DIISOBUTYLALUMINUM HYDRIDE, 0.85M in tetrahydrofuran (14-16 wt%)

Safety Data Sheet OMAL021.5

Date of issue: 01/12/2017
Revision date: 03/05/2019
Version: 1.1

SECTION 1: Identification

1.1. Identification

Product name: DIISOBUTYLALUMINUM HYDRIDE, 0.85M in tetrahydrofuran (14-16 wt%)
Product code: OMAL021.5
Product form: Mixture
Physical state: Liquid
Formula: C8H19Al
Synonyms: DIBAL-H in tetrahydrofuran
            BIS(ISOBUTYL)HYDROALUMINUM in tetrahydrofuran
            HYDROBIS(2-METHYLPROPYL)ALUMINUM in tetrahydrofuran
Chemical family: METAL ALKYL IN SOLVENT

1.2. Recommended use and restrictions on use

Recommended use: Chemical intermediate

1.3. Supplier

GELEST, INC.
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

1.4. Emergency telephone number

Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification
- Flammable liquids Category 2: H225 - Highly flammable liquid and vapor
- Substances and mixtures which in contact with water emit flammable gases Category 1: H260 - In contact with water releases flammable gases which may ignite spontaneously
- Acute toxicity (oral) Category 4: H302 - Harmful if swallowed
- Skin corrosion/irritation Category 1B: H314 - Causes severe skin burns and eye damage
- Serious eye damage/eye irritation Category 1: H318 - Causes serious eye damage
- Carcinogenicity Category 2: H351 - Suspected of causing cancer
- Specific target organ toxicity (single exposure) Category 3: H335 - May cause respiratory irritation

Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US): 🥭/jpeg

Signal word (GHS US): Danger

Hazard statements (GHS US): H225 - Highly flammable liquid and vapor
                                H260 - In contact with water releases flammable gases which may ignite spontaneously
                                H302 - Harmful if swallowed
                                H314 - Causes severe skin burns and eye damage
                                H318 - Causes serious eye damage
                                H335 - May cause respiratory irritation
                                H351 - Suspected of causing cancer

Precautionary statements (GHS US): P201 - Obtain special instructions before use.
                                   P202 - Do not handle until all safety precautions have been read and understood.
                                   P280 - Wear protective gloves/protective clothing/eye protection/face protection.
                                   P310 - Immediately call a POISON CENTER
                                   P210 - Keep away from heat, sparks, open flames. - No smoking.
                                   P231+P232 - Handle under inert gas. Protect from moisture
                                   P240 - Ground/Bond container and receiving equipment
                                   P241 - Use explosion-proof electrical equipment
                                   P242 - Use only non-sparking tools.
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P243 - Take precautionary measures against static discharge.
P260 - Do not breathe vapors.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P301+P312 - If swallowed: Call a POISON CENTER if you feel unwell
P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P330+P331 - If swallowed: Call a POISON CENTER if you feel unwell
P303+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use dry chemical powder followed by sand or dolomite to extinguish.
P402+P404 - Store in a dry place. Store in a closed container.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P403+P235 - Keep in a cool place
P405 - Store locked up.
P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Hazards not otherwise classified (HNOC)
No additional information available

2.4. Unknown acute toxicity (GHS US)
Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures

| Name                        | Product identifier | %     | GHS-US classification
|-----------------------------|--------------------|-------|------------------------
| Tetrahydrofuran             | (CAS-No.) 109-99-9 | 84 - 86 | Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319 Carc. 2, H351 STOT SE 3, H335 |

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact : Wash with plenty of soap and water. Get immediate medical advice/attention.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Get immediate medical advice/attention.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : Causes severe skin burns and eye damage. Suspected of causing cancer.

Symptoms/effects after inhalation : May cause respiratory irritation. The solvent, tetrahydrofuran, is mildly toxic by inhalation.

Symptoms/effects after skin contact : Causes (severe) skin burns.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Harmful if swallowed. Presumed to be a poison. Swallowing a small quantity of this material will result in serious health hazard.

4.3. Immediate medical attention and special treatment, if necessary
No additional information available
DIISOBUTYLALUMINUM HYDRIDE, 0.85M in tetrahydrofuran (14-16 wt%)  
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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>Dry chemical powder followed by sand or dolomite.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsuitable extinguishing media</td>
<td>Water.</td>
</tr>
</tbody>
</table>

5.2. Specific hazards arising from the chemical

<table>
<thead>
<tr>
<th>Fire hazard</th>
<th>Highly flammable liquid and vapor. In contact with water releases flammable gases which may ignite spontaneously.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosion hazard</td>
<td>Container explosion may occur during fire conditions. May form flammable/explosive vapor-air mixture.</td>
</tr>
</tbody>
</table>

5.3. Special protective equipment and precautions for fire-fighters

<table>
<thead>
<tr>
<th>Firefighting instructions</th>
<th>If material is ignited, allow to burn. Exercise caution when fighting any chemical fire. In case of fire: Stop leak if safe to do so.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protection during firefighting</td>
<td>Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.</td>
</tr>
</tbody>
</table>

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

<table>
<thead>
<tr>
<th>General measures</th>
<th>Eliminate every possible source of ignition. Use special care to avoid static electric charges. Laboratory and production areas must be equipped with special fire-extinguishing media for pyrophorics.</th>
</tr>
</thead>
</table>

6.1.1. For non-emergency personnel

<table>
<thead>
<tr>
<th>Protective equipment</th>
<th>Wear protective equipment as described in Section 8.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency procedures</td>
<td>Evacuate unnecessary personnel.</td>
</tr>
</tbody>
</table>

6.1.2. For emergency responders

<table>
<thead>
<tr>
<th>Protective equipment</th>
<th>Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: “Exposure controls/personal protection”.</th>
</tr>
</thead>
</table>

6.2. Environmental precautions

| Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. |

6.3. Methods and material for containment and cleaning up

<table>
<thead>
<tr>
<th>For containment</th>
<th>Concentrate containment efforts to adjacent combustibles.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods for cleaning up</td>
<td>Cover with dry chemical extinguishing powder, lime, sand or soda ash. Do not use water. Remove combustible materials in the vicinity of the spill. Allow time for decomposition or fire to burn out, then sweep material and transfer to a suitable container for disposal. Use only non-sparking tools.</td>
</tr>
</tbody>
</table>

6.4. Reference to other sections

| See Heading 8. Exposure controls and personal protection. |

SECTION 7: Handling and storage

7.1. Precautions for safe handling

<table>
<thead>
<tr>
<th>Additional hazards when processed</th>
<th>Handle empty containers with care because residual vapors are flammable. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep away from any possible contact with water, because of violent reaction and possible flash fire.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precautions for safe handling</td>
<td>Avoid all eye and skin contact and do not breathe vapor and mist. Do not allow contact with water. Handle under inert gas. Protect from moisture. Laboratory and production areas must be equipped with special fire-extinguishing media for pyrophorics. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use only outdoors or in a well-ventilated area. Use only non-sparking tools.</td>
</tr>
<tr>
<td>Hygiene measures</td>
<td>Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.</td>
</tr>
</tbody>
</table>

7.2. Conditions for safe storage, including any incompatibilities

<table>
<thead>
<tr>
<th>Technical measures</th>
<th>Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage conditions</td>
<td>Keep container tightly closed. Store in a dry place. Store in a closed container. Store locked up. Store in sealed containers under nitrogen or argon with &lt;10ppm oxygen. Store &lt; 10°C.</td>
</tr>
<tr>
<td>Information on mixed storage</td>
<td>Flammable and combustible materials should not be stored in or near working areas for pyrophorics.</td>
</tr>
</tbody>
</table>

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Storage area: Store in a well-ventilated place. Store away from heat.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Diisobutylaluminum hydride (1191-15-7)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TWA (mg/m³)</td>
<td>2 mg/m³</td>
</tr>
<tr>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tetrahydrofuran (109-99-9)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH TWA (ppm)</td>
<td>50 ppm</td>
</tr>
<tr>
<td>ACGIH STEL (ppm)</td>
<td>100 ppm</td>
</tr>
<tr>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>590 mg/m³</td>
</tr>
<tr>
<td>OSHA PEL (TWA) (ppm)</td>
<td>200 ppm</td>
</tr>
<tr>
<td>US IDLH (ppm)</td>
<td>2000 ppm (10% LEL)</td>
</tr>
<tr>
<td>NIOSH REL (TWA) (mg/m³)</td>
<td>590 mg/m³</td>
</tr>
<tr>
<td>NIOSH REL (TWA) (ppm)</td>
<td>200 ppm</td>
</tr>
<tr>
<td>NIOSH REL (STEL) (mg/m³)</td>
<td>735 mg/m³</td>
</tr>
<tr>
<td>NIOSH REL (STEL) (ppm)</td>
<td>250 ppm</td>
</tr>
</tbody>
</table>

8.2. Appropriate engineering controls

Appropriate engineering controls: Glove box or sealed system under inert atmosphere is required. Provide local exhaust or general room ventilation.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:
Neoprene or nitrile rubber gloves

Eye protection:
Full face shield with chemical workers goggles. Contact lenses should not be worn

Skin and body protection:
Wear suitable protective clothing. Fire resistant laboratory jacket or apron should be worn.

Respiratory protection:
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Clear liquid. Fumes and ignites in air.</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>142.22 g/mol</td>
</tr>
<tr>
<td>Color</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>&lt; 0 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>65 °C initial (tetrahydrofuran)</td>
</tr>
<tr>
<td>Flash point</td>
<td>-14 °C</td>
</tr>
</tbody>
</table>
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Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : Highly flammable liquid and vapor, in contact with water releases flammable gases which may ignite spontaneously
Vapor pressure : No data available
Relative vapor density at 20 °C : > 1
Relative density : 0.84
Solubility : Reacts violently with water.
Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosion limits : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable in sealed containers under dry inert atmosphere when stored <10°C. Product activity decreases ~1%/month if stored at 20°C.

10.3. Possibility of hazardous reactions
The product can generate small amounts of hydrogen when exposed to alkalies and protic materials such as water and alcohol.

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Substance</th>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIISOBUTYLALUMINUM HYDRIDE, 0.85M in tetrahydrofuran (14-16 wt%) (1191-15-7)</td>
<td>ATE US (oral)</td>
<td>1918.605 mg/kg body weight</td>
</tr>
<tr>
<td>Tetrahydrofuran (109-99-9)</td>
<td>LD50 oral rat</td>
<td>1650 mg/kg</td>
</tr>
<tr>
<td></td>
<td>LC50 inhalation rat (ppm)</td>
<td>21000 ppm (Exposure time: 3 h)</td>
</tr>
<tr>
<td></td>
<td>ATE US (oral)</td>
<td>1650 mg/kg body weight</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Causes severe skin burns and eye damage.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Suspected of causing cancer.

<table>
<thead>
<tr>
<th>Substance</th>
<th>National Toxicology Program (NTP) Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrahydrofuran (109-99-9)</td>
<td>1 - Evidence of Carcinogenicity</td>
</tr>
</tbody>
</table>

Reproductive toxicity : Not classified
Specific target organ toxicity – single exposure : May cause respiratory irritation.
Specific target organ toxicity – repeated exposure : Not classified
Aspiration hazard : May cause damage to organs through prolonged or repeated exposure

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Potential Adverse human health effects and symptoms:
- Symptoms/effects after inhalation: May cause respiratory irritation. The solvent, tetrahydrofuran, is mildly toxic by inhalation.
- Symptoms/effects after skin contact: Causes severe skin burns.
- Symptoms/effects after eye contact: Causes serious eye damage.
- Symptoms/effects after ingestion: Harmful if swallowed. Presumed to be a poison. Swallowing a small quantity of this material will result in serious health hazard.

Reason for classification: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

| Tetrahydrofuran (109-99-9) | LC50 fish 1 | 1970 - 2360 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through]) |
| Tetrahydrofuran (109-99-9) | LC50 fish 2 | 2700 - 3600 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static]) |

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

| Tetrahydrofuran (109-99-9) | BCF fish 1 | (will not bioconcentrate) |
| Log Pow | 0.45 (at 25 °C) |

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
- Other adverse effects: This substance may be hazardous to the environment.
- Effect on the ozone layer: No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods
- Sewage disposal recommendations: Do not dispose of waste into sewer.
- Product/Packaging disposal recommendations: Incinerate. Dispose in a safe manner in accordance with local/national regulations. Dispose of content/container to licensed waste disposal facility. This is a RCRA hazardous waste: 40 CFR 261.21 (i.e. ignitable) 40 CFR 261.23 (i.e. reactive).
- Additional information: Handle empty containers with care because residual vapors are flammable.
- Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
- UN-No.(DOT): 3399
- DOT NA no.: UN3399

14.2. UN proper shipping name
- Transport document description: UN3399 Organometallic substance, liquid, water-reactive, flammable (DIISOBUTYLALUMINUM HYDRIDE, 0.85M in tetrahydrofuran (14-16 wt%)), 4.3 (3), I
- Proper Shipping Name (DOT): Organometallic substance, liquid, water-reactive, flammable (DIISOBUTYLALUMINUM HYDRIDE, 0.85M in tetrahydrofuran (14-16 wt%))
- Class (DOT): 4.3 - Class 4.3 - Dangerous when wet material 49 CFR 173.124
- Packing group (DOT): I - Great Danger
- Hazard labels (DOT): 4.3 - Dangerous when wet 3 - Flammable liquid

DOT Packaging Non Bulk (49 CFR 173.xxx): 201
DOT Packaging Bulk (49 CFR 173.xxx): 244
DOT Packaging Exceptions (49 CFR 173.xxx): None
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DOT Symbols : G - Identifies PSN requiring a technical name

14.3. Additional information

Emergency Response Guide (ERG) Number : 138

Other information : No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : D - The material must be stowed “on deck only” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.

DOT Vessel Stowage Other : 13 - Keep as dry as reasonably practicable, 40 - Stow “clear of living quarters”, 52 - Stow “separated from” acids

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 1 L

SECTION 15: Regulatory information

15.1. US Federal regulations

Diisobutylaluminum hydride (1191-15-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Tetrahydrofuran (10999-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

EPA TSCA Regulatory Flag
T - T - indicates a substance that is the subject of a final TSCA section 4 test rule.

15.2. International regulations

CANADA

Diisobutylaluminum hydride (1191-15-7)
Listed on the Canadian NDSL (Non-Domestic Substances List)

Tetrahydrofuran (109-99-9)
Listed on the Canadian DSL (Domestic Substances List)

WHMIS Classification
Class B Division 2 - Flammable Liquid
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

EU-Regulations

Diisobutylaluminum hydride (1191-15-7)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Tetrahydrofuran (109-99-9)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Diisobutylaluminum hydride (1191-15-7)
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECCSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the Korean ECL (Existing Chemicals List)
Listed on NIloC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
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**Tetrahydrofuran (109-99-9)**
Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)

**Diisobutylaluminum hydride (1191-15-7)**
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

**Tetrahydrofuran (109-99-9)**
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List

**SECTION 16: Other information**

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-Phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapor</td>
</tr>
<tr>
<td>H250</td>
<td>Catches fire spontaneously if exposed to air</td>
</tr>
<tr>
<td>H260</td>
<td>In contact with water releases flammable gases which may ignite spontaneously</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
<tr>
<td>H351</td>
<td>Suspected of causing cancer</td>
</tr>
</tbody>
</table>

Abbreviations and acronyms:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND</td>
<td>Not Determined, No Data</td>
</tr>
<tr>
<td>NA</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>LD</td>
<td>Lethal Dose</td>
</tr>
<tr>
<td>LC</td>
<td>Lethal Concentration</td>
</tr>
<tr>
<td>ATE</td>
<td>Acute Toxicity Estimates</td>
</tr>
<tr>
<td>H</td>
<td>hour</td>
</tr>
<tr>
<td>°</td>
<td>°C unless otherwise stated</td>
</tr>
<tr>
<td>mmHg, torr</td>
<td>millimeters Hg, torr</td>
</tr>
<tr>
<td>PEL</td>
<td>permissible exposure level</td>
</tr>
<tr>
<td>TWA</td>
<td>time weighted average</td>
</tr>
<tr>
<td>TLV</td>
<td>threshold limit value</td>
</tr>
<tr>
<td>TG</td>
<td>Test Guideline</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety and Health</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>HMIS</td>
<td>Hazardous Material Information System</td>
</tr>
<tr>
<td>CAS No.</td>
<td>Chemical Abstract Service Registration Number</td>
</tr>
<tr>
<td>EC No.</td>
<td>European Commission Registration Number</td>
</tr>
<tr>
<td>EC Index No.</td>
<td>European Commission Index Number</td>
</tr>
<tr>
<td>OECD</td>
<td>The Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>GHS</td>
<td>The Globally Harmonized System of Classification and Labelling</td>
</tr>
<tr>
<td>APF</td>
<td>Assigned Protection Factor</td>
</tr>
</tbody>
</table>

**Hazard Rating**

**Health**

3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

**Flammability**

4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

**Physical**

2 Moderate Hazard - Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.

Prepared by safety and environmental affairs.

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Version: 1.1 

SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
DIISOBUTYLALUMINUM HYDRIDE, 0.85M in tetrahydrofuran (14-16 wt%)
Safety Data Sheet

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