Section 1. Identification

GHS product identifier : MAPP GAS (Petroleum Gas, MAPD)

Other means of identification : MAP, MAPP, Methylacetylene-Propadiene, Mixture of Methylacetylene and Propadiene

Product use : Synthetic/Analytical chemistry.

Synonym : MAPP, Methylacetylene-Propadiene, Mixture of Methylacetylene and Propadiene

SDS # : 002015

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

24-hour telephone : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE GASES - Category 1
GASES UNDER PRESSURE - Liquefied gas

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Extremely flammable gas.
May form explosive mixtures with air.
Contains gas under pressure; may explode if heated.
May cause frostbite.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS’S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position. Approach suspected leak area with caution.

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Response : Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.

Storage : Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal : Not applicable.

Hazard not otherwise classified : Liquid can cause burns similar to frostbite.
### Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>MAP, MAPP, Methylacetylene-Propadiene, Mixture of Methylacetylene and Propadiene</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>propylene</td>
<td>40 - 50</td>
<td>115-07-1</td>
</tr>
<tr>
<td>methyl acetylene</td>
<td>27 - 33</td>
<td>74-99-7</td>
</tr>
<tr>
<td>1,2-propadiene</td>
<td>13 - 15</td>
<td>463-49-0</td>
</tr>
<tr>
<td>Propane</td>
<td>1 - 5</td>
<td>74-98-6</td>
</tr>
<tr>
<td>N-Butane</td>
<td>2 - 5</td>
<td>106-97-8</td>
</tr>
<tr>
<td>isobutane</td>
<td>2 - 5</td>
<td>75-28-5</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

### Section 4. First aid measures

#### Description of necessary first aid measures

**Eye contact**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

**Inhalation**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin contact**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Get medical attention if symptoms occur. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. As this product rapidly becomes a gas when released, refer to the inhalation section.

#### Most important symptoms/effects, acute and delayed

**Potential acute health effects**

- **Eye contact**: Liquid can cause burns similar to frostbite.
- **Inhalation**: No known significant effects or critical hazards.
- **Skin contact**: Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
- **Frostbite**: Try to warm up the frozen tissues and seek medical attention.
- **Ingestion**: Ingestion of liquid can cause burns similar to frostbite.

#### Over-exposure signs/symptoms
Section 4. First aid measures

<table>
<thead>
<tr>
<th>Protection of first-aiders</th>
<th>Notes to physician</th>
<th>Specific treatments</th>
<th>Indication of immediate medical attention and special treatment needed, if necessary</th>
</tr>
</thead>
<tbody>
<tr>
<td>No action shall be taken involving any personal risk or without suitable training.</td>
<td>Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</td>
<td>No specific treatment.</td>
<td>No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.</td>
</tr>
<tr>
<td>Adverse symptoms may include the following:, frostbite</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin contact</td>
<td>Ingestion</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See toxicological information (Section 11)

Section 5. Fire-fighting measures

<table>
<thead>
<tr>
<th>Extinguishing media</th>
<th>Suitable extinguishing media</th>
<th>Unsuitable extinguishing media</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use an extinguishing agent suitable for the surrounding fire.</td>
<td></td>
<td>None known.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific hazards arising from the chemical</td>
<td>Hazardous thermal decomposition products</td>
<td></td>
</tr>
<tr>
<td>Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.</td>
<td>Decomposition products may include the following materials: carbon dioxide carbon monoxide</td>
<td></td>
</tr>
<tr>
<td>Special protective actions for fire-fighters</td>
<td>Special protective equipment for fire-fighters</td>
<td></td>
</tr>
<tr>
<td>Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.</td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.</td>
<td></td>
</tr>
</tbody>
</table>

Section 6. Accidental release measures

<table>
<thead>
<tr>
<th>Personal precautions, protective equipment and emergency procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>For non-emergency personnel</td>
</tr>
<tr>
<td>For emergency responders</td>
</tr>
</tbody>
</table>
Section 6. Accidental release measures

Environmental precautions: Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

propylene

ACGIH TLV (United States, 1/2005).
TWA: 500 ppm 8 hours. Form: All forms
ACGIH TLV (United States, 3/2012).
TWA: 500 ppm 8 hours.

ACGIH TLV (United States, 3/2012).
TWA: 1640 mg/m³ 8 hours.
TWA: 1000 ppm 8 hours.

methyl acetylene

ACGIH TLV (United States, 1/2013).
TWA: 1650 mg/m³ 10 hours.
TWA: 1000 ppm 10 hours.

OSHA PEL (United States, 6/2010).
TWA: 1650 mg/m³ 8 hours.
TWA: 1000 ppm 8 hours.

TWA: 1650 mg/m³ 8 hours.
TWA: 1000 ppm 8 hours.

012-PROPADIEN

None.

Propene

NIOSH REL (United States, 10/2013).
TWA: 500 ppm 8 hours.
TWA: 1000 ppm 8 hours.
TWA: 1650 mg/m³ 10 hours.
TWA: 1000 ppm 10 hours.
Section 8. Exposure controls/personal protection

TWA: 1800 mg/m³ 10 hours.
TWA: 1000 ppm 10 hours.

OSHA PEL (United States, 2/2013).
TWA: 1800 mg/m³ 8 hours.
TWA: 1000 ppm 8 hours.

TWA: 1800 mg/m³ 8 hours.
TWA: 1000 ppm 8 hours.

N-Butane

NIOSH REL (United States, 10/2013).
TWA: 1900 mg/m³ 10 hours.
TWA: 800 ppm 10 hours.

TWA: 1900 mg/m³ 8 hours.
TWA: 800 ppm 8 hours.

ACGIH TLV (United States, 3/2015).
STEL: 1000 ppm 15 minutes.

isobutane

NIOSH REL (United States, 4/2013).
TWA: 1900 mg/m³ 10 hours.
TWA: 800 ppm 10 hours.

ACGIH TLV (United States, 6/2013).
STEL: 1000 ppm 15 minutes.

Appropriate engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Section 8. Exposure controls/personal protection

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state: Gas. [Liquefied gas]
Color: Not available.
Molecular weight: 42 g/mol
Melting/freezing point: -102.7°C (-152.9°F) This is based on data for the following ingredient: Methyl Acetylene. Weighted average: -151.39°C (-240.5°F)

Critical temperature: Lowest known value: 91.85°C (197.3°F) (propylene).

Odor: Not available.
Odor threshold: Not available.
pH: Not available.
Flash point: Not available.
Burning time: Not applicable.
Burning rate: Not applicable.
Evaporation rate: Not available.
Flammability (solid, gas): Not available.
Lower and upper explosive (flammable) limits: Lower: 2%
Upper: 13%
Vapor pressure: Not available.
Vapor density: Highest known value: 2.1 (Air = 1) (Butane). Weighted average: 1.52 (Air = 1)
Gas Density (lb/ft³): Weighted average: 0.11
Relative density: Not available.
Solubility: Not available.
Solubility in water: Not available.
Partition coefficient: n-octanol/water: Not available.
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
SADT: Not available.
Viscosity: Not applicable.

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of hazardous reactions: Hazardous reactions or instability may occur under certain conditions of storage or use.

Conditions to avoid: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials: Oxidizers.
### Section 10. Stability and reactivity

#### Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

#### Hazardous polymerization
May Occur.
Conditions to Avoid: Elevated temperatures and pressures. Polymerization catalysts, such as metal alkyls, can cause uncontrolled polymerization. Contamination with oxygen can cause propadiene to form hazardous peroxides.

INHIBITORS/STABILIZERS
An inhibitor is added to the MAPD mixture to prevent potential unstable peroxide formation. Butanes (iso and/or normal) are also added to the MAPD mixture to prevent potential concentration of the methylacetylene and propadiene from reaching concentration levels that would render the mixture unstable in case of weathering off (evaporation of light components).

### Section 11. Toxicological information

#### Information on toxicological effects

##### Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Butane isobutane</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>658000 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>658000 mg/m³</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**
Not available.

**Sensitization**
Not available.

**Mutagenicity**
Not available.

**Carcinogenicity**
Not available.

**Classification**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>propylene</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>

**Reproductive toxicity**
Not available.

**Teratogenicity**
Not available.

**Specific target organ toxicity (single exposure)**
Not available.

**Specific target organ toxicity (repeated exposure)**
Not available.

**Aspiration hazard**
Not available.

**Information on the likely routes of exposure**
Not available.

---

**Date of issue/Date of revision**: 7/1/2016  
**Date of previous issue**: No previous validation  
**Version**: 0.01
Section 11. Toxicological information

Potential acute health effects

Eye contact : Liquid can cause burns similar to frostbite.
Inhalation : No known significant effects or critical hazards.
Skin contact : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.
Ingestion : Ingestion of liquid can cause burns similar to frostbite.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following: frostbite
Inhalation : No specific data.
Skin contact : Adverse symptoms may include the following: frostbite
Ingestion : Adverse symptoms may include the following: frostbite

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects
Not available.

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates
Not available.

Section 12. Ecological information

Toxicity
Not available.

Persistence and degradability
Not available.

Bioaccumulative potential
Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>propylene</td>
<td>1.77</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>methyl acetylene</td>
<td>0.94</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>1,2-propadiene</td>
<td>1.45</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Propane</td>
<td>1.09</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>N-Butane</td>
<td>2.89</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>isobutane</td>
<td>2.8</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

Mobility in soil

Soil/water partition coefficient (K_{OC}): Not available.

Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT</th>
<th>TDG</th>
<th>Mexico</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1060</td>
<td>UN1060</td>
<td>UN1060</td>
<td>UN1060</td>
<td>UN1060</td>
<td>UN1060</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Methyl Acetylene and Propadiene mixtures, stabilized</td>
<td>Methyl Acetylene and Propadiene mixtures, stabilized</td>
<td>Methyl Acetylene and Propadiene mixtures, stabilized</td>
<td>Methyl Acetylene and Propadiene mixtures, stabilized</td>
<td>Methyl Acetylene and Propadiene mixtures, stabilized</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Packing group: -

Environment: No.

Additional information: -

Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.13-2.17 (Class 2).

Explosive Limit and Limited Quantity Index: 0.125

ERAP Index: 3000

Passenger Carrying Road or Rail Index: Forbidden

Date of issue/Date of revision: 7/1/2016

Date of previous issue: No previous validation

Version: 0.01
Section 14. Transport information

“Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product.”

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Section 15. Regulatory information

U.S. Federal regulations:
- TSCA 8(a) CDR Exempt/Partial exemption: Not determined
- United States inventory (TSCA 8b): All components are listed or exempted.
- Clean Air Act (CAA) 112 regulated flammable substances: propylene; Methyl Acetylene; 1,2-Propadiene; Isobutane; Butane; propane

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Not listed
Clean Air Act Section 602 Class I Substances: Not listed
Clean Air Act Section 602 Class II Substances: Not listed
DEA List I Chemicals (Precursor Chemicals): Not listed
DEA List II Chemicals (Essential Chemicals): Not listed

SARA 302/304
Composition/information on ingredients
No products were found.

SARA 304 RQ: Not applicable.

SARA 311/312
Classification: Fire hazard
Sudden release of pressure

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>methyl acetylene</td>
<td>27 - 33</td>
<td>Yes.</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>1,2-propadiene</td>
<td>13 - 15</td>
<td>Yes.</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>Propane</td>
<td>1 - 5</td>
<td>Yes.</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>isobutane</td>
<td>2 - 5</td>
<td>Yes.</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

SARA 313

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements propylene</td>
<td>115-07-1</td>
<td>40 - 50</td>
</tr>
<tr>
<td>Supplier notification propylene</td>
<td>115-07-1</td>
<td>40 - 50</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 7/1/2016
Date of previous issue: No previous validation
Version: 0.01
Section 15. Regulatory information

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts: The following components are listed: PROPYLENE (PROPENE); PROPYNE; ISOBUTANE; BUTANE; PROPANE

New York: None of the components are listed.

New Jersey: The following components are listed: PROPYLENE; 1-PROPENE; METHYL ACETYLENE; 1-PROPYNE; PROPADIENE; 1,2-PROPADIENE; Isobutane; PROPANE, 2-METHYL-; BUTANE; PROPANE

Pennsylvania: The following components are listed: 1-PROPENE; 1-PROPYNE; PROPANE, 2-METHYL-; BUTANE; PROPANE

International regulations

International lists

National inventory

Australia: All components are listed or exempted.

Canada: All components are listed or exempted.

China: Not determined.

Europe: All components are listed or exempted.

Japan: All components are listed or exempted.

Malaysia: Not determined.

New Zealand: All components are listed or exempted.

Philippines: All components are listed or exempted.

Republic of Korea: All components are listed or exempted.

Taiwan: Not determined.

Canada

WHMIS (Canada): Class B1: Flammable Gases
Class A: Compressed Gas
CEPA DSL: Propylene; Isobutane; Butane; propadiene; Methyl Acetylene; Propane

CPR Compliance: This product has been classified with a hazard criteria of the CPR, and the MSDS contains all the information required for CPR.

Section 16. Other information

Canada Label requirements: Class B1: Flammable Gases
Class A: Compressed Gas

Hazardous Material Information System (U.S.A.)

Health: 1
Flammability: 1
Physical hazards: 4

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health: 1
Flammability: 4
Instability/Reactivity: 1
Special: 4

Date of issue/Date of revision: 7/1/2016
Date of previous issue: No previous validation
Version: 0.01
11/12
Section 16. Other information

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Gas 1, H220</td>
<td>Expert judgment</td>
</tr>
</tbody>
</table>

History

- Date of printing: 7/1/2016
- Date of issue/Revision: 7/1/2016
- Date of previous issue: No previous validation
- Version: 0.01

Key to abbreviations

- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- UN = United Nations

References

Not available.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.