

Easing the Transition to GHS Label Compliance

What you need to know
to achieve GHS label
compliance faster, easier
and at a lower cost



Now that the deadlines for the Globally Harmonized System (GHS) of Classification and Labeling of Chemicals in the U.S. have passed, manufacturers and distributors of chemicals, along with the end users of such products, need to know how to achieve GHS label compliance in the simplest, easiest way possible.



Yet about 50% of companies did not meet all the GHS requirements outlined under OSHA’s 2012 revised Hazard Communication Standard (HCS), according to a study of Environmental Health and Safety (EHS) professionals conducted by Actio Software Corp in 2016.

“For any stragglers who are not GHS label compliant, OSHA fines and penalties have gone up 78% as of August 1, 2016,” said Mark Howell, owner of Howell Safety & Training Solutions, a Jonesboro, AR.-based safety and risk management consulting company. “As of August 1, the maximum fine rose from \$7,000 per violation to \$12,471 per violation, and for more serious issues from \$70,000 to \$124,709 per violation.”

While implementing GHS labeling can seem daunting, particularly for small and medium-sized organizations, it doesn’t have to be. This white paper will discuss the challenges related to GHS Labeling in general, within specific industries, and provide tips to help achieve GHS label compliance faster, easier and at a lower cost.

| GHS Label Content

The GHS was established by the United Nations to create a unified system for identifying and communicating hazardous chemicals on a global level, enhancing safety and minimizing misunderstandings. As such, each GHS label requires six specific items of data that communicate key information as clearly and concisely as possible. Each of these items can be found on the updated Safety Data Sheets (SDS) that replaced the older Material Safety Data Sheets (MSDS).

1 Product Name or Identifier: Should match the product identifier on SDSs. This should include the name of the chemical, its code number, and its batch number.

2 Hazard Statement: Describes the nature of the hazard. Labels may display multiple hazard statements such as H200: Unstable explosive, H311: Toxic in contact with skin, and H331: Toxic if inhaled.

3 Signal Word: Indicates the severity of the hazard. “Danger” indicates a severe hazard, while “Warning” indicates a less severe hazard.

4 Pictogram symbols: Show hazard information visually. Instead of the familiar black and white pictogram symbols previously used in safety labeling, GHS labels now require pictogram symbols with a red diamond border. A label may include multiple pictograms to indicate multiple hazards.

5 Precautionary Statement: Indicates how to prevent or minimize hazards. This may also include first aid, storage, and disposal instructions.

6 Supplier Information: Includes the name, address, and phone number of the chemical manufacturer, supplier, or importer.

Product Name/ Identifier

Should match product identifier on SDS

Hazard Statement

Describes the nature of the hazard

Pictograms

Symbols to convey health, physical and environmental information

Signal Word

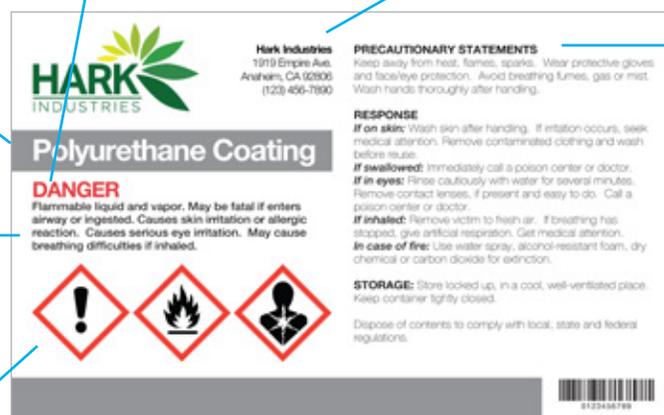
Indicates relative severity of hazard

Supplier Identification

Name, address, telephone number of supplier

Precautionary Statements

Measures to minimize/prevent effects of hazard (includes first aid)



| GHS Label Compliance Challenges

GHS affects chemical manufacturers, importers, distributors and companies that use hazardous chemicals in the workplace.

OSHA estimates that the GHS affects up to 5.3 million business establishments in the U.S . Chemical manufacturers must reclassify their hazardous chemicals based on a common system of chemical classification defined by GHS. They must update their SDSs and also use GHS-compliant labels to identify their hazardous chemicals.

Chemical importers/distributors must ensure the hazardous chemicals they sell have GHS-compliant SDSs and GHS-compliant labels.

Employers with hazardous chemicals in the workplace must ensure that they have SDSs and labels for their exposed workers, and that they are trained to handle the chemicals properly. This includes items that may not immediately come to mind, such as disinfectants and sanitizers that are purchased in bulk containers for cost savings and are then transferred to smaller bottles or spray bottles for portable use.

A few exceptions to GHS labeling include specific areas covered by other governing bodies, such as pesticides and hazardous waste by the Environmental Protection Agency (EPA), personal cosmetics by the Food and Drug Administration (FDA), and consumer chemicals by the Consumer Product Safety Commission (CPSC). It's important to note that if a workplace uses chemicals in the same manner and frequency a consumer would use it, then that chemical would not be covered under OSHA's Hazard Communication Standard (HCS). An example could be an office worker that occasionally uses a consumer cleaner in the break room.

Manufacturers

OSHA's HCS Final Rule still requires that chemical manufacturers and importers evaluate the chemicals they produce or import and provide hazard information to employees and workers by labeling containers and preparing SDSs.

The old standard allowed chemical manufacturers and importers to convey hazard information on labels and MSDSs in any format they chose. The new modified standard provides a single set of harmonized criteria for classifying chemicals according to their health and physical hazards, and specifies hazard communication elements for labeling and SDSs.

While chemical manufacturers have had more time to prepare for GHS label compliance, one area of challenge that remains is how to integrate GHS labeling with previous hazardous material systems.

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In this new system, every hazardous chemical and substance not only carries a uniform label with information that is easier to understand ... but also provides warnings that are clearer ... necessary action more obvious ... and protections readily apparent.

- OSHA Assistant Director,
David Michaels



Distributors

Chemical distributors, including domestic and international shippers, must ensure that their GHS labels are durable enough to withstand the rigors that shipped goods endure to reach their destination. The physical and logistical hazards to such labels can multiply when exposed to severe weather, when using various modes of transport, or when crossing multiple borders.

Paint and Coatings Industry

Paint and coating formulators need to determine how to integrate GHS

compliance with the American coatings association's (ACA) hazardous materials identification system (HMIS®).

For those currently using HMIS labels for in-plant containers, related written documentation, and training, the question is how to achieve GHS compliance and integrate it with HMIS, which has been a paint and coatings industry standard for decades. Though differences exist in the two systems, such as opposite numbering for the level of hazard, OSHA allows employers to use HMIS in the workplace as long as it is consistent with GHS (HCS 2012) and workers are properly trained for GHS.

“Companies in the paint and coatings industry that have long used HMIS labels will now also want the ability to print GHS labels, HMIS labels, or some alternative that will accommodate the requirements of both systems,” said Glen Markham, Vice President of Business Development at RightAnswer.com, Inc., a chemical compliance and information specialist. “Such flexibility will help ease the industry’s transition to GHS labeling and minimize any operational disruption.”

Shipping Industry

Despite the harsh environments, extreme temperatures,

and rugged handling that freight is subjected to when shipped by land, air, or sea, its GHS labels must not tear, fade, peel off, or in any way become unreadable during transit.

Companies with chemicals exported by ocean freight must also comply with British Standard BS5609, a requirement for International Maritime Dangerous Goods (IMDG) certification. BS5609 Section 2 requires that the blank label and adhesive withstand a three-month, salt-water, submersion test, as well as artificial weathering tests of salt spray and sunlight. BS5609 Section 3 tests the printed label for abrasion resistance and print permanence, including artificial weathering (salt spray and sunlight) and tape removal. The test is conducted on labels printed with specific printers.

While selecting labels that are sturdy enough to meet required standards is vital to shippers, so is printing them on printers that produce compliant freight labels. Unfortunately, most label companies leave it up to the shipper to use compliant printers, with only a few suppliers that actually test the labels with the printers.

For instance, Avery Products Corporation certifies that certain label and printer combinations are GHS and BS5609 Section 2 and Section 3 compliant when used together. For a list of printers certified to work with Avery® UltraDuty™ GHS Chemical Labels, visit www.avery.com/BS5609.



End Users

From an end user point of view, if the GHS label comes on the container, the end user must maintain it.

However, GHS compliance is even required for chemical formulations purchased in bulk containers for cost savings, such as barrels of disinfectant, sanitizer, or sterilant that are transferred to smaller “down-packed” containers such as bottles for portable use.

If the down-packed container is shipped, then it requires a fully compliant GHS label. If it remains in the workplace, alternative labeling systems such as the HMIS or National Fire Protection Association (NFPA) are allowed. Yet, as a best practice, using fully compliant GHS labels is recommended for consistency and improved hazard communication.

Container sizes requiring GHS-compliant labeling generally range from 55-gallon drums down to spray bottles and even small samples or test vials.

The exception to the rule is that if a chemical is transferred to a “portable” secondary container, such as a flask, beaker, or dropper bottle for use only by the person who transferred it during the same work shift, a label is not required because it is considered “immediate use.” A wide range of end-user markets using a variety of container sizes are affected by the need to be fully GHS label compliant.

If I Have a GHS Label Do I Need a DOT Label?

Yes, Dept. of Transportation (DOT) labels must still be on the external part of a shipped container and must meet the DOT requirements set forth in 49 CFR 172, Subpart E. OSHA will allow both DOT and GHS pictograms for the same hazard on a label. While the DOT diamond label is required for all hazardous chemicals on the outside shipping container, chemicals in smaller containers inside the larger shipped container do not require the DOT diamond but do require the GHS pictograms.

Medical Facilities and Labs

Healthcare facility and laboratory end users range from managers of hospitals, medical labs, commercial R&D labs and research labs to EHS compliance officers. Many of these are affected by the GHS labeling rules and need to remain compliant.

Laboratories where chemical manipulation generally involves small amounts of a limited variety of chemicals for non-commercial use are covered by OSHA's Occupational Exposure to Hazardous Chemicals in Laboratories standard, not the GHS (HCS 2012) standard.

GHS labels are required for all labs connected with production processes, however, including quality control labs. Even so, many labs are adopting GHS to improve hazard communication and to remain consistent with bulk container labels.

In healthcare facilities, powerful chemicals like ethylene oxide are used to sterilize moisture- and heat-sensitive instruments. High-level disinfectants like glutaraldehyde are often used to disinfect equipment like endoscopes, bronchoscopes, and ear, nose, and throat instruments.

Medical and diagnostic tests are also performed daily in medical or research labs, where chemical hazards from toxins, flammables, and reactives to corrosives and radioactives are present. Labs, in fact, use large amounts of some chemicals like xylene, formalin, and alcohol, as well as smaller amounts of many others. Automated chemical analyzer systems, for instance, contain reservoirs of reagent as well as reagents with preservatives.

All of these medical facility applications, and more, will need to be GHS label compliant on a wide variety of containers.



Hospitality Industry

GHS label compliance is also vital for safety in the hotel, restaurant, bar, casino, and resort industries. In these industries, chemical formulations can range from cleaning and maintenance supplies to food preparation ingredients.

These applications may include common compounds that can be dangerous or deadly in the wrong combination, such as bleach, ammonia, chlorine, paint, grease, acetic acid (a vinegar ingredient) and potassium chloride (a food additive).

Industrial Applications

In an industrial setting, chemical formulations that are often downpacked into smaller containers and could require GHS labeling include industrial primers, coatings, sealants, lubricants, greases, cutting oils, rust removers, acids, alkalines, and common solvent-based cleaners such as degreasers, surfactants, disinfectants, and sanitizers.

GHS labels in the industrial sector may be required in applications ranging from manufacturing, plants, and operations, and overseen by maintenance managers, janitorial and sanitation supervisors, as well as EHS compliance officers.

How Does GHS Specifically Apply to Small Chemical Containers?

Even if the hazardous chemical is in a small bottle, a manufacturer, importer or distributor must attach a GHS label to a hazardous chemical's immediate container if it is to be transported. It cannot be attached only to the outside packaging of a shipped chemical.

If a chemical manufacturer is able to show that it is not feasible to use a label (i.e. pull-out, fold-out label) or tags containing full GHS information, the shipped small chemical container at a minimum must contain the following:

Product identifier, appropriate pictograms, manufacturer's name and phone number, signal word, and a statement indicating that the full label information for the chemical is on the outside packaging that is holding the smaller containers.

Additionally, the outside packaging at a minimum must comply with the following:

- * Outer label has all applicable GHS elements and it must be maintained (i.e. not torn, faded or destroyed)
- * Information stating that the small container must be stored in the outer container that has the complete GHS label
- * Ensure that outer packaging does not conflict with any other standard (i.e. outer packaging cannot be flammable if it contains a flammable chemical)

4 Tips to Ensure GHS Compliance for Secondary Chemical Container Labels

For those using chemical formulations in a range of industries, here are a few tips that can make GHS label compliance easy, even for smaller “down-packed” chemical container labeling.

1 Have GHS-compliant SDSs and labels, and train workers to handle hazardous chemicals properly. Employers should now be receiving updated SDSs with incoming bulk chemicals. Since GHS label information comes from SDSs, it is important to obtain the latest documentation from your upstream suppliers. If your supplier is still providing MSDSs or no documentation, then you can make a good-faith effort to contact your supplier. If you still are not able to receive the SDSs, then the OSHA area office may be able to provide assistance. In addition, having a written hazard communication program and ensuring employees are trained, are important components of being compliant with the HCS.



2 Label all secondary containers. Though convenient, using a permanent marker to identify a chemical name on a secondary container isn't compliant with OSHA's HCS. You must ensure all secondary containers are labeled with the appropriate information. Using fully compliant GHS labels is ideal for this because they will be consistent with the original GHS labels on the bulk containers and it will be easier for employees to understand and communicate specific information regarding the physical and health hazards of the chemicals—which is required in an OSHA audit. If an employer opts to use alternative labeling systems like NFPA or HMIS, the employer bears the burden of establishing that it has achieved a level of employee awareness which equals or exceeds that which would have been achieved if the employer had used labels containing complete health effects information.



3 Select durable GHS labels. Unlike standard labels, industrial labels are engineered for use in harsh environments like warehouses, manufacturing facilities, commercial settings, and in the field. They must be durable and able to withstand exposure to chemicals, abrasion, tearing, moisture, sunlight, and extreme temperatures.



The challenge is that to be GHS compliant, labels must stay reliably affixed without fading or becoming unreadable despite harsh indoor or outdoor conditions including international shipping. This requires not only a durable label substrate but also a marine-grade adhesive.

That is why industrial-grade, durable synthetic GHS labels like the ones offered by Avery, are designed to not only meet these requirements, but are

also constructed with a marine-grade adhesive that is waterproof and passes a 90-day seawater submersion adhesion test.

Unlike typical labels, which crack and harden in harsh conditions, industrial-grade GHS labels are UV resistant with 2+ years of outdoor UV life. The most rugged labels are also temperature resistant and can be applied as low as 10° F with a service temperature range from -40° F up to 300° F.

4 Take advantage of free label-printing software and existing printers.

Organizations can avoid costly start-up costs, which typically include expensive specialized printers and software, by using their existing desktop printers. A select few companies even offer free GHS label-printing software along with their labels.

For instance, Avery is one of the only companies that provide GHS label software that works with their UltraDuty GHS Chemical labels at no cost. The Avery Design & Print GHS Wizard software makes it easy for employees to create and print their own GHS labels using standard laser printers and pigment-based inkjet printers. Users can select from pre-designed templates or create them on demand at their desk. Most employees will find the step-by-step process intuitive, since it is similar to creating an office document from pre-designed templates.

The free software includes a database of hundreds of common chemicals that can be automatically pre-populated into the GHS label design. It also provides all the



pictograms and GHS-compliant statements needed for GHS labeling; easy insertion of a company logo or other images; customizable text; simple generation of 18 types of barcodes; and a sequential numbering feature to add lot numbers or other variable data.

No download is required, as the cloud-based software operates from the company's website (www.avery.com/GHS), and your GHS label templates can be securely saved online or to a computer for future use. Besides GHS-compliant labels, the software is also capable of creating other safety labels such as ANSI, OSHA, NFPA, and Arc Flash labels.

“No-cost software with modifiable templates like Avery’s, allow you to quickly create GHS labels in the quantities you need, at the time you need them,” said Howell. “You can quickly print a single label for a spray bottle or dozens.”

What's Next?

Since GHS labeling falls under a United Nations standard that OSHA follows, GHS updates will now occur about every four years. For this reason, executives from a variety of industries will want to work with a GHS label provider and perhaps a consultant that will keep them up to date with these changes.

For more info, visit www.avery.com/GHS.