SAFETY DATA SHEET



Flammable Gas Mixture: Carbon Dioxide / Methane / N-Butane

Section 1. Identification

GHS product identifier	: Flammable Gas Mixture: Carbon Dioxide / Methane / N-Butane
Other means of identification	: Not available.
Product use	: Synthetic/Analytical chemistry.
SDS #	: 002150
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
GHS label elements	
Hazard pictograms	
Signal word	: Danger
Hazard statements	 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 increase respiration and heart rate.
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

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

Section 3. Composition/information on ingredients

Substance/mixture Other means of identification

: Mixture

: Not available.

CAS number/other identifiers

CAS number	: Not applicable.
Product code	: 002150

Ingredient name	%	CAS number
Carbon Dioxide	2 - 99	124-38-9
methane	13.06 - 98	74-82-8
N-Butane	0.0001 - 20	106-97-8

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 necessa	r <u>y first aid measures</u>
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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	: As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects 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. **Frostbite** : Try to warm up the frozen tissues and seek medical attention. Ingestion : As this product is a gas, refer to the inhalation section. **Over-exposure signs/symptoms** Eye contact : No specific data. Inhalation : No specific data. **Skin contact** : No specific data. Ingestion : No specific data. Indication of immediate medical attention and special treatment needed, if necessary Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. Specific treatments : No specific treatment.

 Date of issue/Date of revision
 : 8/19/2015
 Date of previous issue
 : No previous validation
 Version
 : 0.01
 2/11

Section 4. First aid measures

Protection of first-aiders

: 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

or maximum possible distance. Eliminate all ignition sources if safe to do so.Special protective: Fire-fighters should wear appropriate protective equipment and self-contained breathing		<u> </u>	5
mediaUnsuitable 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 monoxideSpecial 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: Fire-fighters should wear appropriate protective equipment and self-contained breathing	Extinguishing media		
mediaSpecific 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 monoxideSpecial 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: Fire-fighters should wear appropriate protective equipment and self-contained breathing			: Use an extinguishing agent suitable for the surrounding fire.
from the chemicalpressure increase will occur and the container may burst, with the risk of a subsequent explosion.Hazardous thermal decomposition productsDecomposition products may include the following materials: carbon dioxide carbon monoxideSpecial protective actions for fire-fightersPromptly 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: Fire-fighters should wear appropriate protective equipment and self-contained breathing		1	: None known.
decomposition productscarbon dioxide carbon monoxideSpecial 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: Fire-fighters should wear appropriate protective equipment and self-contained breathing			pressure increase will occur and the container may burst, with the risk of a subsequent
for fire-fightersthere 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: Fire-fighters should wear appropriate protective equipment and self-contained breathing			carbon dioxide
•••••••••••••••••••••••••••••••••••••••		j.	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
	Special protective equipment for fire-fighters	5	: 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, protec	tiv	e 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	nt	ainment 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

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.

3/11

Section 7. Handling and storage

Precautions for safe handling	L	
Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and 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

Carbon Dioxide

ACGIH TLV (United States, 3/2015). Oxygen Depletion [Asphyxiant].

Depietion [Aspinyxiant].
STEL: 54000 mg/m ³ 15 minutes.
STEL: 30000 ppm 15 minutes.
TWA: 9000 mg/m ³ 8 hours.
TWA: 5000 ppm 8 hours.
NIOSH REL (United States, 10/2013).
STEL: 54000 mg/m ³ 15 minutes.
STEL: 30000 ppm 15 minutes.
TWA: 9000 mg/m ³ 10 hours.
TWA: 5000 ppm 10 hours.
OSHA PEL (United States, 2/2013).
TWA: 9000 mg/m ³ 8 hours.
TWA: 5000 ppm 8 hours.
OSHA PEL 1989 (United States, 3/1989).
STEL: 54000 mg/m ³ 15 minutes.
STEL: 54000 mg/m ³ 15 minutes. STEL: 30000 ppm 15 minutes.
STEL: 30000 ppm 15 minutes.
STEL: 30000 ppm 15 minutes. TWA: 18000 mg/m ³ 8 hours.
STEL: 30000 ppm 15 minutes. TWA: 18000 mg/m ³ 8 hours. TWA: 10000 ppm 8 hours.
STEL: 30000 ppm 15 minutes. TWA: 18000 mg/m ³ 8 hours. TWA: 10000 ppm 8 hours. Oxygen Depletion [Asphyxiant]
STEL: 30000 ppm 15 minutes. TWA: 18000 mg/m ³ 8 hours. TWA: 10000 ppm 8 hours. Oxygen Depletion [Asphyxiant] NIOSH REL (United States, 10/2013).
STEL: 30000 ppm 15 minutes. TWA: 18000 mg/m ³ 8 hours. TWA: 10000 ppm 8 hours. Oxygen Depletion [Asphyxiant] NIOSH REL (United States, 10/2013). TWA: 1900 mg/m ³ 10 hours.
STEL: 30000 ppm 15 minutes. TWA: 18000 mg/m ³ 8 hours. TWA: 10000 ppm 8 hours. Oxygen Depletion [Asphyxiant] NIOSH REL (United States, 10/2013). TWA: 1900 mg/m ³ 10 hours. TWA: 800 ppm 10 hours.
STEL: 30000 ppm 15 minutes. TWA: 18000 mg/m ³ 8 hours. TWA: 10000 ppm 8 hours. Oxygen Depletion [Asphyxiant] NIOSH REL (United States, 10/2013). TWA: 1900 mg/m ³ 10 hours. TWA: 800 ppm 10 hours. OSHA PEL 1989 (United States, 3/1989).
STEL: 30000 ppm 15 minutes. TWA: 18000 mg/m ³ 8 hours. TWA: 10000 ppm 8 hours. Oxygen Depletion [Asphyxiant] NIOSH REL (United States, 10/2013). TWA: 1900 mg/m ³ 10 hours. TWA: 800 ppm 10 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 1900 mg/m ³ 8 hours.
STEL: 30000 ppm 15 minutes. TWA: 18000 mg/m ³ 8 hours. TWA: 10000 ppm 8 hours. Oxygen Depletion [Asphyxiant] NIOSH REL (United States, 10/2013). TWA: 1900 mg/m ³ 10 hours. TWA: 800 ppm 10 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 1900 mg/m ³ 8 hours. TWA: 800 ppm 8 hours.
STEL: 30000 ppm 15 minutes. TWA: 18000 mg/m ³ 8 hours. TWA: 10000 ppm 8 hours. Oxygen Depletion [Asphyxiant] NIOSH REL (United States, 10/2013). TWA: 1900 mg/m ³ 10 hours. TWA: 800 ppm 10 hours. OSHA PEL 1989 (United States, 3/1989). TWA: 1900 mg/m ³ 8 hours.

methane N-Butane

Section 8. Exposure controls/personal protection

Appropriate engineering controls	: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation of other engineering controls to keep worker exposure to airborne contaminants below an 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 meas	ures de la constante de la const
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 saf working limits of the selected respirator.
Continuo O Disvoia	al and abayataal waaaattaa

Section 9. Physical and chemical properties

Appearance	
Physical state	: Gas.
Color	: Not available.
Melting/freezing point	 -138°C (-216.4°F) This is based on data for the following ingredient: Butane. Weighted average: -179.19°C (-290.5°F)
Critical temperature	: Lowest known value: -82.45°C (-116.4°F) (methane).
Odor	: Not available.
Odor threshold	: Not available.
рН	: Not available.
Flash point	: Not available.
Burning time	: Not applicable.
Burning rate	: Not applicable.
Evaporation rate	: Not available.
Date of issue/Date of revision	: 8/19/2015 Date of previous issue : No previous validation Version : 0.01 5/11

Section 9. Physical and chemical properties

Flammability (solid, gas)	:	Not available.
Lower and upper explosive (flammable) limits	:	Not available.
Vapor pressure	:	Not available.
Vapor density	:	Highest known value: 2.1 (Air = 1) (Butane). Weighted average: 1.15 (Air = 1)
Gas Density (lb/ft 3)	:	Weighted average: 0.18
Relative density	:	Not applicable.
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	: 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.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
N-Butane	LC50 Inhalation Vapor	Rat	658000 mg/m³	4 hours

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Section 11. Toxicological information

	//\	giour mormation
Reproductive toxicity Not available.		
Teratogenicity Not available.		
Specific target organ toxicit Not available.	t <u>y (</u>	<u>single exposure)</u>
Specific target organ toxicit Not available.	t <u>y (</u>	<u>repeated exposure)</u>
Aspiration hazard Not available.		
Information on the likely routes of exposure	:	Not available.
Potential acute health effects	2	
Eye contact	:	Contact with rapidly expanding gas may cause burns or frostbite.
Inhalation	1	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	:	No specific data.
Inhalation	1	No specific data.
Skin contact	:	No specific data.
Ingestion	:	No specific data.
Delayed and immediate effec	:ts	and also chronic effects from short and long term exposure
<u>Short term exposure</u>		
Potential immediate effects	:	Not available.
Potential delayed effects	:	Not available.
<u>Long term exposure</u>		
Potential immediate effects	:	Not available.
Potential delayed effects	:	Not available.
Potential chronic health effe	ect	<u>s</u>
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 11. Toxicological information

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Carbon Dioxide	0.83	-	low
methane	1.09		low
N-Butane	2.89		low

Mobility in soil

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

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	IATA
UN number	UN1954	UN1954	UN1954	UN1954	UN1954
UN proper shipping name	COMPRESSED GAS, FLAMMABLE, N.O.S. (methane, Butane)				
Transport hazard class(es)	2.1	2.1	2.1	2.1	2.1
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Date of issue/Date of r	evision : 8/19/201	5 Date of previo	l Dus issue : No pro	l evious validation Ver	 <u>'sion :</u> 0.01 8

Section 14. Transport information

Additional -	Product classified as -	-	-
information	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		
	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) CDR Exempt/Partial exemption: Not determined
Ŭ	United States inventory (TSCA 8b): All components are listed or exempted.
	Clean Air Act (CAA) 112 regulated flammable substances: methane; Butane
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
<u>SARA 302/304</u>	
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

Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Carbon Dioxide	2 - 99	No.	Yes.	No.	No.	No.
methane	13.06 - 98	Yes.	Yes.	No.	No.	No.
N-Butane	0.0001 - 20	Yes.	Yes.	No.	No.	No.

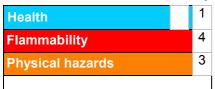
State regulations

State regulations	
Massachusetts	: The following components are listed: CARBON DIOXIDE; METHANE; BUTANE
New York	: None of the components are listed.
New Jersey	 The following components are listed: CARBON DIOXIDE; CARBONIC ACID GAS; METHANE; BUTANE
Pennsylvania	: The following components are listed: CARBON DIOXIDE; METHANE; BUTANE
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	: All components are listed or exempted.
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.
	CEPA Toxic substances : The following components are listed: Carbon dioxide; Methane
	Canadian ARET: None of the components are listed.
	Canadian NPRI : The following components are listed: Volatile organic compounds; Butane (all isomers)
	Alberta Designated Substances: None of the components are listed.
	Ontario Designated Substances: None of the components are listed. Quebec Designated Substances: None of the components are listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas. Class B-1: Flammable gas.

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.

10/11

Section 16. Other information

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)	On basis of test data On basis of test data	
<u>History</u>			
Date of printing	: 8/19/2015		
Date of issue/Date of revision	: 8/19/2015		
Date of previous issue	: No previous validation		
Version	: 0.01		
Key to abbreviations	BCF = Bioconcentration F GHS = Globally Harmoniz IATA = International Air T IBC = Intermediate Bulk (IMDG = International Mar LogPow = logarithm of th MARPOL 73/78 = International	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	
References	: Not available.	Not available.	

Indicates information that has changed from previously issued version.

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.