## SAFETY DATA SHEET



Flammable Gas Mixture: 1,2-Butadiene / 1,3-Butadiene / Methane

## Section 1. Identification

GHS product identifier	: Flammable Gas Mixture: 1,2-Butadiene / 1,3-Butadiene / Methane
Other means of identification	: Not available.
Product use	: Synthetic/Analytical chemistry.
SDS #	: 018881
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 - Compressed gas GERM CELL MUTAGENICITY - Category 1B CARCINOGENICITY - Category 1
GHS label elements	
Hazard pictograms	
Signal word	: Danger
Hazard statements	<ul> <li>Extremely flammable gas. Contains gas under pressure; may explode if heated. May form explosive mixtures in Air. May displace oxygen and cause rapid suffocation. May cause genetic defects. May cause cancer.</li> </ul>
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. Approach suspected leak area with caution.
Prevention	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Response	: IF exposed or concerned: Get medical attention. Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
Storage	: Store locked up. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.

## Section 2. Hazards identification

Hazards not otherwise<br/>classified: In addition to any other important health or physical hazards, this product may displace<br/>oxygen and cause rapid suffocation.

## Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Not available.

CAS number/other ide	ntifiers	
CAS number	: Not applicable.	
Product code	: 018881	
Ingredient name		%
methane 1,3-butadiene		94 - 99 1 - 5

1,2-Butadiene 0.0001 - 0.5

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	<ul> <li>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.</li> </ul>
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 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. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: As this product is a gas, refer to the inhalation section.
Most important symptoms/e	ifects, acute and delayed
Most important symptoms/e Potential acute health effec	
Potential acute health effect	ts
Potential acute health effect Eye contact	ts : Contact with rapidly expanding gas may cause burns or frostbite.
Potential acute health effect Eye contact Inhalation	<ul> <li>ts</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>No known significant effects or critical hazards.</li> </ul>
Potential acute health effect Eye contact Inhalation Skin contact	<ul> <li>ts</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>No known significant effects or critical hazards.</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> </ul>
Potential acute health effect Eye contact Inhalation Skin contact Frostbite	<ul> <li>ts</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>No known significant effects or critical hazards.</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>Try to warm up the frozen tissues and seek medical attention.</li> <li>As this product is a gas, refer to the inhalation section.</li> </ul>
Potential acute health effect Eye contact Inhalation Skin contact Frostbite Ingestion	<ul> <li>ts</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>No known significant effects or critical hazards.</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>Try to warm up the frozen tissues and seek medical attention.</li> <li>As this product is a gas, refer to the inhalation section.</li> </ul>
Potential acute health effect Eye contact Inhalation Skin contact Frostbite Ingestion Over-exposure signs/symp	<ul> <li>ts</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>No known significant effects or critical hazards.</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>Try to warm up the frozen tissues and seek medical attention.</li> <li>As this product is a gas, refer to the inhalation section.</li> </ul>
Potential acute health effect Eye contact Inhalation Skin contact Frostbite Ingestion Over-exposure signs/symp Eye contact	<ul> <li>ts</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>No known significant effects or critical hazards.</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>Try to warm up the frozen tissues and seek medical attention.</li> <li>As this product is a gas, refer to the inhalation section.</li> <li>toms</li> <li>No specific data.</li> </ul>
Potential acute health effect Eye contact Inhalation Skin contact Frostbite Ingestion Over-exposure signs/symp Eye contact Inhalation	<ul> <li>ts</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>No known significant effects or critical hazards.</li> <li>Contact with rapidly expanding gas may cause burns or frostbite.</li> <li>Try to warm up the frozen tissues and seek medical attention.</li> <li>As this product is a gas, refer to the inhalation section.</li> <li>toms</li> <li>No specific data.</li> <li>No specific data.</li> </ul>

CAS number 74-82-8 106-99-0

590-19-2

## Section 4. First aid measures

Indication of immediate med	dical attention and special treatment needed, if necessary
Notes to physician	<ul> <li>Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</li> </ul>
Specific treatments	: No specific treatment.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

Extinguishing media	
Suitable extinguishing media	: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	: None known.
Specific hazards arising from the chemical	: 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.
Hazardous thermal decomposition products	: Decomposition products may include the following materials: carbon dioxide carbon monoxide
Special protective actions for fire-fighters	: 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.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	Accidental releases pose a serious fire or explosion hazard. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	:	If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	:	Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
Methods and materials for co	ont	ainment and cleaning up
Small spill	1	Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof

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tools and explosion-proof equipment.

### Section 6. Accidental release measures

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. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. 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). Store locked up. 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**

Ingredient name	Exposure limits
methane 1,3-butadiene	Oxygen Depletion [Asphyxiant] ACGIH TLV (United States, 3/2016).
	TWA: 4.4 mg/m <sup>3</sup> 8 hours.
	TWA: 2 ppm 8 hours.
	OSHA PEL (United States, 6/2016).
	STEL: 5 ppm 15 minutes.
	TWA: 1 ppm 8 hours.
	OSHA PEL 1989 (United States, 3/1989).
	STEL: 5 ppm 15 minutes.
	TWA: 1 ppm 8 hours.
1,2-Butadiene	None.

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.

## Section 8. Exposure controls/personal protection

Individual protection measu	<u>res</u>
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. 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.
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** 

Not available. Not available. Not available. Not applicable. Not applicable. Not available. Not available. Not available. Not available. Highest known value: 1.9 (Air = 1) (1,3-butadiene). Weighted average: 0.66 (Air = 1) Weighted average: 0.04 Not applicable. Not available.
Not available. Not available. Not applicable. Not applicable. Not available. Not available. Not available. Not available. Highest known value: 1.9 (Air = 1) (1,3-butadiene). Weighted average: 0.66 (Air = 1) Weighted average: 0.04
Not available. Not available. Not applicable. Not applicable. Not available. Not available. Not available. Not available. Not available. Highest known value: 1.9 (Air = 1) (1,3-butadiene). Weighted average: 0.66 (Air = 1)
Not available. Not available. Not applicable. Not available. Not available. Not available. Not available.
Not available. Not available. Not applicable. Not available. Not available. Not available.
Not available. Not available. Not applicable. Not available. Not available.
Not available. Not available. Not applicable. Not applicable. Not available.
Not available. Not available. Not applicable. Not applicable.
Not available. Not available. Not applicable.
Not available. Not available.
Not available.
Not available.
Netevoleble
Not available.
Lowest known value: -82.45°C (-116.4°F) (methane).
-108.9°C (-164°F) This is based on data for the following ingredient: 1,3-butadiene. Weighted average: -183.82°C (-298.9°F)
Not available.
Gas.

## Section 9. Physical and chemical properties

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Solubility in water	1	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. Stabil	ity 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	: Under normal conditions of storage and use, hazardous reactions will not occur.
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
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

#### Information on toxicological effects

#### Acute toxicity

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Product/ingredient name	Result	Species	Dose	Exposure
1,3-butadiene	LC50 Inhalation Gas.	Rat	128000 ppm	4 hours

#### Irritation/Corrosion

Not available.

#### **Sensitization**

Not available.

### **Mutagenicity**

Not available.

#### **Carcinogenicity**

Not available.

#### **Classification**

Product/ingredient name	OSHA	IARC	NTP
1,3-butadiene	-	1	Known to be a human carcinogen.

### Reproductive toxicity

Not available.

#### **Teratogenicity**

Not available.

## Section 11. Toxicological information

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Specific target organ toxici Not available.	<u>ty (</u>	single exposure)
Specific target organ toxicit Not available.	<u>ty (</u>	repeated exposure)
Aspiration hazard Not available.		
Information on the likely routes of exposure	:	Not available.
Potential acute health effects	<u>s</u>	
Eye contact	:	Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	:	No known significant effects or critical hazards.
Skin contact	:	Contact with rapidly expanding gas may cause burns or frostbite.
Ingestion	1	As this product is a gas, refer to the inhalation section.
Symptoms related to the phy	/sic	cal, chemical and toxicological characteristics
Eye contact	1	No specific data.
Inhalation	1	No specific data.
Skin contact		No specific data.
Ingestion	1	No specific data.
	<u>:ts</u>	and also chronic effects from short and long term exposure
Short term exposure		
Potential immediate effects	:	Not available.
Potential delayed effects	1	Not available.
Long term exposure Potential immediate	:	Not available.
effects		
Potential delayed effects		Not available.
Potential chronic health effective Not available.	eci	<u>5</u>
General	:	No known significant effects or critical hazards.
Carcinogenicity	:	May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	:	May cause genetic defects.
Teratogenicity	:	No known significant effects or critical hazards.
<b>Developmental effects</b>	:	No known significant effects or critical hazards.
Fertility effects	:	No known significant effects or critical hazards.
Numerical measures of toxic	itv	

## Acute toxicity estimates

Not available.

## Section 12. Ecological information

#### **Toxicity**

Not available.

#### Persistence and degradability

Not available.

#### **Bioaccumulative potential**

Product/ingredient name	LogPow	BCF	Potential
methane	1.09	-	low
1,3-butadiene	1.99	10	low
1,2-Butadiene	1.99	-	low

#### Mobility in soil

Soil/water partition	: Not available.
coefficient (Koc)	

#### 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

	DOT	TDG	Mexico	IMDG	ΙΑΤΑ
UN number	UN1954	UN1954	UN1954	UN1954	UN1954
UN proper shipping name	COMPRESSED GAS, FLAMMABLE, N.O.S. (methane, 1, 3-butadiene)	COMPRESSED GAS, FLAMMABLE, N.O.S. (methane, 1, 3-butadiene)	COMPRESSED GAS, FLAMMABLE, N.O.S. (methane, 1, 3-butadiene)	COMPRESSED GAS, FLAMMABLE, N.O.S. (methane, 1, 3-butadiene)	COMPRESSED GAS, FLAMMABLE, N.O.S. (methane, 1, 3-butadiene)
Transport hazard class(es)	2.1	2.1	2.1	2.1	2.1
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	<b>Reportable quantity</b> 200 lbs / 90.8 kg Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.	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	-	-	-

## Section 14. Transport information

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_	ERAP Index 3000	
	Passenger Carrying Ship Index Forbidden	
	Passenger Carrying Road or Rail Index Forbidden	

"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 : Not available. to Annex II of MARPOL 73/78 and the IBC Code

## Section 15. Regulatory information

U.S. Federal regulations	:	TSCA 8(a) PAIR:	buta-1,2-dier	ne			
		TSCA 8(a) CDR E	Exempt/Parti	ial exemption	n: Not determi	ned	
		United States inv	entory (TSC	CA 8b): All cor	mponents are	listed or exemp	ted.
		Clean Air Act (CA	AA) 112 regu	lated flamma	able substand	<b>es</b> : methane; 1	,3-butadiene
Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	:	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.					
<u>SARA 311/312</u>							
Classification	:	Fire hazard Sudden release of Delayed (chronic)		ď			
Composition/information	on	ingredients					
Name		%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
methane 1,3-butadiene		94 - 99 1 - 5	Yes. Yes.	Yes. Yes.	No. Yes.	No. Yes.	No. Yes.

## <u>SARA 313</u>

1,2-Butadiene

0.0001 - 0.5

Yes.

Yes.

No.

No.

No.

## Section 15. Regulatory information

	Product name	CAS number	%
Form R - Reporting requirements	1,3-butadiene	106-99-0	1 - 5
Supplier notification	1,3-butadiene	106-99-0	1 - 5

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	<ul> <li>The following components are listed: METHANE; MARSH GAS; 1,3-BUTADIENE; BUTADIENE</li> </ul>
New York	: None of the components are listed.
New Jersey	: The following components are listed: METHANE; 1,3-BUTADIENE; BIETHYLENE
Pennsylvania	: The following components are listed: METHANE; 1,3-BUTADIENE
California Prop. 65	

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

In	gredient name	Cancer	•		Maximum acceptable dosage level
1,:	3-butadiene	Yes.	Yes.	Yes.	No.

#### **International regulations**

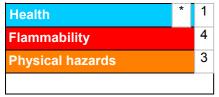
International lists	
National inventory	
Australia	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
Japan	: All components are listed or exempted.
Malaysia	: Not determined.
New Zealand	: Not determined.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
<u>Canada</u>	
WHMIS (Canada)	: Class A: Compressed gas. Class B-1: Flammable gas. Class D-2A: Material causing other toxic effects (Very toxic).
	<ul> <li>CEPA Toxic substances: The following components are listed: Methane; 1,3-Butadiene</li> <li>Canadian ARET: None of the components are listed.</li> <li>Canadian NPRI: The following components are listed: Volatile organic compounds; 1, 3-Butadiene</li> <li>Alberta Designated Substances: None of the components are listed.</li> <li>Ontario Designated Substances: None of the components are listed.</li> <li>Quebec Designated Substances: None of the components are listed.</li> </ul>

## Section 16. Other information

Canada Label requirements : Class A: Compressed gas.

Class A: Compressed gas. Class B-1: Flammable gas. Class D-2A: Material causing other toxic effects (Very toxic).

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



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.)



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

Classification		Justification	
Flam. Gas 1, H220 Press. Gas Comp. Gas, H280 Muta. 1B, H340 Carc. 1, H350		On basis of test data On basis of test data Calculation method Calculation method	
<u>History</u>		•	
Date of printing	: 11/10/2016		
Date of issue/Date of revision	: 11/10/2016		
Date of previous issue	: No previous validation		
Version	: 1		
Key to abbreviations	<ul> <li>1</li> <li>ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Internediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations</li> </ul>		
References	: Not available.		
Indicates information that	has changed from previously	/ issued version.	

Date of issue/Date of revision         : 11/10/2016         Date of previous issue         : No previous validation         Version         : 1	11/12
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## Section 16. Other information

#### 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.

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