction materials.

USE DIRECTIONS:

1. Cut tip to desired bead size. Puncture seal for use.
2. Apply to clean, dry, surfaces. For best results, remove all old caulking compound.
3. Dry, if desired.
4. Excess material may be removed with a utility knife.

CAUTION:

Do not exceed 1/4" x 1/4".
If joint exceeds 1/4", use polyethylene backer rod material, such as oakum, as backer.
Do not use in temperatures below 40°F. Heat to room temperature prior to application.

WARRANTY: If you are not completely satisfied with this product's performance when used in accordance with instructions on back of container, return unused product to DAP Inc., Dayton, Ohio 45401 for product replacement.

CONTAINS PETROLEUM
Keep away from heat, sparks and fire.
Do not take internally.

KEEP OUT OF REACH OF CHILDREN



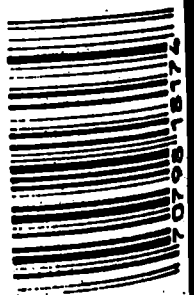
Dependable

66041

© DAP Inc.

Dayton, Ohio 45401

Made in U.S.A.



0

MATERIAL SAFETY DATA SHEET

NAME OR NUMBER: DAP Butyl-Flex Caulk (All Colors)

SECTION VI REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: Excessive heat

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers and caustics

HAZARDOUS DECOMPOSITION PRODUCTS: Normal combustion products, i.e. CO₂, NO₂

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: None

SECTION VII SPILL, LEAK AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Scrape up dried material and place into containers.

WASTE DISPOSAL METHOD: Discarded spill residue may be incinerated. Do not incinerate sealed containers. Dispose according to Federal, State and local regulations. CANNOT be disposed of in a landfill.

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: If 8-hour exposure limit or value is exceeded for any component, use approved NIOSH/MSHA respirator. Consult your safety equipment supplier and the OSHA regulation, 29 CFR 1910.134 for respirator requirements.

VENTILATION: Provide sufficient mechanical ventilation (local or general exhaust) to maintain exposure below PEL and TLV. Vapors are heavier than air and will collect in low areas.

PROTECTIVE GLOVES: Solvent impervious gloves

EYE PROTECTION: Goggles or safety glasses with side shields

OTHER PROTECTIVE EQUIPMENT: Provide eyewash and solvent impervious apron if body contact with product may occur. Barrier creams may be used.

SECTION IX SPECIAL PRECAUTIONS

HANDLING AND STORING: Keep containers from heat, flames and direct sunlight. Do not smoke. Do not store at temperatures above 120°F. Provide cross ventilation in storage area. Keep containers tightly closed when not in use. Keep out of reach of children. Avoid skin contact.

OTHER PRECAUTIONS: Contains flammable solvent. Vapor harmful and may cause flash fire. Harmful or fatal if swallowed. Use only with adequate ventilation. Prevent buildup of vapors. Avoid prolonged or repeated breathing of solvent vapor(s) and contact with skin. Wash contaminated clothing before reuse. Extinguish all flames and pilot lights and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapor is gone. Intentional misuse by deliberately concentrating and inhaling vapors may be harmful or fatal.

MATERIAL SAFETY DATA SHEET

MSDS NO. 10005

DAP INC.

EMERGENCY PHONE NO.: (513) 253-7154

HMIS HAZARD RATINGS

Minimal	0	Acute Health	1
Slight	1	Flammability	3
Moderate	2	Reactivity	0
Serious	3		
Severe	4		

SECTION I

PRODUCT NAME OR NUMBER: DAP Butyl-Flex Caulk (All Colors)

MANUFACTURERS NAME: DAP Inc.

ADDRESS: P.O. Box 277
Dayton, Ohio 45401

PROPER SHIPPING NAME (49 CFR 172.101): Consumer Commodity

D.O.T. HAZARD NAME (49 CFR 172.101): ORM-D

D.O.T. ID NO. (49 CFR 172.101): NA

D.O.T. HAZARD CLASS (49 CFR 172.101): None

RCRA HAZARD CLASS - if discarded (40 CFR 261): D001-Ignitable

E.P.A. PRIORITY POLLUTANTS (40 CFR 122.53): None

CAS NO.: Mixture

GENERIC DESCRIPTION: Caulk

SECTION II INGREDIENTS

<u>HAZARDOUS</u>	<u>% RANGE</u>	<u>CAS#</u>	<u>TSCA INVENTORY (EPA)</u>
Mineral Spirits	1-10	8030-30-6	Yes
VM&P Naphtha	1-5	8030-30-6	Yes
<u>NON-HAZARDOUS</u>			
Calcium Carbonate	30-45	1317-65-3	NA
Talc	15-30	14807-96-6	NA
Polybutene	5-20	NA	NA
Soybean Oil	< 5	NA	NA
Butyl Rubber	5-20	NA	NA

SECTION III PHYSICAL DATA

BOILING POINT: 212-392°F

SPECIFIC GRAVITY (H₂O = 1): 1.46

VAPOR PRESSURE (mmHg): Not available

VAPOR DENSITY (AIR = 1): Not available

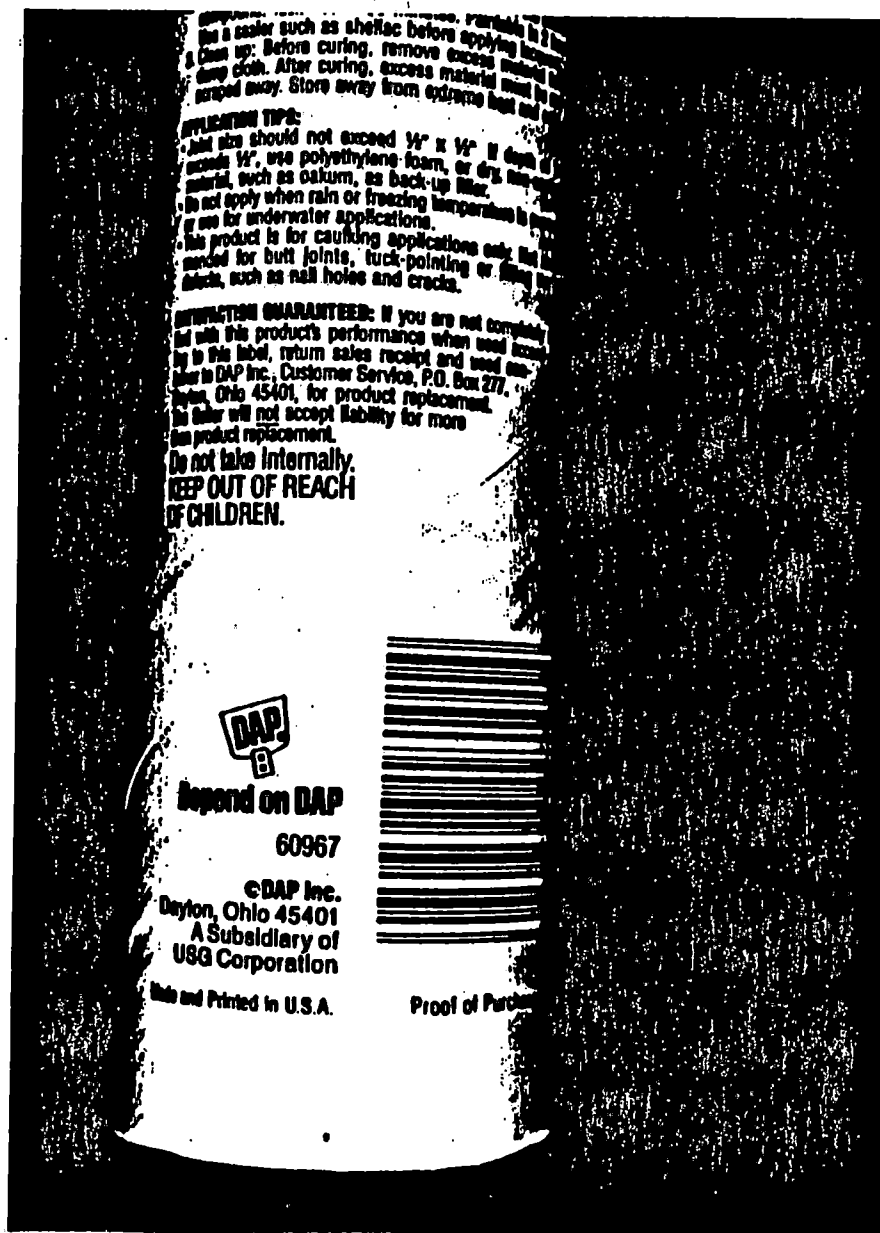
PERCENT VOLATILE BY VOLUME (%): 15

EVAPORATION RATE: Not available

SOLUBILITY IN WATER: Negligible

MATERIAL IS: LIQUID SOLID GAS X PASTE POWDER

COLOR AND APPEARANCE: Opaque paste with a petroleum distillate odor



...a sealer such as sheetrock before applying...
Clean up: Before curing, remove excess material with a damp cloth. After curing, excess material must be scraped away. Store away from extreme heat and cold.

APPLICATION TIPS:

- Joint size should not exceed 1/4" x 1/4". If depth exceeds 1/4", use polyethylene foam, or dry sawdust material, such as oakum, as back-up filler.
- Do not apply when rain or freezing temperatures are expected or for underwater applications.
- This product is for caulking applications only. Not intended for butt joints, tuck-pointing or filling voids, such as nail holes and cracks.

WARRANTY GUARANTEE: If you are not completely satisfied with this product's performance when used according to this label, return sales receipt and used container to DAP Inc., Customer Service, P.O. Box 277, Dayton, Ohio 45401, for product replacement. The dealer will not accept liability for more than product replacement.

**Do not take internally.
KEEP OUT OF REACH
OF CHILDREN.**



Depend on DAP

60967

**DAP Inc.
Dayton, Ohio 45401
A Subsidiary of
USG Corporation**

Made and Printed in U.S.A.

Proof of Purchase

MATERIAL SAFETY DATA SHEET

MSDS NO. 10019

DAP Inc.

EMERGENCY PHONE NO.: (513) 253-7154

<u>HMIS HAZARD RATINGS</u>			
Minimal	0	Acute Health	1
Slight	1	Flammability	0
Moderate	2	Reactivity	0
Serious	3		
Severe	4		

SECTION I

PRODUCT NAME OR NUMBER: DAP Acrylic Latex Caulk With Silicone (Clear)

MANUFACTURERS NAME: DAP Inc.

ADDRESS: P.O. Box 277
Dayton, Ohio 45401

PROPER SHIPPING NAME (49 CFR 172.101): NA

D.O.T. HAZARD NAME (49 CFR 172.101): NA

D.O.T. ID NO. (49 CFR 172.101): NA

D.O.T. HAZARD CLASS (49 CFR 172.101): NA

RCRA HAZARD CLASS - if discarded (40 CFR 261): NA

E.P.A. PRIORITY POLLUTANTS (40 CFR 122.53): None

CAS NO.: Mixture

GENERIC DESCRIPTION: Caulk

SECTION II INGREDIENTS

<u>HAZARDOUS</u>	<u>% RANGE</u>	<u>CAS#</u>	<u>TSCA INVENTORY (EPA)</u>
Ethylene Glycol	<3	107-21-1	Yes
<u>NON-HAZARDOUS</u>			
White mineral oil	5-20	8042-47-5	NA
Water	30-45	NA	NA
Acrylic latex	40-55	NA	NA
Acrylic emulsion copolymer	3-15	25212-88-8	NA

SECTION III PHYSICAL DATA

BOILING POINT: NA

SPECIFIC GRAVITY (H₂O = 1): 1.04

VAPOR PRESSURE (mmHg): 17.5 @ 20°C

VAPOR DENSITY (AIR = 1): Not available

PERCENT VOLATILE BY VOLUME (%): 38

VOC LESS WATER LESS EXEMPT SOLVENT (g/liter): 5

VOC MATERIAL (g/liter): 3

EVAPORATION RATE: Not available

SOLUBILITY IN WATER: Negligible

MATERIAL IS: LIQUID SOLID GAS X PASTE POWDER

ODOR AND APPEARANCE: Mild ammonia odor; clear when dry

PRODUCT NAME OR NUMBER: DAP Acrylic Latex Caulk With Silicone (Clear)

SECTION VII SPILL, LEAK AND DISPOSAL PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Use absorbent material or scrape up dried material and place into containers.

WASTE DISPOSAL METHOD: Discarded spill residue may be incinerated. Do not incinerate sealed containers. Dispose according to Federal, State and local regulations. Liquids CANNOT be disposed of in a landfill.

SECTION VIII SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION: If 8-hour exposure limit or value is exceeded for any component, use an approved NIOSH/MSHA respirator. Consult your safety equipment supplier and the OSHA regulation, 29 CFR 1910.134 for respirator requirements.

VENTILATION: Provide sufficient mechanical ventilation (local or general exhaust) to maintain exposure below PEL and TLV.

PROTECTIVE GLOVES: Recommended for prolonged or repeated contact with skin

EYE PROTECTION: Goggles or safety glasses with side shields

OTHER PROTECTIVE EQUIPMENT: Not required

SECTION IX SPECIAL PRECAUTIONS

HANDLING AND STORING: Keep containers from excessive heat and freezing. Keep containers tightly closed when not in use. Keep out of reach of children.

OTHER PRECAUTIONS: None

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PREPARED BY: A.M. Gassner

REVIEWED BY: S.C. Lonneman

DATE: August 31, 1987

REVISED: Original

U.S. DEPARTMENT OF LABOR

WORKPLACE STANDARDS ADMINISTRATION
Bureau of Labor Standards

MATERIAL SAFETY DATA SHEET

40-41

SECTION I

MANUFACTURER'S NAME Lambron Industries Inc.		EMERGENCY TELEPHONE NO. 316.84
ADDRESS (Number, Street, City, State, and ZIP Code) 20 Reed Place, Amityville, N.Y. 11701		
CHEMICAL NAME AND SYNONYMS Aluminum Sheet, Aluminum Foil		TRADE NAME AND SYNONYMS Alloy 3003
CHEMICAL FAMILY Aluminum Alloys	FORMULA SEE SECTION II	

SECTION II HAZARDOUS INGREDIENTS

ALLOY NOMINAL COMPOSITION	%	TLV (Units)	ALLOY NOMINAL COMPOSITION	%	TLV (Units)
ALUMINUM	> 96.6	10mg/m ³	CHROMIUM	< .05	.5mg/m ³
SILICON	< 0.6	10mg/m ³	ZINC	< .10	10mg/m ³
IRON	< 0.7	5mg/m ³	TITANIUM	< .05	10mg/m ³
COPPER	< .20	1mg/m ³	OTHERS, TOTAL	< .15	
MANGANESE	< 1.5	1mg/m ³			
MANGANIUM	< .05	10mg/m ³			

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES

Ozone may be emitted as a by-product during welding.

TLV (Units)
0.1PPM

SECTION III PHYSICAL DATA

BOILING POINT (°F) Pure Aluminum	3733	SPECIFIC GRAVITY (H ₂ O=1)	2.7
VAPOR PRESSURE (mm Hg)	N/A	PERCENT VOLATILE BY VOLUME (%)	N/A
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (=1)	N/A
SOLUBILITY IN WATER	INSOL.		

APPEARANCE AND ODOR Tin-White, Malleable, Ductile Metal, With Somewhat Bluish Tint.

SECTION IV FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	N/A	FLAMMABLE LIMITS	N/A	LM	UM
EXTINGUISHING MEDIA Dry powder fire extinguishing agents are recommended.					
SPECIAL FIRE FIGHTING PROCEDURES To spray water on burning metal may cause an explosion which would splatter flaming particles of metal great distances.					
USUAL FIRE AND EXPLOSION HAZARDS Aluminum dust is a moderate fire and explosion hazard when exposed to heat or flame, and is considered a moderate fire hazard by chemical reaction.					

Material Safety Data Sheet

May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor

Occupational Safety and Health Administration

(Non-Mandatory Form)

Form Approved

OMB No. 1218-0072



IDENTITY (As Used on Label and List)

PELLETIZED LIMESTONE

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section IManufacturer's Name
White Stone CompanyEmergency Telephone Number
703-762-5563Address (Number, Street, City, State, and ZIP Code)
P. O. Drawer WTelephone Number for Information
703-762-5563

St. Paul

Date Prepared
6-3-86

Virginia 24283

Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specify Chemical Identity, Common Name(s))

OSHA PEL

ACGIH TLV

Other Limits
Recommended

% (optional)

Ammonium Lignin Sulfonate (see attached material safety data sheet)

3%

Section III — Physical/Chemical Characteristics

Boiling Point

NA

Specific Gravity ($H_2O = 1$)

2.79

Vapor Pressure (mm Hg.)

NA

Melting Point

NA

Vapor Density (AIR = 1)

NA

Evaporation Rate

NA

(Butyl Acetate = 1)

Solubility in Water

Insoluble

Appearance and Odor

Dark Gray with slight odor

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)

NA

Flammable Limits

NA

LEL

UEL

Extinguishing Media

NA

Special Fire Fighting Procedures

NA

Unusual Fire and Explosion Hazards

None

Non-toxic Material

Hygiene Practices

Protective Clothing or Equipment
None

Not required

Mechanical (Remove)

Local Exhaust

It excessive dust, suggest acceptable mask, TC-11C-170 MSA/NIOSH

Don VII - Control Measures

Precautions

None

None is to be Taken in Handling and Storing
Score in Dry Place

Conventional Satisfactory Landfill

Stored in or any other conventional cleaning method

Don VII - Precautions for Safe Handling and Use

of and Fire and Precautions

NA

in Containers
May Aggravated by Exposure

Non-toxic

and Symptoms of Exposure

Non-toxic

Regency
NTP?

WAC Management?

OSHA Regulation?

in Measures (Acute and Chronic)

Non-toxic

(4) of Entry

Don VI - Health Hazard Data

Some
May Cause
Irritation

Will Not Occur

X

Will generate CO₂ when reacting with acids

Some Decomposition or Byproducts

Incompatible with acids

Reactivity (Materials to Avoid)

State

X

Unstable

Contains to Avoid

Don V - Reactivity Data

2110+200

MATERIAL SAFETY DATA SHEET

ICC88560

PAGE 01 OF 04

INLAND CONTAINER CORPORATION
P.O. BOX 299
NEW JOHNSONVILLE, TN 37134

EMERGENCY CONTACT:
JERRY RAGAN, TECHNICAL SUPT.
TELEPHONE:
(615)-535-2165

SUBSTANCE IDENTIFICATION

CAS-NUMBER 8061-53-8

SUBSTANCE: LIGNO 10 AMMONIUM LIGNIN SULFONATE

TRADE NAMES/SYNONYMS: AMMONIUM LIGNIN SULFONATE; LIGNOSULFONIC ACID, AMMONIUM SALT; TREX LTA; MANSA AM-S; LIGNOSOL TSD; LIGNOSOL TSF 65; ORZAN A; ORZAN P; ZENA DIS-TR; TOTANIN; ICC88560

CERCLA RATINGS (SCALE 0-3): HEALTH=1 FIRE=1 REACTIVITY=0 PERSISTENCE=0
NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=1 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

PERCENT: 100.0 COMPONENT: LIGNO 10 AMMONIUM LIGNIN SULFONATE

EXPOSURE LIMITS:

5 MG/M3 (RESPIRABLE DUST) OSHA TWA; 15 MG/M3 (TOTAL DUST) OSHA TWA.
5 MG/M3 (RESPIRABLE DUST) ACGIH TWA; 15 MG/M3 (TOTAL DUST) OSHA TWA.

PHYSICAL DATA

DESCRIPTION: TAN TO BROWN POWDER WITH SLIGHT ODOR OR BROWN LIQUID WITH

A WOODY ODOR. pH: 4.2-5.0 (3% SOL) SOLUBILITY IN WATER: 100%
Flash point 135°F
Boiling Point 212°F

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
SLIGHT FIRE HAZARD WHEN EXPOSED TO HEAT OR FLAME.
FLAMMABLE SOLIDS MAY PROVIDE CONDITIONS FOR A DUST EXPLOSION.

UPPER EXPLOSIVE LIMIT: 3.5 OZ./CU. FT.

LOWER EXPLOSIVE LIMIT: 0.2 OZ./CU. FT.

AUTOIGNITION TEMP.: 848 F (400 C) (FOR DUST)

FIREFIGHTING MEDIA:

DRY CHEMICAL, CARBON DIOXIDE, WATER SPRAY OR FOAM
(1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FOR LARGER FIRES, USE WATER SPRAY, FOG OR ALCOHOL FOAM
(1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5800.3).

FIREFIGHTING:

MOVE CONTAINER FROM FIRE AREA IF POSSIBLE. DO NOT SCATTER SPILLED MATERIAL WITH MORE WATER THAN NEEDED FOR FIRE CONTROL. DIVE FIRE CONTROL WATER FOR LATER DISPOSAL (1984 EMERGENCY RESPONSE GUIDEBOOK, DOT P 5000.3, GUIDE PAGE 31).

USE AGENTS SUITABLE FOR TYPE OF SURROUNDING FIRE. AVOID BREATHING HAZARDOUS VAPORS. KEEP UPWIND (BUREAU OF EXPLOSIVES, EMERGENCY HANDLING OF HAZARDOUS MATERIALS IN SURFACE TRANSPORTATION, 1991).

TOXICITY

>20,000 MG/KG ORAL-RAT LD50 (CROWN ZEELERBACH MSDS); CARCINOGEN STATUS: NONE
THE TOXICOLOGICAL PROPERTIES OF LIGNO 10 AMMONIUM LIGNIN SULFONATE HAVE NO BEEN FULLY QUANTIFIED. IT MAY BE IRRITATING TO THE EYES, SKIN AND MUCOUS MEMBRANES.

HEALTH EFFECTS AND FIRST AID**INHALATION:**

ACUTE EXPOSURE: NO DATA AVAILABLE. INHALATION OF HIGH CONCENTRATIONS OF TH MAY BE IRRITATING TO THE UPPER RESPIRATORY TRACT.

CHRONIC EXPOSURE: NO DATA AVAILABLE.

FIRST AID- REMOVE FROM EXPOSURE AREA TO FRESH AIR IMMEDIATELY. IF BREATHING HAS STOPPED, PERFORM ARTIFICIAL RESPIRATION. KEEP AFFECTED PERSON WARM & AT REST. GET MEDICAL ATTENTION.

SKIN CONTACT:

ACUTE EXPOSURE: DIRECT CONTACT WITH THE LIQUID SOLUTION MAY CAUSE IRRITATION. IT IS NOT KNOWN IF THE DUST OF THIS SUBSTANCE WILL CAUSE IRRITATION OF THE SKIN

CHRONIC EXPOSURE: REPEATED OR PROLONGED EXPOSURE TO THE LIQUID MAY CAUSE DERMATITIS.

FIRST AID- REMOVE CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP OR MILD DETERGENT AND LARGE AMOUNTS OF WATER UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

EYE CONTACT:

ACUTE EXPOSURE: DIRECT CONTACT WITH THE DUST OR LIQUID FORM OF THIS SUBSTANCE MAY CAUSE IRRITATION WITH REDNESS AND PAIN.

CHRONIC EXPOSURE: REPEATED OR PROLONGED EXPOSURE TO THE DUST OR LIQUID FOR OF THIS SUBSTANCE MAY CAUSE CONJUNCTIVITIS.

FIRST AID- WASH EYES IMMEDIATELY WITH LARGE AMOUNTS OF WATER, OCCASIONALLY LIFTING UPPER AND LOWER LIDS. UNTIL NO EVIDENCE OF CHEMICAL REMAINS (APPROXIMATELY 15-20 MINUTES). GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:

ACUTE EXPOSURE: NO HUMAN DATA AVAILABLE. A DOSE OF GREATER THAN 20,000 MG/ WAS REQUIRED TO KILL 50% OF A TEST POPULATION OF RATS. THE SYMPTOMS WERE

NOT REPORTED.

CHRONIC EXPOSURE: NO DATA AVAILABLE.

FIRST AID- TREAT SYMPTOMATICALLY AND SUPPORTIVELY. GET MEDICAL ATTENTION IMMEDIATELY.

ANTIDOTE:
NO SPECIFIC ANTIDOTE. TREAT SYMPTOMATICALLY AND SUPPORTIVELY.

REACTIVITY

REACTIVITY:
STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.

INCOMPATIBILITIES:
STRONG OXIDIZERS: POSSIBLE IGNITION.
STRONG ALKALIS: MAY RELEASE CORROSIVE AMMONIA.

DECOMPOSITION:
THERMAL DECOMPOSITION MAY RELEASE TOXIC OXIDES OF CARBON, SULFUR, AND NITROGEN.

POLYMERIZATION:
NOT KNOWN TO OCCUR.

CONDITIONS TO AVOID

MAY BURN BUT DOES NOT IGNITE READILY.

SPILL AND LEAK PROCEDURES

OCCUPATIONAL SPILL:
SWEEP UP AND PLACE IN SUITABLE CLEAN, DRY CONTAINERS FOR LATER DISPOSAL.
DO NOT FLUSH WITH WATER. KEEP UNNECESSARY PEOPLE AWAY.

PROTECTIVE EQUIPMENT

VENTILATION:
PROVIDE GENERAL DILUTION VENTILATION TO MEET PUBLISHED EXPOSURE LIMITS.

RESPIRATOR:
THE SPECIFIC RESPIRATOR SELECTED MUST BE BASED ON THE CONTAMINATION LEVELS FOUND IN THE WORK PLACE. MUST NOT EXCEED THE WORKING LIMITS OF THE RESPIRATOR AND BE JOINTLY APPROVED BY THE NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH AND THE MINE SAFETY AND HEALTH ADMINISTRATION.
THE FOLLOWING RESPIRATORS ARE RECOMMENDED BASED ON THE DATA FOUND IN THE PHYSICAL DATA, HEALTH EFFECTS AND TOXICITY SECTIONS. THEY ARE RANKED IN ORDER FROM MINIMUM TO MAXIMUM RESPIRATORY PROTECTION:

CHEMICAL CARTRIDGE RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE(S) WITH A HIGH-EFFICIENCY PARTICULATE FILTER AND FULL FACEPIECE.

HIGH-EFFICIENCY PARTICULATE RESPIRATOR WITH A FULL FACEPIECE.

POWERED AIR-PURIFYING RESPIRATOR WITH A HIGH-EFFICIENCY FILTER WITH A FULL FACEPIECE.

TYPE 'C' SUPPLIED-AIR RESPIRATOR WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE OR WITH A FULL FACEPIECE, HELMET OR HOOD OPERATED IN CONTINUOUS-FLOW MODE.

SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS
SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE.

CLOTHING:

EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE (IMPERVIOUS) CLOTHING AND EQUIPMENT TO PREVENT REPEATED OR PROLONGED SKIN CONTACT WITH THIS SUBSTANCE.

GLOVES:

EMPLOYEE MUST WEAR APPROPRIATE PROTECTIVE GLOVES TO PREVENT CONTACT WITH THIS SUBSTANCE.

EYE PROTECTION:

EMPLOYEE MUST WEAR SPLASH-PROOF OR DUST-RESISTANT SAFETY GOGGLES TO PREVENT EYE CONTACT WITH THIS SUBSTANCE.

AUTHORIZED BY: INLAND CONTAINER CORPORATION
CREATION DATE: 03/04/86 REVISION DATE: 03/17/86



National Association of Home Builders

15th and M Streets, N.W., Washington, D.C. 20005
Telex 89-2600 (202) 822-0200 (800) 368-5242

Martin Perlman
1990 President

November 8, 1990

OSHA
DOCKET OFFICER

DATE NOV 8 1990
TIME 12:14 p.m.

Docket Office
Docket No. S-776
Occupational Safety and Health Administration
U.S. Department of Labor
200 Constitution Avenue, N.W., Room N2625
Washington, D.C. 20210

Dear Sir:

Re: Comments on Occupant Protection in Motor Vehicles

On behalf of the more than 157,000 members of the National Association of Home Builders, I am pleased to submit these comments in response to OSHA's Notice of Proposed Rulemaking entitled, "Occupant Protection in Motor Vehicles," 55 Fed. Reg. 28,727 (July 12, 1990).

Preliminary Comments

Initially, I should note that NAHB policy fully supports the goal of increasing safety in the construction industry through private-sector initiatives. At the same time, we oppose those proposals that fail to distinguish between residential and commercial construction, and those that mandate redundant and unnecessary paperwork requirements in our industry.

OSHA should recognize that construction is one of the most unique industries within OSHA's jurisdiction. Our members typically employ workers at multiple jobsites in scattered locations. Employee turnover is high, and each jobsite is constantly changing in scope, location, and character. Much of the work is done outdoors, and our employers generally maintain minimal, if any, administrative support services on-site. Offices, meeting rooms, and training facilities are virtually unheard of in many sectors of the industry, particularly in the residential sector, where builders often "work out of their trucks." In short, any rule that requires extensive amounts of formal employee training presents unusual problems for the construction industry.

Overview of the Proposed Rule

The OSHA proposal is a generic, performance-oriented regulation which focuses on three main issues: 1) mandating that employers require each employee to wear safety belts when operating a motor vehicle for official business; 2) mandating the use of helmets when operating motorcycles; and 3) requiring employers to develop and implement employee driver safety awareness programs. Our comments will focus on the first and third issues, which are of primary concern to us.

Occupant Safety Belts

Subsection (c)(1) of the proposal would provide as follows:

"The employer shall require that each employee on official business, whether operating or occupying a motor vehicle equipped with safety belts or otherwise required by Federal regulations to have safety belts, to have an occupant safety belt properly fastened at all times while the vehicle is in motion."

Although NAHB generally supports any rule which will reduce employee injuries while on the job, there are several clarifications which should be made in this provision to avoid possible enforcement problems in the field.

First and foremost, OSHA should clarify that an employer's obligation under the rule does not extend beyond requiring employees to wear belts. Employers should not be required to guarantee, under threat of an OSHA citation, that the belts will actually be worn. OSHA has indicated that this is the official agency position, but it should be codified in the rule itself.

Secondly, OSHA should recognize that many of the vehicles used in the construction industry are old and/or do not fall into one of the categories of vehicles required to have belts under federal law. In our view, employers should not be required by this rule to install safety belts in their vehicles, regardless of whether federal law may have required the vehicle manufacturer to do so. The "beltless vehicle" situation is beyond the scope of this rule. However, OSHA may wish to consider an explicit prohibition on the deliberate removal of existing safety belts in vehicles used for work purposes.

Finally, the rule should recognize that, in some situations, the use of safety belts may contribute to, rather than reduce, employee injuries and fatalities. OSHA recognized these types of situations in the preamble to the proposed rule (see 55 Fed. Reg. at 28,733), but in our view, this limitation should be made explicit in the rule itself.

In keeping with these concerns, NAHB suggests the following language for Subsection (c)(1) of the final rule:

"(i) The employer shall adopt a policy requiring each employee who, while on official business, operates or occupies a motor vehicle which is equipped with safety belts to have such safety belt properly fastened at all times while the vehicle is in motion. This provision shall not apply to open-cab or similar types of motor vehicles that do not have roofs or similar overhead protection and where employees might be trapped during a roll-over accident if safety belts were used.

(ii) An employer who can document that employees were required to comply with the provisions of Subsection (c)(1)(i) of this rule shall be deemed to be in compliance with this subsection regardless of whether its employees are in fact wearing safety belts."

Driver Safety Awareness -- Overview

Subsection (c)(3) of the proposed rule would require employers to implement driver safety awareness training programs for all employees who routinely use motor vehicles while on the job. The rule sets forth the minimum topics to be addressed in such training, and the minimum qualifications of the individual who develops the training programs. Triennial "refresher training" would also be required.

Again, NAHB supports any OSHA effort to increase employee awareness of workplace hazards, and methods by which such hazards can be reduced. However, we have serious reservations about any OSHA training requirement which is, by the agency's own admission, of questionable value and duplicative of training already required in most states before an individual can get a driver's license. Our comments will thus focus on (a) the need for this type of a requirement at the federal level, and (b) our suggestions for making such a requirement workable in the construction industry.

Needs Assessment

As OSHA acknowledges in its NPRM, "[t]he evidence regarding the effectiveness of driver training in reducing motor vehicle accidents is mixed." 55 Fed. Reg. at 28730. The NPRM cites a 1985 review of 14 controlled studies of the effects of defensive driving courses which concluded that "the best available evidence does not support the hypothesis that DDCs decrease the likelihood of motor vehicle crashes." *Id.* The NPRM also cites a 1989 study by the Insurance Institute for Highway Safety (IIHS) which, after reviewing 65 DDC evaluation studies, concluded that these programs typically resulted in a reduction of the number of

traffic violations that a driver received, but not the number of vehicle crashes. The IIHS study suggests that one reason for this may be that crash involvement is less dependent on the behavior of a particular driver and more dependent on environmental circumstances and the behavior of other drivers.

IIHS also produces a yearly report which summarizes, after careful research, "what really works - and what doesn't work - to reduce crash death injuries." Their 1989 report, which is included in the rulemaking record, concludes that more enforcement of seat belt, traffic safety, and alcohol related laws is needed, along with implementation of a recent Department of Transportation proposal to raise safety standards for light truck and multipurpose vehicles to match those for cars.

Interestingly, OSHA acknowledges in the NPRM that there is "limited data to demonstrate the precise degree to which driver safety awareness would further reduce employee motor vehicle fatalities and injuries" 55 Fed. Reg. at 28,731. In an attempt to bolster its case, OSHA cites a single conversation between an OSHA staffer and an employee of United Parcel Service in Greenwich, Connecticut, in which the UPS employee discussed his company's driver safety awareness program in somewhat general terms and claimed it had reduced the company's auto accident frequency. With all due respect to United Parcel Service, we hardly think that a single telephone conversation of this nature constitutes the necessary "substantial evidence" to support this rulemaking proposal, particularly when there are so many scientific studies in the record that reach the opposite conclusion.

The evidence of record indicates quite strongly that motor vehicle fatalities are influenced by a myriad of factors, including the time of day, age of drivers, mechanical defects, weather, pedestrian involvement, off-road hazards, and, most of all, and drug and alcohol use. Countless studies have identified drug and alcohol abuse as the major preventable cause of motor vehicle accidents in this country. Traditionally, the states have taken the lead in attempting to address these problems. Certainly, federal grants and regulations play a major role in how states mold their laws, but rather than place employers in the shoes of enforcement officers, states should be made to enforce existing laws more effectively. In our view, a broad, generic rule mandating that employers bear the burden of training, retraining, and educating employees in a general sense in order to reduce fatalities is an impractical and superficial solution to the problem.

The Training Requirement

Turning to the substance of the proposal, Subsection (d)(1) would require that all employers develop and implement driver safety awareness programs that provide for "training in safe vehicle use for each employee who routinely might be expected to use a particular class of motor vehicles as part of that employee's official work assignments." The word "training" is extremely vague, and could lead to endless disputes over what constitutes appropriate "training." In the spirit of ensuring that any driver safety awareness rule is, in fact, "performance-oriented", we suggest that the word "training" be changed to read "training, instruction, or other appropriate orientation". We also suggest that the final rule recognize OSHA's position, as stated in the rulemaking proposal, that "[d]river safety awareness programs in these areas can take the form of face-to-face classroom instruction, self-study videos, or through providing manuals or brochures for employees to read." 55 Fed. Reg. at 28,731. This language should be incorporated into the final rule itself to make clear that formal face-to-face training is not required in all circumstances.

Qualified Individual

Subsection (d)(3) of the proposal would require that the individual who develops a driver safety awareness program for any company be "qualified in the topics being taught by possession of a recognized degree, certificate, or professional standing, or by extensive individual knowledge training and experience" NAHB strongly objects to any rule that would require small construction companies to seek out specialized consultants to develop a program in an everyday, common-sense area like driver safety. This is not a specialized subject in which OSHA should encourage the development of a "cottage industry" of consultants. Driver safety is something which most adult Americans are familiar with, and anyone with a minimal level of communicative skill should be able to develop an appropriate program for his or her employees. We therefore recommend that Subsection (d)(3) be deleted in its entirety.

Refresher Training and Certification

Subsections (d)(4) and (d)(6) of the proposal refer to the need to provide triennial refresher training to employees. NAHB believes that in a common sense, everyday area like driver safety, requiring training once every three years is unduly burdensome and of questionable value. There is no evidence in the record to support this type of requirement. Indeed, tens of millions of Americans maintain excellent driving records despite having received no formal driver training since high school. Again, if this is to be a true performance-oriented standard, employers should be judged on the basis of how well employees are

made aware of safety, rather than how often the required training, instruction, or orientation is given.

Similarly, we oppose the proposed requirement that would have employers certify that they have conducted such training, instruction, or orientation for particular employees. OSHA's notion of "[c]ompany driver licenses, diplomas, and class rosters" (55 Fed. Reg. at 28,734) is a pure paperwork exercise which has little relevance to increasing worker driver safety. We recommend that this requirement be deleted.

Conclusion

The issues involved in any effort to reduce occupational vehicle injuries and fatalities are extremely complex, and already the subject of many existing federal and state laws and regulations. This is an area with a very real risk of "overregulation", and any agency preparing to add to the collective regulatory burden should do so carefully. For the most part, the evidence in OSHA's existing record suggests that more enforcement of existing state laws is the critical element in reducing the incidence of vehicular accidents. If OSHA chooses to add additional regulations in this area, it should do so cautiously. The suggestions set forth above will help the agency to draft a rule that is workable in our industry, and we trust the agency will give them appropriate deference.

Sincerely,



Martin Perlman
1990 President

Facts, 1990 Edition

The Insurance Institute for Highway Safety is an independent nonprofit research and communications organization that develops and evaluates ways to reduce motor vehicle losses. As part of this work, Institute researchers carefully review and analyze federal, state, and other data files on the most serious highway crashes that occur each year. These researchers also keep up-to-date files on relevant state laws including not only safety belt and motorcycle helmet use laws but also child restraint and DWI laws. Based on information from these files, Institute researchers compile useful statistics on a variety of topics. For example:

- What's the largest category of motor vehicle deaths, passenger car occupant deaths or pedestrian deaths? In which age group is the motor vehicle occupant death rate the highest? On which days of the week do these deaths mostly occur?
- Is a motorist more likely to be killed in a small car or a large one? Are the odds of crash death greater in a car or a pickup truck? What about utility vehicles — are their death rates higher or lower than the rates for other kinds of vehicles?
- Do very young children have higher motor vehicle death rates as pedestrians or as passenger vehicle occupants? Are boys killed in crashes more often than girls? How much more often?
- Do teenage drivers have higher crash rates than older drivers? When do teenagers' crashes mostly occur, at night or in the daytime? Where do motor vehicle crashes rank among causes of death to young people?
- Do elderly drivers have higher crash rates than younger drivers? Do they have higher death rates? Do older people die more often as occupants of motor vehicles or as pedestrians?
- Is alcohol-impaired driving on the increase? Is it a bigger problem among truck drivers, motorcyclists, pedestrians, or passenger car drivers?
- Are pedestrian deaths increasing or decreasing? At what age are the rates highest? Where do pedestrian deaths usually occur, at intersections or between them?

Facts, 1990 Edition

Published by the Insurance Institute for Highway Safety

General Facts

Motor vehicle crashes are the leading cause of death among Americans 1-34 years old. Fatal crashes occur more often at some times of the day, week, and year than at other times. They involve some ages more than others. They involve males more often than females. This edition of *Fatality Facts* highlights such comparisons, based on analysis of data from the U.S. Department of Transportation's Fatal Accident Reporting System.

- 60,834 motor vehicles were involved in 40,718 fatal crashes in 1989, resulting in 45,555 deaths.
- Of the 45,555 motor vehicle deaths in 1989, 24,927 (55 percent) involved passenger car occupants; 8,619 (19 percent) involved occupants of pickups, vans, and utility vehicles; 6,552 (14 percent) involved pedestrians; and 3,036 (7 percent) involved motorcyclists.
- Forty-four percent of all car occupant deaths occur in single-vehicle crashes, 56 percent in multiple-vehicle crashes. For pickups, vans, and utility vehicles the corresponding percentages are 61 and 39.
- The motor vehicle death rate per 100,000 people is especially high among 16-24 year olds and older people (80 years and older).
- At all ages, males have much higher death rates than females. The difference between their rates is least among 0-12 year olds. It's greatest among 20-24 year olds and people 85 years and older. The highest motor vehicle death rate involves 20-24-year-old males.
- More motor vehicle deaths occur between 3 pm and midnight than during other hours. More occur on Saturday than on other days.

Total Motor Vehicle Deaths

	Total Deaths	Deaths per 100,000 People
1980	51,091	22
1981	49,301	21
1982	43,945	19
1983	42,589	18
1984	44,257	19
1985	43,825	18
1986	46,087	19
1987	40,300	19
1988	47,093	19
1989	45,555	18

Motor Vehicle Deaths

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
<u>Occupants</u>										
Passenger cars	27,424	26,615	23,161	22,820	23,470	23,050	24,808	25,004	25,700	24,927
Pickups, vans, utility vehicles	7,513	7,073	6,512	6,346	6,613	6,798	7,398	8,161	8,484	8,619
Tractor-trailers	887	840	728	735	853	751	696	659	711	648
Other med. heavy trucks	347	292	215	244	220	220	223	190	198	201
<u>Motorcyclists</u>	4,961	4,746	4,270	4,104	4,431	4,417	4,309	3,634	3,484	3,036
<u>Bicyclists</u>	965	936	864	830	838	869	929	940	900	821
<u>Pedestrians</u>	8,070	7,837	7,331	6,826	7,025	6,808	6,770	6,745	6,460	6,552
<u>Other</u>	897	962	864	684	477	912	945	457	825	751

Fatality Facts 1990

Published by the Insurance Institute for Highway Safety

At all ages, males have much higher death rates than females.

- More motor vehicle crashes occur in urban than in rural areas, but more motor vehicle deaths occur on rural than on urban roads.
- Frontal impacts account for 51 percent of all passenger vehicle occupant deaths. Side impacts account for 28 percent — 14 percent right side, 14 percent left side. Rear impacts account for only 4 percent of all passenger vehicle occupant deaths.

Distribution of Motor Vehicle Deaths by Time of Day, 1989

	Percent
Midnight - 3 am	15
3 am - 6 am	-
6 am - 9 am	9
9 am - Noon	8
Noon - 3 pm	12
3 pm - 6 pm	16
6 pm - 9 pm	16
9 pm - Midnight	16

Distribution of Motor Vehicle Deaths by Day of Week, 1989

	Percent
Sunday	16
Monday	12
Tuesday	11
Wednesday	12
Thursday	13
Friday	17
Saturday	20

Motor Vehicle Deaths per 100,000 People, 1989

Age	Male	Female
to 13	6	5
13-15	12	8
16-19	53	25
20-24	54	16
25-29	39	13
30-34	29	11
35-39	25	9
40-44	23	9
45-49	20	9
50-54	21	9
55-59	22	9
60-64	20	11
65-69	20	12
70-74	24	15
75-79	33	18
80-84	51	21
85+	53	15

Motor Vehicle Deaths by Location

	Freeways		Major Roads		Minor Roads	
	Rural	Urban	Rural	Urban	Rural	Urban
1981	2,369	3,725	19,016	10,607	5,577	6,113
1982	2,081	3,415	17,493	10,151	5,370	4,959
1983	2,151	3,461	16,626	9,340	5,628	5,194
1984	2,256	3,721	17,628	9,737	5,654	5,084
1985	2,197	3,512	17,009	9,988	5,895	5,038
1986	2,160	3,692	17,770	10,546	6,469	5,290
1987	2,533	3,970	18,281	10,084	6,230	5,122
1988	2,850	3,956	17,994	9,947	6,308	5,046
1989	2,775	4,094	17,294	9,904	6,191	5,102

Distribution of Motor Vehicle Deaths by Month, 1989

	Percent
January	-
February	6
March	8
April	8
May	7
June	8
July	9
August	9
September	9
October	9
November	8
December	7

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July 1991 Editor Anne Fleming

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Alcohol

Alcohol impairment is a major problem involving not only drivers but also pedestrians and others on the road. This edition of Fatality Facts addresses the problem of alcohol impairment on the highways, reflecting the latest and most reliable information on the subject. Much of this information is from the 29 states that report to the U.S. Department of Transportation the blood alcohol concentrations (BACs) of high proportions of all fatally injured drivers — important because reliable information about alcohol use can only be obtained from chemical tests.

- The percentage of fatally injured drivers of passenger vehicles (cars, pickups, vans, and utility vehicles) with BACs at or above 0.10 percent continued a 10-year decline in 1989 — down to 40 percent from a high of 53 percent in 1980. This information is based on data from the 13 states that for the past 10 years have reported BACs for at least 70 percent of their fatally injured drivers (see table, page 4). The percentages are comparable based on data from 29 states that reported BACs for at least 80 percent of their fatally injured drivers in 1989.
- The percentage of tractor-trailer drivers and motorcyclists with high BACs (0.10 percent or more) increased slightly from 1988 to 1989 — after declining for most of the '80s — as did the percentage of fatally injured pedestrians with BACs of 0.10 percent or more.
- Even at BACs as low as 0.02 percent, alcohol affects driving ability and crash likelihood. The probability of a crash begins to increase significantly at 0.05 percent BAC and climbs rapidly after about 0.08 percent. For drivers with BACs above 0.15 percent on weekend nights, the likelihood of being killed in a single-vehicle crash is more than 380 times higher than it is for nondrinking drivers.^{1,2}
- Three percent of a national sample of passenger vehicle drivers on weekend nights in 1989 had BACs at or above 0.10 percent — down from 5 percent in 1973.³ Drivers with BACs this high (0.10 percent) represent only 12 percent of all drinking drivers on weekend nights, but they are disproportionately represented (86 percent) in the drinking driver fatality statistics.
- Less than 1 percent of a random sample of tractor-trailer drivers surveyed along an interstate highway in 1986 had any measurable BAC. None had a BAC higher than 0.04 percent.⁴

Percent of Passenger Vehicle Drivers with Various BACs, 10 pm to 3 am, Friday and Saturday, 1973 to 1986

BAC	1973	1986
0.00-0.01	—	80
0.02-0.04	9	11
0.05-0.07	—	—
0.10-0.14	4	2
0.15+	1	1

Percent of Drinking Drivers of Passenger Vehicles with Various BACs, 10 pm to 3 am, Friday and Saturday, 1986

BAC	Survived Drivers	Fatally Injured Drivers
<0.05	69	5
0.05-0.09	20	11
0.10+	12	84

Fatality Facts 1990

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Crashes involving men are much more likely than those involving women to be alcohol-related.

- Crashes involving men are much more likely than those involving women to be alcohol-related. Among fatally injured male drivers, 46 percent had BACs of 0.10 percent or more in 1989. The percentage for women was 22. Alcohol involvement is highest for men age 20-34.
- Per mile driven and per licensed driver, 16-24 year olds had the highest rates of alcohol-related fatal crashes in 1983 (the most recent year for which data are available on mileage). The rates for 16-24 year olds is more than 2-1/2 times higher, on average, than the rates for older drivers.⁵
- Alcohol involvement in crashes peaks at night and is higher on weekends than on weekdays. Among passenger vehicle drivers who are fa-

Percent of Fatally Injured Drivers and Pedestrians with BACs $\geq$ 0.10 Percent

Year	Passenger Vehicles	Tractor Trailers	Pedestrians (Age 16+)	Motorcycles	All Drivers
1980	53	16	41	43	50
1981	51	15	43	47	49
1982	50	15	44	44	48
1983	48	13	42	46	46
1984	44	11	41	44	43
1985	42	-	39	42	41
1986	42	4	38	42	41
1987	41	4	37	38	40
1988	41	5	38	38	40
1989	40	8	40	41	39

Percent of Fatally Injured Passenger Vehicle Drivers by Blood Alcohol Concentration, 1989

BAC	Daytime (6 am-9 pm) Single Vehicle	Daytime (6 am-9 pm) Multiple Vehicle	Nighttime (9 pm-6 am) Single Vehicle	Nighttime (9 pm-6 am) Multiple Vehicle
	Vehicle	Vehicle	Vehicle	Vehicle
0.00	55	40	19	42
0.01-0.04	4	3	3	4
0.05-0.09	4	3	-	8
0.10-0.19	17	6	36	22
0.20+	20	8	35	24

Percent of Fatally Injured Drivers of Passenger Vehicles with BACs $\geq$ 0.10 Percent, 1989

Age	Male	Female
16-19	34	18
20-24	59	33
25-34	59	33
35-54	51	24
55+	16	6
All	46	22

Percent of Fatally Injured Drivers of Passenger Vehicles with BACs $\geq$ 0.10 Percent by Month, 1989

	Percent
January	40
February	-
March	59
April	41
May	41
June	40
July	40
August	38
September	39
October	30
November	42
December	40

Alcohol involvement is highest in nighttime (9 pm to 6 am) single-vehicle crashes . . .

Handwritten notes:
7:00 PM
10:00 PM
11:00 PM

Percent of Fatally Injured Drivers of Passenger Vehicles with BACs ≥ 0.10 Percent by Day and Time, 1989		
	2pm-6am	6am-9pm
Sunday	65	32
Monday	57	18
Tuesday	56	15
Wednesday	65	17
Thursday	58	20
Friday	63	22
Saturday	65	33

Percent of Fatally Injured Drivers of Passenger Vehicles with BACs ≥ 0.10 Percent by Time of Day, 1989	
	Percent
Midnight - 3 am	70
3 am - 6 am	54
6 am - 9 am	14
9 am - Noon	8
Noon - 3 pm	15
3 pm - 6 pm	22
6 pm - 9 pm	44
9 pm - Midnight	50

tally injured between 9 pm and 6 am. 62 percent have BACs at or above 0.10 percent. During other hours the percentage is 23. Half of all fatally injured drivers on weekends (6 pm Friday to 6 am Monday) have BACs of 0.10 percent or more. During the rest of the week, the proportion is 31 percent.

- Alcohol involvement is highest in nighttime (9 pm to 6 am) single-vehicle crashes, in which 71 percent of fatally injured passenger vehicle drivers in 1989 had BACs at or above 0.10 percent. Only 19 percent had no alcohol in their blood. Because of this high percentage of alcohol involvement in nighttime single-vehicle crashes, changes in this type of crash are often used as a measure of the changing role of alcohol in highway crashes and fatalities.
- Seventy-two percent of all motorcyclists killed in nighttime single-vehicle crashes in 1989 had very high BACs (0.10 percent or greater). Only 15 percent had no alcohol in their blood. Eighty-four percent of the motorcycle drivers age 25-34 killed in nighttime single-vehicle crashes had very high BACs.
- Fifty-nine percent of the adult pedestrians killed in nighttime crashes with motor vehicles in 1989 had very high BACs (0.10 percent or greater). Thirty-one percent had no alcohol in their blood.
- Thirteen percent of all tractor-trailer drivers killed in nighttime single-vehicle crashes in 1989 had very high BACs (0.10 percent or greater). Seventy-eight percent had no alcohol in their blood.
- The percentage of all fatally injured drivers in nighttime single-vehicle crashes with BACs at or above 0.10 percent fell from a high of about 76 in the early 1980s to 67 percent in 1989.
- Drivers under 30 years old account for more than half of all drinking drivers who are fatally injured in crashes, but they compose far less than half of those arrested for driving while intoxicated. The proportion of drivers younger than 20 who are arrested for driving while intoxicated is only 1/4 to 1/3 of the proportion of these drivers involved in fatal crashes.
- As of January 1, 1990, all but 5 states (Kentucky, Maryland, Massachusetts, South Carolina, and Tennessee) had "per se" laws defining it as a crime to drive with a blood alcohol concentration (BAC) at or above a proscribed level, usually 0.10 percent. People convicted of alcohol-impaired driving are subject to a variety of sanctions, with all states except New Hampshire and Wisconsin permitting jail sen-

Among fatally injured male drivers, 46 percent had BACs of 0.10 percent or more in 1989.

tences for first offenders. Eleven states (Alaska, Connecticut, Kansas, Louisiana, Nevada, Ohio, Oregon, Rhode Island, Tennessee, Utah, and West Virginia) mandate jail or community service after a first conviction for alcohol-impaired driving.⁷

- State motor vehicle departments have traditionally imposed sanctions (license suspension or revocation) after DWI convictions. Under a relatively new procedure — administrative license suspension — licenses may be taken before conviction when a driver fails or refuses to take a chemical test for alcohol. As of January 1990, 28 states and the District of Columbia had administrative license suspension laws, and Congress has provided incentives for other states to enact such laws.⁸

THE INFORMATION IN THIS FACT SHEET IS BASED LARGELY ON ANALYSIS OF DATA FROM THE U.S. DEPARTMENT OF TRANSPORTATION'S FATAL ACCIDENT REPORTING SYSTEM. FOR FURTHER INFORMATION, SEE THE FOLLOWING REPORTS:

- ¹Borkenstein, R.F.; Crowther, R.F.; Shumate, R.P.; Ziel, W.B., and Zylman, R. 1974. The role of the drinking driver in traffic accidents (the Grand Rapids study). *Blutalkohol* 11.
- ²Zador, P. 1990. Alcohol-related relative risk of fatal driver injuries in relation to driver age and sex. *Journal of Studies on Alcohol* (in press).
- ³Lund, A.K. and Wolfe, A.C. 1990. Changes in the incidence of alcohol-impaired driving in the United States, 1973-86. *Journal of Studies on Alcohol* (in press).
- ⁴Lund, A.K.; Preusser, D.F.; Blomberg, R.D.; and Williams, A.F. 1988. Drug use by tractor-trailer drivers. *Journal of Forensic Sciences* 33:648-61.
- ⁵Fell, J.C. 1985. Alcohol involvement in fatal accidents, 1980-84. Washington, DC: U.S. Department of Transportation, National Center for Statistics and Analysis.
- ⁶Voas, R.B. and Williams, A.F. 1986. Age differences in arrested and conviction-involved drinking drivers. *Journal of Studies on Alcohol* 47:244-48.
- ⁷Insurance Institute for Highway Safety. 1990. DUI/DWI laws. *State Law Facts*. Arlington, VA: Insurance Institute for Highway Safety.

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The Insurance Institute for Highway Safety is an independent, nonprofit public service organization that conducts and publishes state-of-the-art research on highway safety. The Institute's work is supported by the nation's property and casualty insurers, individually and through their trade associations.

Percent of Fatally Injured Drivers Whose BACs Were Tested and Reported by State Authorities, 1989

	Percent
Alabama	78
Alaska	92
Arizona	51
Arkansas	38
California*	90
Colorado*	87
Connecticut	90
Delaware*	93
Dist. of Columbia	83
Florida	71
Georgia	74
Hawaii*	91
Idaho	88
Illinois	89
Indiana	79
Iowa	74
Kansas	73
Kentucky	77
Louisiana	74
Maine	84
Maryland	86
Massachusetts	86
Michigan	82
Minnesota	74
Mississippi	75
Missouri	75
Montana	81
Nebraska	81
Nevada*	71
New Hampshire	77
New Jersey*	73
New Mexico*	83
New York	77
North Carolina	75
North Dakota	71
Ohio	71
Oklahoma	71
Oregon*	79
Pennsylvania	77
Rhode Island	81
South Carolina	77
South Dakota*	92
Tennessee	76
Texas*	77
Utah	87
Vermont*	86
Virginia*	89
Washington*	90
West Virginia	88
Wisconsin*	88
Wyoming	81

*In these states, the BAC of 1 percent or more of all fatally injured drivers has been increasing steadily in the past 10 years.

Pedestrians

The second largest category of motor vehicle deaths, after occupants, is pedestrians. The problem of pedestrians being hit by motor vehicles involves people of all ages although, on a population basis, elderly people are affected most. This edition of Fatality Facts addresses the problem.

- 6,552 pedestrians died in motor vehicle crashes in 1989. Since 1979, 14 to 17 percent of all traffic deaths have been pedestrians.
- Seventy percent of pedestrian deaths are males.
- Pedestrian deaths per 100,000 people have decreased by 28 percent during the past decade (from 3.6 in 1980 to 2.6 in 1989), with the largest declines accounted for by the youngest and oldest age groups. Between 1980 and 1989, the rate for 0-9 year olds decreased 38 percent. It decreased 43 percent for 10-19 year olds and 30 percent for those 65 and older during the same time period.
- Pedestrian death rates among the elderly have been decreasing since at least 1950.¹ Still, people 65 years and older have the highest pedestrian death rates. Starting at age 75, the rate is more than twice as high as it is for younger people. Twenty-two percent of all motor vehicle deaths of people 65 years and older involve pedestrians.
- Twenty-five percent of all elderly pedestrian deaths occur at intersections, compared with only 10 percent in the case of children 4 years and younger.

Distribution of Pedestrian Deaths by Time of Day, 1989

	Percent
Midnight - 3 am	13
3 am - 6 am	6
6 am - 9 am	8
9 am - Noon	6
Noon - 3 pm	8
3 pm - 6 pm	14
6 pm - 9 pm	24
9 pm - Midnight	20

Percentage of Pedestrian Deaths at Intersections, 1989

Age	Percent
0-4	10
5-19	14
20-64	10
65-74	17
75+	25

Pedestrian Deaths per 100,000 People

	0-9 yrs	10-19 yrs	20-34 yrs	35-64 yrs	65+ yrs	All Ages
1980	2.9	2.8	3.3	3.1	5.7	3.6
1981	2.7	2.5	3.3	3.0	5.2	3.4
1982	2.4	2.5	3.1	2.8	5.4	3.2
1983	2.3	2.3	3.0	2.6	5.1	2.9
1984	2.2	2.2	2.9	2.7	5.2	3.0
1985	2.3	2.0	2.7	2.6	5.1	2.9
1986	2.1	2.1	2.8	2.5	4.9	2.8
1987	2.0	2.0	2.6	2.6	5.0	2.8
1988	2.2	1.9	2.7	2.6	5.2	2.8
1989	1.8	1.6	2.6	2.6	4.7	2.6

Total Pedestrian Deaths

	Male	Female	Total*
1980	5,013	2,454	8,070
1981	5,155	2,382	7,837
1982	5,149	2,185	7,534
1983	4,773	2,050	6,823
1984	5,014	2,065	7,079
1985	4,004	2,131	6,135
1986	4,771	2,004	6,775
1987	4,777	1,987	6,764
1988	4,753	2,111	6,864
1989	4,594	1,955	6,552

*includes sex unknowns

Fatality Facts 1990

Published by the Insurance Institute for Highway Safety

Most serious pedestrian injuries result from striking the hood, windshield, or top of a vehicle.

- Forty-two percent of all motor vehicle deaths of 1-9 year olds are pedestrians.
- Seventy percent of pedestrian deaths occur in urban areas. However, the ratio of deaths to injuries is higher in rural areas because of higher impact speeds on rural roads.²
- Fatal pedestrian-motor vehicle collisions occur most often between 6 and 10 pm. They're more likely to occur on Friday and Saturday than on other days of the week.
- Fifty-nine percent of pedestrians 16 years and older killed in night-time crashes with motor vehicles in 1989 had very high blood alcohol concentrations (0.10 percent or more). Thirty percent had no alcohol in their blood.
- The percentage of fatally injured adult pedestrians with blood alcohol concentrations of 0.10 percent or more didn't decline in the 1980s, while the percentage of all motor vehicle drivers with blood alcohol concentrations this high decreased by 20 percent during the same time period.³
- Most serious pedestrian injuries result from striking the hood, windshield, or top of a vehicle — not from subsequent impact with the road or being run over.⁴

**Distribution of
Pedestrian Deaths
by Day of Week, 1989**

	Percent
Sunday	14
Monday	12
Tuesday	12
Wednesday	12
Thursday	14
Friday	18
Saturday	18

**Distribution of
Pedestrian Deaths
by Month, 1989**

	Percent
January	9
February	7
March	8
April	7
May	7
June	7
July	8
August	8
September	9
October	10
November	9
December	10

THE INFORMATION IN THIS FACT SHEET IS BASED LARGELY ON ANALYSIS OF DATA FROM THE U.S. DEPARTMENT OF TRANSPORTATION'S FATAL ACCIDENT REPORTING SYSTEM. FOR FURTHER INFORMATION, SEE THE FOLLOWING REPORTS:

¹Whitfield, R.A. and Fife, D. 1987. Changing patterns in motor vehicle crash mortality, 1940-1980. *Accident Analysis and Prevention* 19:261-69.

²Baker, S.P.; O'Neill, B.; and Karpf, R.S. 1984. *The injury fact book*. Lexington, MA: D.C. Heath and Company.

³Williams, A.F. and Lund, A.K. 1990. Alcohol impaired driving and crashes involving alcohol in the United States during the 1970s and 1980s. *Proceedings of the 11th International Conference on Alcohol, Drugs and Traffic Safety*. Chicago, IL: National Safety Council.

⁴Ashton, S.J. 1979. Some factors influencing injuries sustained by child pedestrians struck by the fronts of cars. *Proceedings of the Twenty-third Stapp Car Crash Conference*, 351-80. Warrendale, PA: Society of Automotive Engineers.

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Roadside Hazards

*Many fatal crashes don't involve collisions between motor vehicles or between a motor vehicle and a pedestrian, a motorcycle, or a bicycle. They involve collisions with objects fixed in place beside the road — trees, poles, barriers, buildings, ditches, embankments — that can increase crash risk or crash severity. This edition of *Fatality Facts* addresses the problem of roadside hazards.*

- 12,741 people were killed in 11,720 crashes involving roadside hazards in 1989. This represents 28 percent of all deaths in motor vehicle crashes.
- Ninety-seven percent of roadside hazard crashes involve one vehicle. The most common point of first impact in fatal single-vehicle roadside hazard crashes is the front (67 percent) of the vehicle. Frontal crashes with roadside hazards resulted in 8,234 deaths in 1989.
- Twenty-six percent of the deaths in roadside hazard crashes involve striking a tree, the most frequently struck fixed object. Other deaths in these crashes involve striking utility poles, sign posts, light supports, other poles and posts (20 percent), guardrails and other traffic barriers (11 percent), embankments (11 percent), ditches (7 percent), curbs (5 percent), and culverts (4 percent). The rest involve bridge piers and railings, concrete barriers, etc.
- Thirty-seven percent of roadside hazard crash deaths occur in vehicles that roll over. Fatal rollover crashes are most likely to be associated with striking an embankment, tree, guardrail, utility or other pole or post, culvert, curb, or ditch.
- Thirty-two percent of roadside hazard crashes involve ejection. Ejections are most common when the vehicle strikes a tree, embankment, utility pole, other pole, post, or sign support, or when it hits a guardrail, ditch, culvert, or curb.
- Trees are the most frequent fatality- and injury-producing hazard in single-vehicle roadside hazard crashes. Trees are followed by wooden utility poles, embankments, ditches, and culverts. These five hazards account for 70 percent of all injuries and almost 60 percent of all deaths in roadside hazard crashes.¹

Deaths in Roadside Hazard Crashes

	Single Vehicle	All
1980	14,818	15,232
1981	13,607	14,076
1982	12,024	12,428
1983	11,811	12,178
1984	12,044	12,455
1985	11,789	12,234
1986	12,930	13,332
1987	12,488	12,938
1988	12,602	13,143
1989	12,302	12,741

Distribution of Deaths in Roadside Hazard Crashes by Point of First Impact, 1989

	Percent
Front (11-1 o'clock)	67
Right (2-4 o'clock)	11
Left (8-10 o'clock)	10
Rear (5-7 o'clock)	2
Undercarriage	5
Top	4
Other unknown	4

Fatality Facts 1990

Published by the Insurance Institute for Highway Safety.

Trees are the most frequent fatality- and injury-producing hazard in single-vehicle roadside hazard crashes.

Distribution of Deaths in Roadside Hazard Crashes by Location, 1989

	Percent
Roadway	1
Shoulder	5
Median	5
Roadside	47
Outside right of way	5
Off road, unknown location	36

Distribution of Deaths in Roadside Hazard Crashes by Time of Day, 1989

	Percent
Midnight - 3 am	24
3 am - 6 am	12
6 am - 9 am	7
9 am - Noon	5
Noon - 3 pm	9
3 pm - 6 pm	11
6 pm - 9 pm	13
9 pm - Midnight	18

Distribution of Deaths in Roadside Hazard Crashes by Day of Week, 1989

	Percent
Sunday	20
Monday	11
Tuesday	10
Wednesday	11
Thursday	11
Friday	15
Saturday	23

Percent of Deaths in Roadside Hazard Crashes by Light and Road Surface, 1989

	Daylight	Dark	Dark/Lighted	Dawn/Dusk
Dry	27	37	15	3
Wet/slippery	6	8	3	1

Distribution (Percent) of Deaths in Roadside Hazard Crashes According to Ejection, 1989

	No Ejection	Partial Ejection	Total Ejection
Guardrail/barrier	-	1	4
Pole, post, support	14	1	4
Culvert, curb, ditch	10	1	5
Embankment	5	1	4
Tree, shrubbery	21	1	4
Fence, wall	3	<1	1
Other	8	1	2

Deaths in Roadside Hazard Crashes by Objects Struck, 1989

Tree/shrub	3,255
Utility pole	1,401
Embankment	1,317
Guardrail	1,152
Ditch	811
Curb	665
Culvert	525
Bridge pier abutment	231
Bridge railing	180
Bridge parapet	73
Concrete other barrier	237
Highway sign support	599
Light support	173
Other post pole	438
Fence	444
Wall	140
Building	97
Other	764
Total	12,302

Fifty-six percent of all drivers who are killed in roadside hazard crashes have very high blood alcohol concentrations.

Distribution of Deaths in Roadside Hazard Crashes by Month, 1989

	Percent
January	7
February	7
March	8
April	8
May	8
June	8
July	9
August	9
September	9
October	9
November	8
December	9

Deaths in Roadside Hazard Crashes, by Age and Sex, 1989

Age	Male	Female
0-12	159	145
13-19	1,696	691
20-34	4,490	1,115
35-44	1,259	364
45-54	614	201
55-64	467	156
65+	567	349
Total*	9,272	3,021

*includes age unknowns; excludes 3 cases of age and sex unknown

- Although only 3 percent of all motor vehicle crashes involve trees, this kind of crash accounts for 24 percent of all vehicles in fatal roadside hazard crashes and 26 percent of all deaths in these crashes.
- Fourteen percent of the deaths in roadside hazard crashes occur on interstate highways, freeways, or expressways. Fifty-two percent occur on major streets and highways, and 32 percent are on minor and local roads.
- Sixty-three percent of the deaths in roadside hazard crashes occur on rural roads.
- Thirty-eight percent of the vehicles in fatal roadside hazard crashes are operated by young drivers (24 years and younger). Elderly drivers (65 and older) operate 7 percent of such vehicles. Fifty-three percent of the drivers in fatal roadside hazard crashes are men under 35 years old.
- Seventeen percent of the people killed in roadside hazard crashes are teenagers (16-19 years old). About half (46 percent) are 20-34 years old.
- Fatal roadside hazard crashes occur about twice as often at night as during the day. Twenty-one percent of the deaths in these crashes occur on Friday and Saturday nights between 9 pm and 3 am.
- Fifty-six percent of all drivers who are killed in roadside hazard crashes have very high blood alcohol concentrations (0.10 percent or higher).
- Crashes on curves account for 43 percent of all deaths in roadside hazard crashes. Another 33 percent of the deaths involve crashes on hills.
- Crashes on wet or slippery roads account for 17 percent of all deaths in roadside hazard crashes. Sixty-one percent of the deaths in crashes on slippery roads occur at night. 41 percent occur on curves, and 37 percent occur on hills.
- More than half (54 percent) of the deaths in roadside hazard crashes occur on high-speed roads (55-65 mph speed limits).

More than half of the
deaths in roadside haz-
ard crashes occur on
high-speed roads.

- As the width of the clear area at the roadside is increased, the proportion of vehicles that leave the road but don't crash increases. If a 10-foot clear area were widened to 35 feet, roadside hazard crashes could be expected to decline by 10 percent at that site.¹
- Seventy percent of the vehicles in run-off-the-road crashes are tracking (i.e., they're not sliding or skidding) when they leave the road. Vehicles running off the left side of the road more often slide or skid than do vehicles running off the right side.¹

**Deaths in Roadside Hazard
Crashes by Type of Road,*
1989**

	Rural	Urban
Freeways	683	1,063
Major roads	4,516	1,887
Minor roads	2,556	1,535

*excludes 62 unknowns

THE INFORMATION IN THIS FACT SHEET IS BASED LARGELY ON ANALYSIS OF DATA FROM THE U.S. DEPARTMENT OF TRANSPORTATION'S FATAL ACCIDENT REPORTING SYSTEM. FOR FURTHER INFORMATION, SEE THE FOLLOWING REPORTS:

¹Perchonok, K.; Ranney, T.A.; Baum, A.S.; Morris, D.F.; and Eppich, J.D. 1978. Hazardous effects of highway features and roadside objects. Washington, DC: Federal Highway Administration.

²Zeigler, A.J. 1987. Risk of vehicle-tree accidents and management of roadside trees. Transportation Research Record 112. Washington, DC: National Research Council.

**INSURANCE
INSTITUTE
FOR
HIGHWAY
SAFETY**

July 1991, Editor Anne Blum

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The Insurance Institute for Highway Safety is an independent, nonprofit, non-service organization that researches and evaluates ways to reduce motor vehicle losses. The Institute's work is widely supported by the public, private industry, and government, individually and through the Highway Safety Council of America.

State by State

The number and type of motor vehicle crash deaths differ widely among the 50 states, as indicated by the tables on pages 2 and 3. Reasons for such variations include differing degrees of urbanization, amounts of travel, types of travel, types of vehicles, state laws, emergency care capabilities, weather, topography, and a variety of other factors. This edition of Fatality Facts lists motor vehicle fatality information by state, based on analysis of the U.S. Department of Transportation's Fatal Accident Reporting System, and addresses some of the reasons for the wide fatality differences among states.

- 40,718 fatal motor vehicle crashes occurred in the United States in 1989, and 45,555 deaths occurred in these crashes.
- The size of a state has an obvious impact on the number of motor vehicle deaths. The four most populous states (California, Florida, New York, and Texas) accounted for 31 percent of the 45,555 motor vehicle deaths that occurred in 1989. California had the most motor vehicle crashes (4,877) and crash deaths (5,412). Alaska (79 crashes, 84 deaths) and North Dakota (76 crashes, 81 deaths) were the states with the fewest.
- Even when a state's population is taken into account, motor vehicle death rates still vary considerably, from a low of 10 per 100,000 people in Rhode Island to 35 per 100,000 people in New Mexico. The national rate of motor vehicle deaths in 1989 was 18.
- The jurisdictions with the lowest motor vehicle death rates per 100,000 people in 1989 were Rhode Island (10), the District of Columbia (12), Massachusetts (12), New Jersey (12), and North Dakota (12). States with the highest rates in 1989 were New Mexico (35), Mississippi (28), Nevada (28), South Carolina (28), Arkansas (27), and Wyoming (27).
- Nationwide, most motor vehicle deaths (55 percent) in 1989 involved occupants of passenger cars. In most of the 50 states, too, passenger car occupants accounted for the majority of the deaths. Exceptions were Alaska, Arizona, California, the District of Columbia, Hawaii, Louisiana, Montana, New Mexico, North Dakota, Texas, and Wyoming.
- The percentage of motor vehicle deaths involving occupants of pickups, vans, and utility vehicles was 19 for the nation in 1989. However, this percentage is much higher in western states — 48 percent in Wyoming, where a higher percentage of people died in pickups, vans, and utility vehicles than in passenger cars.
- The percentage of motor vehicle deaths involving motorcyclists in 1989 ranged from 1 in North Dakota to 13 in Rhode Island, 12 in Connecticut and New Hampshire.
- The percentage of motor vehicle deaths involving pedestrians in 1989 ranged from 2 in Wyoming to 26 in New York and 24 in New Jersey (42 percent in the District of Columbia). The national rate was 14.

Fatality Facts 1990

Published by the Insurance Institute for Highway Safety

Motor Vehicle Deaths, 1989

	Fatal Crashes	Deaths	Deaths per 1,000 People		Deaths per 100,000 Registered Vehicles		Deaths per 100,000 Licensed Drivers		Passenger Vehicle Occupant Deaths			
			1989	1988	1989	1988	1989	1988	Number Deaths	% Single Vehicle	% Buckle Up	% Not Buckle Up
Alabama	918	1,029	25	25	25	24	49	49	444	51	23	23
Alaska	79	84	16	16	24	24	24	24	54	44	7	7
Arizona	711	879	25	25	42	42	57	57	440	54	11	11
Arkansas	57	64	27	27	45	45	56	56	525	54	7	7
California	4,877	5,412	19	19	25	25	28	28	3,549	50	5	5
Colorado	482	528	16	16	18	18	24	24	394	57	7	7
Connecticut	379	406	13	13	15	15	17	17	270	55	34	34
Delaware	108	116	17	17	22	22	24	24	91	52	36	36
Dist. of Columbia	70	72	12	12	27	27	18	18	35	46	26	26
Florida	2,685	2,982	24	24	26	26	33	33	1,951	39	21	21
Georgia	1,422	1,632	25	25	30	30	37	37	1,250	46	22	22
Hawaii	129	149	13	13	21	21	23	23	95	49	33	33
Idaho	212	238	23	23	25	25	33	33	186	59	25	25
Illinois	1,545	1,748	15	15	22	22	24	24	1,264	47	28	28
Indiana	882	971	17	17	23	23	26	26	761	42	22	22
Iowa	451	514	18	18	20	20	27	27	400	43	26	26
Kansas	371	428	17	17	19	19	25	25	347	49	28	28
Kentucky	686	772	21	21	27	27	32	32	648	51	23	23
Louisiana	778	874	20	20	29	29	34	34	646	49	28	28
Maine	178	193	16	16	20	20	22	22	140	46	24	24
Maryland	654	726	15	15	21	21	23	23	526	37	21	21
Massachusetts	638	700	12	12	18	18	16	16	470	48	34	34
Michigan	1,464	1,631	18	18	22	22	25	25	1,303	41	25	25
Minnesota	538	604	14	14	18	18	24	24	405	42	22	22
Mississippi	621	726	28	28	40	40	39	39	402	54	24	24
Missouri	936	1,052	20	20	27	27	30	30	803	51	7	7
Montana	163	181	22	22	25	25	34	34	127	68	24	24
Nebraska	257	296	18	18	22	22	27	27	235	47	27	27
Nevada	276	308	28	28	37	37	40	40	240	63	20	20
New Hampshire	165	187	17	17	19	19	23	23	145	61	27	27
New Jersey	814	891	12	12	15	15	16	16	594	42	22	22
New Mexico	469	538	35	35	43	43	51	51	307	56	24	24
New York	2,075	2,257	13	13	22	22	22	22	1,434	44	25	25
North Carolina	1,521	1,471	22	22	28	28	33	33	1,137	44	21	21
North Dakota	76	81	12	12	12	12	19	19	61	49	26	26
Ohio	1,574	1,772	16	16	20	20	24	24	1,218	47	25	25
Oklahoma	569	648	20	20	25	25	29	29	509	49	24	24
Oregon	546	626	22	22	26	26	29	29	604	46	27	27
Pennsylvania	1,711	1,977	16	16	24	24	24	24	1,415	44	27	27
Rhode Island	97	100	10	10	15	15	15	15	72	54	23	23
South Carolina	895	996	28	28	40	40	42	42	754	53	25	25
South Dakota	134	152	21	21	21	21	31	31	122	50	27	27
Tennessee	977	1,088	22	22	25	25	34	34	906	54	28	28
Texas	2,923	3,357	30	30	27	27	40	40	2,435	51	19	19
Utah	269	303	18	18	26	26	31	31	232	57	25	25
Vermont	109	116	20	20	25	25	24	24	93	58	25	25
Virginia	918	1,004	16	16	21	21	24	24	765	51	27	27
Washington	694	781	16	16	19	19	24	24	674	49	27	27
West Virginia	406	464	25	25	35	35	36	36	314	53	27	27
Wisconsin	714	817	17	17	20	20	25	25	544	44	27	27
Wyoming	113	127	7	7	26	26	30	30	208	60	27	27
U.S. Total	80,718	45,555	18	18	24	24	28	28	22,516	48	24	24

Motor Vehicle Deaths by Type, 1968

	Passenger Car Occupants		Pickup/Van/Utility Vehicle Occupants		Tractor-Trailer Occupants		Motorcycles		Pedestrians	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Alabama	625	61	235	23	19	2	54	5	42	5
Alaska	49	10	23	23	0	0	4	10	11	13
Arizona	473	42	233	27	13	1	76	9	129	14
Arkansas	334	50	204	32	19	3	21	3	22	22
California	2,498	46	1,051	19	58	1	420	11	222	18
Colorado	271	51	123	23	12	2	37	11	22	10
Connecticut	225	55	45	11	4	1	50	12	64	16
Delaware	71	61	20	17	2	2	4	3	17	15
Dist. of Columbia	31	43	4	6	0	0	4	6	30	42
Florida	1,591	53	360	12	32	1	206	7	655	22
Georgia	891	55	359	22	20	1	60	4	214	13
Hawaii	71	48	24	16	0	0	16	11	30	20
Idaho	121	51	65	27	9	4	25	11	12	5
Illinois	1,061	61	203	12	34	2	126	7	283	16
Indiana	611	63	150	15	15	2	66	8	77	8
Iowa	294	57	106	21	13	2	43	8	40	8
Kansas	245	57	102	24	13	3	25	6	33	8
Kentucky	482	62	166	22	13	2	21	3	69	9
Louisiana	125	49	221	25	16	2	36	4	138	16
Maine	119	62	21	11	4	2	17	9	25	13
Maryland	404	56	122	17	5	1	39	5	137	19
Massachusetts	393	56	77	11	3	0	63	9	141	20
Michigan	1,057	65	246	15	6	0	68	4	188	12
Minnesota	361	60	104	17	6	1	37	6	67	11
Mississippi	438	60	164	23	18	2	23	3	68	9
Missouri	603	57	260	25	23	2	45	4	90	9
Montana	65	36	62	54	10	6	16	9	20	11
Nebraska	167	56	68	23	8	3	13	4	27	9
Nevada	154	51	82	27	3	1	20	6	46	12
New Hampshire	119	64	26	14	2	1	22	12	10	5
New Jersey	540	56	94	11	17	2	30	3	217	24
New Mexico	206	38	191	36	12	2	31	6	85	16
New York	1,207	53	227	10	14	1	131	6	540	26
North Carolina	890	60	267	18	28	2	46	3	203	14
North Dakota	40	49	21	36	0	0	1	1	10	12
Ohio	1,100	62	218	12	12	1	160	1	199	11
Oklahoma	333	51	176	27	15	2	44	6	62	7
Oregon	329	53	165	26	10	3	44	7	53	7
Pennsylvania	1,142	63	236	13	16	2	109	7	217	13
Rhode Island	62	62	10	10	0	0	13	13	13	13
South Carolina	570	57	184	19	13	1	49	5	126	12
South Dakota	85	56	37	24	1	1	12	8	9	5
Tennessee	647	59	259	24	16	1	59	5	87	8
Texas	1,548	46	887	26	44	1	230	8	265	14
Utah	159	52	73	23	2	1	23	8	39	13
Vermont	74	64	19	16	1	1	35	5	10	9
Virginia	585	58	180	18	18	2	64	3	140	14
Washington	421	54	156	20	9	1	104	6	101	11
West Virginia	294	63	109	23	9	1	19	4	22	7
Wisconsin	525	64	116	15	7	1	68	7	55	7
Wyoming	47	57	61	18	4	1	9	7	3	2
TOTAL	21,027	55	8,619	19	648	1	3,076	7	6,552	17

Even when a state's population is taken into account, motor vehicle death rates still vary considerably.

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The Insurance Institute for Highway Safety is an independent, nonprofit public service organization that develops and evaluates ways to reduce the number of vehicle deaths. The Institute's work is wholly supported by the nation's property and casualty insurers, individuals and through other trade associations.

Tractor-Trailers

Tractor-trailers account for far more than their share of bigway deaths and injuries. This edition of Fatality Facts addresses the problem of deaths and injuries in tractor-trailer crashes.

- 4,242 people died in tractor-trailer crashes in 1989 — 15 percent were truck occupants, the majority passenger vehicle occupants.
- In fatal crashes involving passenger cars and tractor-trailers, the car occupants are killed 49 times as often as the truck occupants.
- Tractor-trailers were in 3 percent of all police-reported crashes in 1986. They accounted for 9 percent of all fatal crashes in 1980-89.¹
- Tractor-trailers have lower per-mile crash rates than cars because they travel so many more of their miles on well-designed interstate highways where death rates are less than half those on other roads. Only 22 percent of all passenger vehicle mileage is on interstates, while tractor-trailers put in 49 percent of their miles on interstates.²
- One out of four deaths in tractor-trailer crashes occurs on interstate highways. Only about 5 percent occur on local roads.
- On toll roads, tractor-trailers have higher per-mile crash rates than passenger vehicles — 6 percent more crashes per mile than passenger vehicles in New York, 23 percent more in Kansas, 34 percent more in Florida, and 69 percent more in New Jersey.³
- More tractor-trailer crash deaths occur on weekdays than on weekends. More occur from 6 am to 6 pm than at other times of the day. These deaths are distributed approximately evenly by month of year.
- Double trailer trucks (i.e., tractors pulling two trailers) are 2 to 3 times as likely as other big trucks to be in crashes, according to a study in Washington State. This comparison of interstate highway crash rates holds regardless of driver age, truck weight, hours of driving, size of fleet, or involvement of other vehicles. Double trailer trucks are also more likely than singles to jackknife in a crash.⁴
- Tractor-trailers with mechanical defects are twice as likely as those without defects to be in crashes. More than half of the big trucks inspected at the roadside have mechanical defects. At least 1/3 have defects serious enough to require putting them out of service.⁵
- Tractor-trailers require more distance than cars to stop. In tests, a loaded tractor-trailer took 47 percent farther than a passenger car to stop from 55 mph (196 vs. 133 feet).⁶

Deaths in Tractor-Trailer Crashes

1980	4,412
1981	4,517
1982	4,100
1983	4,246
1984	4,477
1985	4,531
1986	4,375
1987	4,272
1988	4,472
1989	4,242

Deaths in Two-Vehicle Crashes Involving Tractor-Trailers and Passenger Cars

	Passenger Cars	Tractor Trailers	Ratio
1980	1,843	56	33
1981	1,972	55	36
1982	1,765	56	32
1983	1,871	51	37
1984	1,939	53	37
1985	1,950	47	42
1986	1,904	48	40
1987	1,830	59	31
1988	1,962	51	39
1989	1,804	37	49

Fatality Facts 1990

Published by the Insurance Institute for Highway Safety

In fatal crashes involving passenger cars and tractor-trailers, the car occupants are killed 49 times as often.

Deaths in Tractor-Trailer Crashes

	Total Deaths	Tractor-Trailer Occupants	Others
1980	4,412	887	3,525
1981	4,517	840	3,677
1982	4,100	728	3,372
1983	4,246	735	3,511
1984	4,477	853	3,624
1985	4,531	751	3,780
1986	4,375	696	3,679
1987	4,272	659	3,613
1988	4,472	711	3,761
1989	4,242	648	3,594

Relative Risk of Crash Involvement for Various Truck Types on Interstates

	All Crashes	Single Vehicle
Single unit	0.3	0.4
Single unit truck plus trailer	1.8	2.2
Tractor only	0.8	0.6
Tractor-trailer	1.0	0.8
Rocky mountain double	3.0	3.0
Western double	3.0	3.1

Fatal Truck Crashes by Configuration, 1989

	Deaths	Fatal Crashes
Single unit	1,015	908
Single unit plus trailers	105	91
Tractor only	501	422
Tractor-trailer	3,479	2,928
Double	230	189
Triple	32	26

Crashes per Million Vehicle Miles, Tractor-Trailers and Passenger Vehicles on Toll Roads

	Passenger Vehicles	Tractor Trailers
Florida	0.89	1.19
Kansas	1.86	2.28
New Jersey	1.48	2.50
New York	1.25	1.33

Deaths in Tractor-Trailer Crashes by Highway Type, 1989

	Freeways	Major Roads	Minor Roads
Single-vehicle crashes	174	190	28
Multiple-vehicle crashes	796	2,342	171
Crashes involving pedestrians, bicyclists	147	147	40

Distribution of Deaths in Tractor-Trailer Crashes by Time of Day, 1989

	Percent
Midnight - 3 am	11
3 am - 6 am	10
6 am - 9 am	13
9 am - Noon	14
Noon - 3 pm	16
3 pm - 6 pm	15
6 pm - 9 pm	11
9 pm - Midnight	11

Double trailer trucks are 2 to 3 times as likely . . . to be in crashes.

**Distribution of Deaths
in Tractor-Trailer Crashes
by Month, 1989**

	Percent
January	7
February	7
March	8
April	8
May	7
June	8
July	9
August	10
September	9
October	9
November	9
December	8

**Distribution of Deaths
in Tractor-Trailer Crashes
by Day of Week, 1989**

	Percent
Sunday	6
Monday	14
Tuesday	15
Wednesday	16
Thursday	18
Friday	19
Saturday	10

- After tractor-trailer brakes have been used repeatedly and become hot, braking can deteriorate. The problem is more serious if the truck's brakes aren't properly adjusted. (All cars have self-adjusting brakes, but most tractor-trailers don't. This means truck brakes are more likely to be out of adjustment.) In tests, a car with hot brakes stopped from 55 mph in 133 feet. A loaded tractor-trailer with hot brakes near the limit of recommended adjustment took 3 times as far.⁶
- Antilock brakes, which keep wheels from locking up during braking, will be required as of October 1991 on new tractor-trailers in Europe's common market countries. Tractors will have to have antilocks on all wheels. Trailers must have them on at least 2 wheels on opposite sides. Very few tractor-trailers in the United States have antilocks, and there are no plans to require them.
- Federal regulations require that interstate truck drivers operate not more than 10 hours following 8 hours off duty nor more than 60 hours in any 7 consecutive days. Drivers are required to maintain written logs of driving hours, but federal inspectors found 83,149 hours-in-service, logbook, and related violations sufficient to put drivers out of service during 1,227,704 inspections in 1988.⁷
- Drivers who have been behind the wheel long hours (more than 8) on interstates are twice as likely as drivers who are rested to be involved in crashes. During a 1,200-mile route from Washington to Minnesota, researchers estimated that as many as 9 out of 10 tractor-trailer drivers were in violation of hours-in-service regulations.⁸
- Six percent of all fatally injured tractor-trailer drivers in 1989 had very high blood alcohol concentrations (0.10 percent or greater). In nighttime single-vehicle crashes the corresponding percentage is 13. (This is based on data from 29 states.)
- Driver impairment because of fatigue is the most important crash causation factor, according to an 8-state study. One-third of the drivers tested positive for one or more drugs of abuse — 13 percent for marijuana, 13 percent for alcohol, 9 percent for cocaine, 8 percent for non-prescription stimulants, and 7 percent for prescription stimulants.⁹
- Among 317 tractor-trailer drivers surveyed randomly along an interstate highway in 1986, 29 percent had used drugs with potential for abuse. Marijuana was detected in 15 percent. Its active ingredient was found in 3 percent, indicating the drivers were either frequent users or had used marijuana recently. Nonprescription stimulants were found in 12 percent, prescription stimulants in 5 percent, and cocaine in 2 percent. Less than 1 percent of the drivers had alcohol in their blood.¹⁰
- As of April 1989, 40 states had raised maximum speed limits to 65 mph on rural interstates. But in 10 of these states (California, Illinois,

Tractor-trailers are the likeliest vehicles to have radar detectors.

Indiana, Michigan, Missouri, Ohio, Oregon, Texas, Virginia, and Washington) big trucks are held to lower speeds, with surveys indicating that this policy holds down excessive truck speeds.¹¹

- Tractor-trailers are the likeliest vehicles to have radar detectors.¹²

THE INFORMATION IN THIS FACT SHEET IS BASED LARGELY ON ANALYSIS OF DATA FROM THE U.S. DEPARTMENT OF TRANSPORTATION'S FATAL ACCIDENT REPORTING SYSTEM. FOR FURTHER INFORMATION, SEE THE FOLLOWING REPORTS:

¹Clark, R.M.; Leasure, W.A. Jr.; Radlinski, R.W.; and Smith, M. 1987. Heavy truck safety. Washington, DC: U.S. Department of Transportation, DOT-HS-807-109.

²Federal Highway Administration. 1989. Highway statistics 1988. Washington, DC: Federal Highway Administration FHWA-PL-89-003.

³Preusser, D.F. and Stein, H.S. 1987. Comparison of passenger vehicle and truck crash rates on toll roads. ITE Journal (December 1987):39-44.

⁴Stein, H.S. and Jones, I.S. 1988. Crash involvement of large trucks by configuration: a case control study. American Journal of Public Health 78:491-98.

⁵Jones, I.S. and Stein, H.S. 1989. Defective equipment and tractor-trailer crash involvement. Accident Analysis and Prevention 21:469-81.

⁶Jones, I.S. 1985. Truck air brakes: current standards and performance. Proceedings of the 29th Conference of the American Association for Automotive Medicine. Morton Grove, IL: American Association for Automotive Medicine.

⁷Federal Highway Administration. 1989. Motor carrier safety assistance program: accomplishments and effectiveness. Washington, DC: Federal Highway Administration FHWA-MC-89-029.

⁸Hertz, R.P. 1989. The prevalence of hours of service violations among tractor-trailer drivers. Proceedings of the 33th Conference of the Association for the Advancement of Automotive Medicine. Des Plaines, IL: Association for the Advancement of Automotive Medicine.

⁹National Transportation Safety Board. 1990. Fatigue, alcohol, other drugs, and medical factors in fatal-to-the-driver heavy truck crashes. Washington, DC: National Transportation Safety Board NTSB SS-90-01.

¹⁰Lund, A.K.; Preusser, D.F.; Blomberg, R.D.; and Williams, A.F. 1988. Drug use by tractor-trailer drivers. Journal of Forensic Sciences 33:648-61.

¹¹Esterlitz, J.R.; Baum, H.; Zador, P.; and Penny, M. 1989. Different speed limits for cars and trucks: do they affect vehicle speeds? Arlington, VA: Insurance Institute for Highway Safety.

¹²Ciccone, M.A.; Goodson, M.; and Pollner, J. 1987. Radar detectors and speed in Maryland and Virginia. Journal of Political Science and Administration 15:277-84.

Average Stopping Distances from 55 Mph in Braking Tests

Passenger Car	Feet
Brakes cool	133
Brakes hot	133
Tractor-Trailer	
Loaded with cool brakes	190
Loaded with hot brakes	370
Empty	189
Tractor only	183

**INSURANCE
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July 1990 Editor Anne Fleming

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The Insurance Institute for Highway Safety is an independent, nonprofit public service organization that develops and evaluates ways to reduce motorist injuries and losses. The Institute's work is always supported by the nation's property and casualty insurers, individually, and through their trade associations.

Vehicle Size

Researchers have known for years that people in small cars are injured more often and more severely in crashes than occupants of large cars. Small cars have less structure, mass, and size to absorb crash energy, so more injurious forces can reach their occupants in crashes — a growing problem because the number of small cars and trucks on the road has increased in recent years. This edition of *Fatality Facts* addresses vehicle size, based largely on analysis of data from the U.S. Department of Transportation's Fatal Accident Reporting System and R.L. Polk and Company's National Vehicle Population Profile.

- 45,555 people were killed in 1989 in motor vehicle crashes. More than half (24,927) were passenger car occupants. Another 8,619 were riding in pickup trucks, vans, or utility vehicles.
- The overall occupant death rate in 1-3-year-old cars of all sizes decreased from 1984 (2.2 per 10,000 registered vehicles) to 1989 (2.0 per 10,000). The rate increased only for the smallest cars (2.8 in 1984, 3.0 in 1989).
- The occupant death rate in 1-3-year-old vans, pickup trucks, and utility vehicles decreased slightly — from 2.3 deaths per 10,000 registered vehicles in 1984 to 2.2 in 1989. The rate increased for vans (1.2 deaths per 10,000 in 1984 to 1.6 in 1989) and for small pickup trucks (2.9 per 10,000 in 1984 to 3.1 in 1989), while the rates for large pickups and utility vehicles decreased. The greatest decreases were for large utility vehicles (1.3 deaths per 10,000 in 1984 to 0.7 in 1989) and for small utility vehicles (3.7 deaths per 10,000 in 1984 to 2.3 in 1989).
- The death rate in the smallest cars on the road (3.0 per 10,000 registered vehicles 1-3 years old in 1989) is more than double the rate in the largest cars (1.3).
- The occupant death rate is higher in small pickup trucks (3.1 per 10,000 registered vehicles 1-3 years old in 1989) than in any other kind of passenger vehicle. The second highest death rate occurs in the smallest cars (3.0 deaths per 10,000 in 1989), followed by small utility vehicles (2.3). The rate is lowest (0.7) in large utility vehicles.

Occupant Deaths in Passenger Cars

1980	27,424
1981	26,615
1982	23,161
1983	22,820
1984	23,470
1985	23,050
1986	24,808
1987	25,004
1988	25,700
1989	24,927

Occupant Deaths in Vans, Pickup Trucks, and Utility Vehicles

1980	7,513
1981	7,073
1982	6,512
1983	6,340
1984	6,013
1985	6,798
1986	7,308
1987	8,161
1988	8,404
1989	8,619

Fatality Facts 1990

Published by the Insurance Institute for Highway Safety.

The death rate in the smallest cars on the road . . . is more than double the rate in the largest cars.

- The effect of car size occurs regardless of driver age. In crashes involving at least one vehicle being towed away, a greater percentage of the occupants of small cars are killed, compared with large cars. This is true without regard to driver age. It is true for both single- and multiple-vehicle crashes.
- Most (75 percent) of the occupant deaths in small utility vehicles 1-3 years old in 1989 occurred in single-vehicle crashes. In contrast, 31 percent of the occupant deaths in large cars (wheelbase greater than 109 inches) occurred in this kind of crash.
- Small utility vehicles are disproportionately involved in fatal rollover crashes. The occupant death rate in single-vehicle rollovers is about 10 times as high for small utility vehicles as for large cars.

Occupant Deaths per 1,000 Occupants in Single-Vehicle Towaway Crashes by Driver Age, 1982-86

<u>Cars by Size</u>	<u>Drivers Age < 25</u>	<u>Drivers Age 25-34</u>	<u>Drivers Age 35-54</u>
Small (wheelbase < 100 in.)	19	33	39
Midsize (wheelbase 100-09 in.)	26	39	41
Large (wheelbase > 109 in.)	14	19	20

Occupant Deaths per 1,000 Occupants in Multiple-Vehicle Towaway Crashes by Driver Age, 1982-86

<u>Cars by Size</u>	<u>Drivers Age < 25</u>	<u>Drivers Age 25-34</u>	<u>Drivers Age 35-54</u>
Small (wheelbase < 100 in.)	8	10	14
Midsize (wheelbase 100-09 in.)	7	8	13
Large (wheelbase > 109 in.)	3	4	5

Occupant Deaths in Single-Vehicle Rollover Crashes as a Percent of All Occupant Deaths, 1989

<u>Cars by Size</u>	<u>Percent</u>
Small Wheelbase < 95 in.	23
Wheelbase 95-99 in.	21
Midsize Wheelbase 100-04 in.	21
Wheelbase 105-09 in.	13
Large Wheelbase 110-14 in.	9
Wheelbase > 114 in.	15
<u>Vans</u>	22
<u>Pickups</u>	
Small Weight < 3,500 lbs.	39
Large Weight > 3,500 lbs.	37
<u>Utility Vehicles</u>	
Small Wheelbase < 100 in.	61
Midsize Wheelbase 100-20 in.	45
Large Wheelbase > 120 in.	27

Most (75 percent) of the occupant deaths in small utility vehicles . . . in 1989 occurred in single-vehicle crashes.

Percent of Passenger Vehicle Occupant Deaths by Size of Car and Vehicle Type*

	Passenger Cars		
	Small	Midsize	Large
1980	12	13	33
1981	22	14	30
1982	16	16	28
1983	18	17	27
1984	19	20	24
1985	21	23	22
1986	21	24	21
1987	22	26	18
1988	23	28	16
1989	23	29	15

	Vans	Pickup Trucks	Utility Vehicles
1980	1	7	2
1981	1	8	2
1982	1	8	2
1983	1	9	2
1984	1	10	2
1985	1	11	2
1986	1	12	2
1987	1	13	3
1988	1	14	3
1989	2	14	3

*Percentages do not add to 100 because of unknown vehicle size or type

Occupant Deaths per 10,000 Registered Vehicles 1-3 Years Old by Direction of Impact, 1989

Cars by Size	Front	Side	Rear	Rollover
Small (wheelbase < 95 in.)	1.6	0.8	0.1	1.3
Small (wheelbase 95-99 in.)	1.2	0.6	< 0.1	0.8
Midsize (wheelbase 100-04 in.)	1.2	0.6	< 0.1	0.8
Midsize (wheelbase 105-09 in.)	0.9	0.5	< 0.1	0.6
Large (wheelbase 110-14 in.)	0.8	0.5	< 0.1	0.5
Large (wheelbase > 114 in.)	0.8	0.3	0.1	0.5
Vans	0.9	0.4	< 0.1	0.6
Pickups				
Small (weight < 3,500 lbs.)	1.7	0.5	< 0.1	1.8
Large (weight > 3,500 lbs.)	1.0	0.3	< 0.1	1.0
Utility Vehicles				
Small (wheelbase < 100 in.)	0.9	0.3	< 0.1	1.6
Midsize (wheelbase 100-20 in.)	0.8	0.2	< 0.1	1.0
Large (wheelbase > 120 in.)	0.5	0.0	0.0	0.4

Passenger Vehicle Occupant Deaths per 10,000 Registered Vehicles 1-3 Years Old by Crash Type, 1989

Cars by Size	Single Vehicle	Multiple Vehicle	Total
Small (wheelbase < 95 in.)	1.2	1.7	3.0
Small (wheelbase 95-99 in.)	1.0	1.2	2.1
Midsize (wheelbase 100-04 in.)	0.9	1.2	2.1
Midsize (wheelbase 105-09 in.)	0.6	1.0	1.6
Large (wheelbase 110-14 in.)	0.4	1.0	1.4
Large (wheelbase > 114 in.)	0.5	0.8	1.3
Vans	0.8	0.8	1.6
Pickups			
Small (weight < 3,500 lbs.)	1.9	1.2	3.1
Large (weight > 3,500 lbs.)	1.1	0.6	1.7
Utility Vehicle			
Small (wheelbase < 100 in.)	1.7	0.6	2.3
Midsize (wheelbase 100-120 in.)	1.0	0.6	1.7
Large (wheelbase > 120 in.)	0.4	0.5	0.9
All	1.0	1.1	2.1

DUI/DWI Laws

As of January 1, 1990, all but 5 states (Kentucky, Maryland, Massachusetts, South Carolina, and Tennessee) "per se" laws defining it as a crime to drive with a blood alcohol concentration (BAC) at or above a proscribed level, usually 0.10 percent. People convicted of alcohol-impaired driving are subject to a variety of sanctions, with all states except New Hampshire and Wisconsin permitting jail sentences for first offenders and most states allowing judges considerable latitude in setting sentences. Eleven states mandate jail or community service after a first conviction for alcohol-impaired driving.

State motor vehicle departments have traditionally imposed sanctions (license suspension or revocation) after DWI convictions. Under a relatively new procedure — administrative license suspension — licenses may be taken before conviction when a driver fails or refuses to take a chemical test for alcohol. The arresting officer typically takes the license at the time of the offense and initiates suspension proceedings by reporting the arrest to the licensing authority. Because administrative sanctions operate independently of criminal procedures and may be invoked right after arrest, they've been found to be more effective than traditional post-conviction sanctions.

State	BAC Defined As Illegal Per Se	Admin. License Suspension?	Hardship License* After 1st DWI Offense?	Mandatory Jail/Community Service for 1st Offense?
Alabama	0.10 percent	no	no	no
Alaska	0.10 percent	yes	yes, after 30 days	yes
Arizona	0.10 percent	yes	yes, after 30 days	no
Arkansas	0.10 percent	no	yes	no
California	0.08 percent ²	yes	yes, after 30 days	no
Colorado	0.10 percent	yes	no	no
Connecticut	0.10 percent	yes	no	yes
Delaware	0.10 percent	yes	no	no
Dist. of Columbia	0.10 percent	yes	yes	no
Florida	0.10 percent	yes	yes, after 30 days	no
Georgia	0.12 percent	no	yes	no
Hawaii	0.10 percent	no	yes, after 30 days	no
Idaho	0.10 percent	no	yes	no
Illinois	0.10 percent	yes	yes, after 30 days	no
Indiana	0.10 percent	yes	yes, after 30 days	no
Iowa	0.10 percent	yes	yes	no
Kansas	0.10 percent	yes	yes, after 30 days	yes
Kentucky	none ¹	no	no	no
Louisiana	0.10 percent	yes	yes, after 30 days	yes
Maine	0.08 percent	yes	yes	no
Maryland	none ¹	yes	yes	no
Massachusetts	none ¹	no	no	no
Michigan	0.10 percent	no	yes	no

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Administrative license suspension has . . . been found to be more effective than traditional post- conviction sanctions.

State	BAC Defined As Illegal Per Se	Admn. License Suspension?	Hardship License* After 1st DWI Offense?	Mandatory Jail Community Service for 1st Offense?
Minnesota	0.10 percent	yes	yes	no
Mississippi	0.10 percent	yes	yes, after 30 days	no
Missouri	0.10 percent ²	yes	yes, after 30 days	no
Montana	0.10 percent	no	yes	no
Nebraska	0.10 percent	no	no	no
Nevada	0.10 percent	yes	yes, after 45 days	yes
New Hampshire	0.10 percent	no	no	no
New Jersey	0.10 percent	no	no	no
New Mexico	0.10 percent	yes	no	no
New York	0.10 percent	no	yes	no
North Carolina	0.10 percent	yes	no	no
North Dakota	0.10 percent	yes	yes, after 30 days	no
Ohio	0.10 percent	no	yes, after 60 days	yes
Oklahoma	0.10 percent	yes	yes, after 30 days	no
Oregon	0.08 percent	yes	yes, after 30 days	yes
Pennsylvania	0.10 percent	no	no	no
Rhode Island	0.10 percent	no	no	yes
South Carolina	none ¹	no	yes	no
South Dakota	0.10 percent	no	yes	no
Tennessee	none ¹	no	yes	yes
Texas	0.10 percent	no	yes	no
Utah	0.08 percent	yes	no	yes
Vermont	0.10 percent	yes	no	no
Virginia	0.10 percent	no	yes	no
Washington	0.10 percent	no	yes, after 30 days	no
West Virginia	0.10 percent	yes	no	yes
Wisconsin	0.10 percent	yes	yes, after 15 days	no
Wyoming	0.10 percent	yes	yes	no

¹DLI DWI laws are not per se laws. A BAC of 0.10 percent is evidence of alcohol impairment but is not illegal per se.

²The BAC that's illegal per se isn't the same as the BAC that invokes administrative license suspension. In California, 0.10 percent is the threshold for administrative license suspension. In Missouri, 0.15 percent is the threshold for administrative license suspension.

*Restricted, or hardship, licenses allow limited driving privileges to people whose licenses have been suspended. Information on license suspension applies to administrative license suspension in states with such provisions. In other states, the information applies to post-conviction suspension.

³The mandatory sentence applies only to first offenders with BACs of 0.15 percent or more and to others whose offense was aggravated.

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The Insurance Institute for Highway Safety is a non-profit organization that develops and disseminates information on highway safety. The institute's work is wholly dependent on the contributions of individuals and organizations who share its commitment to highway safety.

Helmet Use Laws

By the early 1970s, virtually all states had laws requiring motorcyclists of all ages to wear helmets. However, Illinois repealed its helmet use law in 1970 and, by 1980, most states had abandoned or substantially limited theirs — usually restricting coverage to riders younger than 18. Legislators in some states later reinstated motorcycle helmet use laws, so that now all but a few states require some or all cyclists to use helmets. (Colorado, Iowa, and Illinois don't have helmet laws. Rhode Island's law applies to motorcycle passengers only, not drivers.) Helmet use rates approach 100 percent under universal helmet laws, but laws applying to some riders aren't effective. The record of helmet law enactment, repeal, and reinstatement as of June 1990 is summarized below:

State	Initial Effective Date	Date of Repeal and or Change in Coverage	Riders Covered by Present Law
Alabama	Nov. 6, 1967	—	all riders
Alaska	Jan. 1, 1971	coverage limited June 23, 1976	up to 18 yrs.
Arizona	Jan. 1, 1969	coverage limited May 27, 1976	up to 18 yrs.
Arkansas	June 29, 1967	—	all riders
California	Jan. 1, 1985	—	up to 15-1 2 yrs.
Colorado	July 1, 1969	repealed May 20, 1977	—
Connecticut	Oct. 1, 1967	repealed June 1976; limited coverage restored Jan. 90	up to 18 yrs.
Delaware	June 21, 1968	coverage limited June 10, 1978	up to 19 yrs.
Dist. of Columbia	Feb. 11, 1970	—	all riders
Florida	Sept. 13, 1967	—	all riders
Georgia	July 1, 1969	—	all riders
Hawaii	June 4, 1967	coverage limited June 7, 1977	up to 18 yrs.
Idaho	Jan. 1, 1968	coverage limited March 29, 1978	up to 18 yrs.
Illinois	July 1, 1969	repealed July 1, 1970	—
Indiana	Jan. 29, 1967	repealed Aug. 1977; limited coverage restored Jan. 84	up to 18 yrs.
Iowa	Sept. 1, 1975	repealed July 1, 1976	—
Kansas	Jan. 1, 1967	coverage limited July 1, 1970	up to 18 yrs.
Kentucky	June 15, 1968	—	all riders
Louisiana	July 31, 1968	coverage limited Oct. 1, 1976; reinstated Jan. 1, 1982	all riders
Maine	Oct. 7, 1967	repealed Oct. 1977; limited coverage restored July 80	up to 15 yrs.
Maryland	July 1, 1968	coverage limited July 1, 1979	up to 18 yrs.
Massachusetts	May 22, 1967	—	all riders
Michigan	March 10, 1967	repealed June 12, 1968; reinstated July 29, 1969	all riders
Minnesota	May 1, 1968	coverage limited April 6, 1977	up to 18 yrs.
Mississippi	March 28, 1974	—	all riders
Missouri	Sept. 28, 1967	—	all riders

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Helmet use rates approach 100 percent under universal helmet laws, but laws applying to some riders aren't effective.

State	Initial Effective Date	Date of Repeal and or Change in Coverage	Riders Covered by Present Law
Montana	July 1, 1973	coverage limited July 1, 1977	up to 18 yrs.
Nebraska	May 29, 1967	repealed Sept. 2, 1977/reinstated Jan. 1, 1989	all riders
Nevada	Jan. 1, 1972	—	all riders
New Hampshire	Sept. 5, 1967	coverage limited Aug. 7, 1977	up to 18 yrs
New Jersey	Jan. 1, 1968	—	all riders
New Mexico	June 16, 1967	coverage limited March 31, 1978	up to 18 yrs
New York	Jan. 1, 1967	—	all riders
North Carolina	Jan. 1, 1968	—	all riders
North Dakota	July 1, 1967	coverage limited July 1, 1977	up to 18 yrs
Ohio	Jan. 1, 1968	coverage limited July 10, 1978	up to 18 yrs
Oklahoma	April 27, 1967	coverage limited May 3, 1976 ¹	up to 18 yrs
Oregon	Jan. 1, 1968	coverage limited Oct. 4, 1977 reinstated June 16, 1988	all riders
Pennsylvania	July 15, 1968	—	all riders
Rhode Island	April 4, 1967	coverage limited May 21, 1976	passengers only
South Carolina	July 1, 1967	coverage limited June 16, 1980	up to 21 yrs
South Dakota	July 1, 1967	coverage limited July 1, 1977	up to 18 yrs
Tennessee	June 4, 1967	—	all riders
Texas	Jan. 1, 1968	coverage limited Aug. 29, 1977 reinstated Sept. 1, 1989	all riders
Utah	May 15, 1969	coverage limited May 10, 1977	up to 18 yrs
Vermont	March 6, 1968	—	all riders
Virginia	June 26, 1970	—	all riders
Washington	June 8, 1967	repealed Sept. 21, 1977 reinstated June 7, 1980 ²	all riders
West Virginia	May 25, 1971	—	all riders
Wisconsin	July 1, 1968	coverage limited March 19, 1978	up to 18 yrs
Wyoming	May 24, 1973	coverage limited May 27, 1983	up to 18 yrs

¹Alaska's helmet use law applies to passengers of all ages as well as to motorcycle drivers younger than 18 years.

²Kansas' helmet use law was amended in 1975 to limit coverage to riders younger than 21 years; reinstated in 1989 to apply to all riders and in 1990 to apply to riders younger than 16 and, in the latest amendment (1991), changed to cover riders younger than 18.

³Alabama's helmet use law was amended in 1989 to limit coverage to riders younger than 21 years; reinstated in 1973 to apply to all riders and in the latest amendment (1976) limited to coverage of riders younger than 18.

⁴Following repeal in 1977, Washington's helmet use law was reinstated in July 1987 to apply only to riders younger than 18 years. The law was then amended in June 1988 to apply to all riders.

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The Insurance Institute for Highway Safety is a non-profit organization that works to reduce the number of deaths and injuries on the nation's highways. We do this by conducting research, developing and promoting safety programs, and providing technical assistance to state and local governments.

Safety Belt Laws

Legislators in 36 states and the District of Columbia have enacted safety belt use laws, most of which took effect during 1985-87. Legislators in four other states — Massachusetts, Nebraska, North Dakota, and Oregon — also enacted safety belt laws, but these were subsequently repealed by voter referendum. Safety belt laws in most states cover front-seat occupants only, although the laws in Alaska, California, Montana, Nevada, and Washington cover occupants both front and rear. In 31 of the U.S. jurisdictions with belt use laws, front-seat occupants of all passenger cars, pickups, vans, and utility vehicles are required to comply. In the other jurisdictions, occupants of vehicles other than passenger cars may be exempt. Occupants of light trucks are most commonly exempt.

Safety belt laws in only 8 jurisdictions allow police to issue tickets for belt law violations alone. In other jurisdictions, motorists must have committed some other moving violation before they can be ticketed for failure to buckle up. These and other differences among state safety belt use laws as of June 1990 are summarized below:

State	Effective Date	Driver Responsible for Others, By Age ¹	Enforcement (Primary, Secondary) ²	Max. Fine 1st Offense
Alabama	—	—	—	—
Alaska	Sept. 12, 1990	to 16 yrs., all seats	secondary	\$15
Arizona	Dec. 31, 1990	5 to 16 yrs., front seat only	secondary	\$10
Arkansas	—	—	—	—
California	Jan. 1, 1986	older than 4 yrs., all seats	secondary	\$20
Colorado	July 1, 1987	older than 4 yrs., front seats	secondary	\$10
Connecticut	Jan. 1, 1986	4 to 16 yrs., front seat only	primary	\$15
Delaware	—	—	—	—
Dist. of Columbia	Dec. 12, 1985	self only	secondary	\$15
Florida	July 1, 1986	to 16 yrs., front seat only	secondary	\$20
Georgia	Sept. 1, 1988	self only	secondary	\$15
Hawaii	Dec. 16, 1985	4 to 15 yrs., front seat only	primary	\$20
Idaho	July 1, 1986	self only	secondary	\$5
Illinois	July 1, 1985	0 to 16 yrs., front seat only	secondary	\$25
Indiana	July 1, 1987	self only	secondary	\$25
Iowa	July 1, 1986	self only	primary	\$10
Kansas	July 1, 1986	self only	secondary	\$10
Kentucky	—	—	—	—
Louisiana	July 1, 1986	self only	secondary	\$25
Maine	—	—	—	—
Maryland	July 1, 1986	to 16 yrs., front seat only	secondary	\$25
Massachusetts	—	—	—	—
Michigan	July 1, 1985	4 to 16 yrs., front seat only	secondary	\$25
Minnesota	Aug. 1, 1986	4 to 11 yrs., all seats	secondary	\$10
Mississippi	March 20, 1990	self only	primary	none
Missouri	Sept. 28, 1985	4 to 16 yrs., front seat only	secondary	\$10
Montana	Oct. 1, 1987	all occupants older than 4 yrs.	secondary	\$20

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In most states, motorists must have committed some other violation before they can be ticketed for failure to buckle up.

State	Effective Date	Driver Responsible for Others By Age ¹	Enforcement Primary Secondary ²	Max. Fine 1st Offense ³
Nehaska	—	—	—	—
Nevada	July 1, 1987	5 to 18 yrs., all seats	secondary	\$25
New Hampshire	—	—	—	—
New Jersey	March 1, 1985	5 to 18 yrs., front seat only ⁴	secondary	\$20
New Mexico	Jan. 1, 1986	self only	primary	\$50
New York	Dec. 1, 1984	4 to 16 yrs., front seat ⁵	primary	\$50
North Carolina	Oct. 1, 1985	6 to 16 yrs., front seat only	primary	\$25
North Dakota	—	—	—	—
Ohio	May 6, 1986	older than 4 yrs., front seat only	secondary	\$20
Oklahoma	Feb. 1, 1987	self only	secondary	\$25
Oregon	—	—	—	—
Pennsylvania	Nov. 23, 1987	4 to 18 yrs., front seat only	secondary	\$10
Rhode Island	—	—	—	—
South Carolina	July 1, 1989	6 to 17 yrs. ⁶	secondary	\$10
South Dakota	—	—	—	—
Tennessee	April 21, 1986	4 to 16 yrs., front seat only	secondary	none
Texas	Sept. 1, 1985	4 to 15 yrs., front seat only	primary	\$50
Utah	April 28, 1986	5 to 18 yrs., front seat only	secondary	\$10
Vermont	—	—	—	—
Virginia	Jan. 1, 1988	4 to 16 yrs., front seat only	secondary	\$25
Washington	June 11, 1986	to 16 yrs., all seats	secondary	\$47
West Virginia	—	—	—	—
Wisconsin	Dec. 1, 1987	4 to 16 yrs. ⁷	secondary	\$1
Wyoming	June 8, 1989	older than 2 yrs., front seat only	secondary	none

¹In virtually all states, adult passengers are responsible for their own compliance. Drivers are responsible for themselves and, in most states, for their "family" who aren't covered by child restraint laws. In a few states, drivers are responsible for all passengers. ²Primary enforcement means that police may stop and ticket motorists for not buckling up. Secondary enforcement means that police may not stop and ticket motorists for not buckling up unless they have observed another violation. ³Some states have no fine for a first offense. ⁴Some states have no fine for a first offense. ⁵Some states have no fine for a first offense. ⁶Some states have no fine for a first offense. ⁷Some states have no fine for a first offense.

⁸If the youngsters are the drivers' children, the driver is responsible for 4 to 15 year olds in the front seat.

⁹Drivers are also responsible for children 4 to 15 years old who are riding in the rear seat.

¹⁰Safety belt laws in South Carolina and Wisconsin cover all occupants in front seats plus those in rear seats where shoulder belts are available.

¹¹Instead of fining those who aren't in compliance with the safety belt law, police in Wyoming may take license points from the driver's record for the primary violation only.

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