

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Section 4 – First Aid Measures**4.1 – Description of First Aid Measures**

First Aid Measures After Inhalation:	Move to fresh air. Get medical attention if symptoms persist.
First Aid Measures After Skin Contact:	Get medical attention if irritation develops and persists.
First Aid Measures After Eye Contact:	Rinse with water. Get medical attention if irritation develops and persists.
First Aid Measures After Ingestion:	In the unlikely event of swallowing contact a physician or poison control center. Rinse mouth.

4.2 – Most Important Symptoms/Effects, Acute and Delayed

Direct contact with eyes may cause temporary irritation.

4.3 – Indication of Any Immediate Medical Attention and Special Treatment Needed

Provide general supportive measures and treat symptomatically.

4.4 – General Information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Section 5 – Firefighting Measures**5.1 – Extinguishing Media**

Suitable Extinguishing Media:	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable Extinguishing Media:	Do not use water jet as an extinguisher, as this will spread the fire.

5.2 – Special Hazards Arising From the Substance or Mixture**Specific Hazards Arising from the Chemical:** Contents under pressure. During fire, gases hazardous to health may be formed.**5.3 – Advice for Firefighters**

Special Protective Equipment and Precautions for Firefighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire-Fighting Equipment/Instructions:	In case of fire: Stop leak if safe to do so. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do so without risk. Cool containers exposed to heat with water spray and remove container, if no risk is involved. Containers should be cooled with water to prevent vapor pressure build up. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out.
Specific Methods:	Move container from fire area if it can be done without risk.
General Fire Hazards:	No unusual fire or explosion hazards noted.

Section 6 – Accidental Release Measures**6.1 – Personal Precautions, Protective Equipment and Emergency Procedures**

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. See Section 8 of the SDS for Personal Protective Equipment. For personal protection, see section 8 of the SDS.

6.2 – Methods and Materials for Containment and Cleaning Up

Refer to attached safety data sheets and/or instructions for use. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Isolate area until gas has dispersed. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. For waste disposal, see section 13 of the SDS.

6.3 – Environmental Precautions

Avoid discharge into drains, water courses or onto the ground.

Section 7 – Handling and Storage**7.1 – Precautions for Safe Handling**

Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame Or any other incandescent material. Do not smoke while using or until sprayed surface is thoroughly dry. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Ground and bond containers when transferring material. Do not re-use empty containers. Do not get this material in contact with skin. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

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7.2 – Conditions for Safe Storage, Including Any Incompatibilities

Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C/122 °F. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. Store in a well-ventilated place. Refrigeration recommended. Store away from incompatible materials (see Section 10 of the SDS). Level 1 Aerosol (NFPA 30B)

Section 8 – Exposure Controls/Personal Protection

8.1 – Control Parameters

Occupational Exposure Limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)		
Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	PEL	240 mg/m3 50 ppm
Ethyl Alcohol (CAS 64-17-5)	PEL	1900 mg/m3 1000 ppm
Propane (CAS 74-98-6)	PEL	1800 mg/m3 1000 ppm

US. ACGIH Threshold Limit Values		
Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	20 ppm
Butane (CAS 106-97-8)	STEL	1000 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	1000 ppm

US. NIOSH: Pocket Guide to Chemical Hazards		
Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	24 mg/m3 5 ppm
Butane (CAS 106-97-8)	TWA	1900 mg/m3 800 ppm
Ethyl Alcohol (CAS 64-17-5)	TWA	1900 mg/m3 1000 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3 1000 ppm

Biological Limit Values

ACGIH Biological Exposure Indices				
Components	Value	Determinant	Specimen	Sampling Time
2-Butoxyethanol (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (BAA), with hydrolysis	Creatine in Urine	*

* - For sampling details, please see the source document.

8.2 – Exposure Controls

Exposure Guidelines

US - California OELs: Skin designation

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

2-Butoxyethanol (CAS 111-76-2) Skin designation applies.

US - Tennessee OELs: Skin designation

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

US NIOSH Pocket Guide to Chemical Hazards: Skin designation

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

2-Butoxyethanol (CAS 111-76-2) Can be absorbed through the skin.

Appropriate Engineering Controls:

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

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Individual Protection Measures, Such As Personal Protective Equipment:

Eye/Face Protection:	Wear safety glasses with side shields (or goggles).
Hand Protection:	Wear protective gloves.
Skin Protection	
Other:	Wear appropriate chemical resistant clothing.
Respiratory Protection:	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.
Thermal Hazards:	Wear appropriate thermal protective clothing, when necessary.
General Hygiene Considerations:	When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Section 9 – Physical and Chemical Properties**9.1 – Information on Basic Physical and Chemical Properties**

Appearance:	Clear.
Physical State:	Liquid.
Form:	Aerosol. Liquefied gas.
Color:	Colorless. Pale yellow.
Odor:	Butyl
Odor Threshold:	Not available.
pH:	9.5 - 10.5 estimated.
Melting Point/Freezing Point:	Not available.
Initial Boiling Point and Boiling Range:	212 °F (100 °C) estimated.
Flash Point:	-156.0 °F (-104.4 °C) Propellant estimated
Evaporation Rate:	Not available.
Flammability (solid, gas):	Not available.
Upper/Lower Flammability or Explosive Limits	
Flammability Limit – Lower (%):	Not available.
Flammability Limit – Upper (%):	Not available.
Explosive Limit - Lower (%)	Not available.
Explosive Limit - Upper (%):	Not available.
Vapor Pressure:	80 - 100 psig @70F estimated.
Vapor Density:	Not available.
Relative Density:	0.97 g/cm ³ estimated.
Solubility(ies)	
Solubility (water):	Not available.
Partition Coefficient (n-octanol/water):	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.

9.2 – Other Information

Aerosol Spray Enclosed Space	
Deflagration Density:	> 2.52 g/cm ³ Tested.
Aerosol Spray Ignition Distance:	< 15 cm Tested estimated.
Density:	0.97 g/cm ³ estimated.
Flammability Class:	Flammable IB estimated.
Heat of Combustion:	3.34 kJ/g estimated.
Heat of Combustion (NFPA 30B):	3.21 kJ/g estimated.
Percent Volatile:	99.39 % estimated.
Specific Gravity:	0.97 estimated.
VOC (Weight %)	9.78 % estimated.

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Section 10 – Stability and Reactivity

10.1 – Reactivity

Reactivity:	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical Stability:	Material is stable under normal conditions.
Possibility of Hazardous Reactions:	No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.
Conditions to Avoid:	Avoid temperatures exceeding the flash point. Contact with incompatible materials. Fire or intense heat may cause violent rupture of packages.
Incompatible Materials:	Strong oxidizing agents.
Hazardous Decomposition Products:	No hazardous decomposition products are known.

Section 11 – Toxicological Information

11.1 – Information on Likely Routes of Exposure

Ingestion:	Expected to be a low ingestion hazard.
Inhalation:	Prolonged inhalation may be harmful.
Skin Contact:	2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans. No adverse effects due to skin contact are expected.
Eye Contact:	Direct contact with eyes may cause temporary irritation.
Symptoms Related to the Physical, Chemical and Toxicological Characteristics:	Direct contact with eyes may cause temporary irritation.

11.2 – Information on Toxicological Effects

Acute Toxicity: Expected to be a low hazard for usual industrial or commercial handling by trained personnel.

Product	Species	Test Results	
Glass Mate (CAS Mixture)			
Acute Dermal LD50	Guinea pig	8024.9819 ml/kg, 24 Hours estimated 254.7059 ml/kg, 4 Days estimated	
	Rabbit	6518.1216 mg/kg, 24 Hours estimated 5238.5664 ml/kg, 24 Hours estimated	
	Rat	69782.4531 mg/kg, 24 Hours estimated	
	Inhalation LC100	Cat	2571.4285 % estimated
		Cat	2554.7151 mg/l, 4.5 Hours estimated 1306.521 mg/l, 6 Hours estimated
			Mouse
		Rabbit	13956.4902 ppm, 7 Hours estimated
	Rat	15065.334 ppm, 4 Hours estimated 8635.582 mg/l, 6 Hours estimated 1092.8505 mg/l, 4 Hours estimated 75.2338 mg/l/4h estimated	
	Oral LD100 LD50	Rabbit	24249.4023 mg/kg estimated
		Dog	24249.4023 mg/kg estimated
Guinea pig		41869.4727 mg/kg estimated	
Rat		16992.5254 mg/kg estimated	

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Components	Species	Test Results	
2-Butoxyethanol (CAS 111-76-2)			
Acute			
<i>Dermal</i> LD50	Guinea pig	230 ml/kg, 24 Hours 7.3 ml/kg, 4 Days	
	Rabbit	450 ml/kg, 24 Hours 435 mg/kg, 24 Hours 220 mg/kg 0.63 ml/kg	
	Rat	> 2000 mg/kg, 24 Hours	
	<i>Inhalation</i> LC50	Rabbit	400 ppm, 7 Hours
		Rat	450 ppm, 4 Hours 2.21 mg/l/4h
	<i>Oral</i> LD100 LD50	Rabbit	695 mg/kg
Dog		> 695 mg/kg	
Guinea pig		1200 mg/kg	
Rat		530 - 2800 mg/kg 470 mg/kg	
Butane (CAS 106-97-8)			
Acute			
<i>Inhalation</i> LC50	Mouse	1237 mg/l, 120 Minutes 52 %, 120 Minutes	
	Rat	1355 mg/l	
Ethyl Alcohol (CAS 64-17-5)			
Acute			
<i>Inhalation</i> LC50	Cat	85.41 mg/l, 4.5 Hours 43.68 mg/l, 6 Hours	
	Mouse	> 60000 ppm 79.43 mg/l, 134 Minutes	
	Rat	> 115.9 mg/l, 4 Hours 51.3 mg/l, 6 Hours	
<i>Oral</i> LD50	Monkey	6000 mg/kg	
	Mouse	10500 ml/kg	
	Rat	7800 ml/kg 7060 mg/kg	
	<i>Other</i> LD50	Mouse	6000 mg/kg
Rat		4070 mg/kg	
Propane (CAS 74-98-6)			
Acute			
<i>Inhalation</i> LC50	Mouse	1237 mg/l, 120 Minutes 52 %, 120 Minutes	
	Rat	1355 mg/l 658 mg/l/4h	

* Estimates for product may be based on additional component data not shown.

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Skin Corrosion/Irritation:	Prolonged skin contact may cause temporary irritation.
Serious Eye Damage/Eye Irritation:	Direct contact with eyes may cause temporary irritation.
Respiratory or Skin Sensitization	
Respiratory Sensitization:	Not a respiratory sensitizer.
Skin Sensitization:	This product is not expected to cause skin sensitization.
Germ Cell Mutagenicity:	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity:	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
2-Butoxyethanol (CAS 111-76-2)	3 Not classifiable as to carcinogenicity to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed	
Reproductive Toxicity:	This product is not expected to cause reproductive or developmental effects.
Specific Target Organ Toxicity – Single Exposure:	Not classified.
Specific Target Organ Toxicity – Repeated Exposure:	Not classified.
Aspiration Hazard:	Not an aspiration hazard. Not likely, due to the form of the product.
Chronic Effects:	Prolonged inhalation may be harmful. May be harmful if absorbed through skin. 2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged. These effects have not been observed in humans.

Section 12 – Ecological Information

12.1 – Ecotoxicity

Ecotoxicity: Harmful to aquatic life with long lasting effects.

Product		Species		Test Results
Glass Mate (CAS Mixture)				
Aquatic				
Crustacea	EC50	Daphnia		53501.5 mg/L, 48 Hours estimated
Fish	LC50	Fish		42462.0469 mg/l, 96 hours estimated
Components		Species		Test Results
2-Butoxyethanol (CAS 111-76-2)				
Aquatic				
Crustacea	EC50	Daphnia		1819 mg/L, 48 Hours
Fish	LC50	Inland silverside (Menidia beryllina)		1250 mg/l, 96 hours
Ethyl Alcohol (CAS 64-17-5)				
Aquatic				
Crustacea	EC50	Water flea (Daphnia magna)		7700 - 11200 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas)		> 100.1 mg/l, 96 hours

*Estimates for product may be based on additional component data not shown.

12.2 – Persistence and Degradability

No data is available on the degradability of this product.

12.3 – Bioaccumulative Potential

No data available.

Partition Coefficient n-Octanol / Water (Log Kow)

2-Butoxyethanol	0.83
Butane	2.89
Ethyl Alcohol	-0.31
Propane	2.36

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12.4 – Mobility in Soil

No data available.

Other Adverse Effects: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Section 13 – Disposal Considerations

13.1 – Waste Treatment Methods

Disposal Instructions: Consult authorities before disposal. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations

Local Disposal Regulations: Dispose in accordance with all applicable regulations.

Hazardous Waste Code: The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from Residues / Unused Products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated Packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Do not re-use empty containers.

Section 14 – Transport Information

DOT

UN Number: UN1950
UN Proper Shipping Name: Aerosols
Transport Hazard Class(es)
Class: 2.2
Subsidiary Risk: -
Label(s): None
Packing Group: Not applicable.
Special Precautions For User: Read safety instructions, SDS and emergency procedures before handling.
Packaging Exceptions : 306
Packaging Non-Bulk : None
Packaging Bulk: None

This product meets the exception requirements of section 173.306 as a limited quantity and may be shipped as a limited quantity. Until 12/31/2020, the "Consumer Commodity - ORM-D" marking may still be used in place of the new limited quantity diamond mark for packages of UN 1950 Aerosols. Limited quantities require the limited quantity diamond mark on cartons after 12/31/20 and may be used now in place of the "Consumer Commodity ORM-D" marking and both may be displayed concurrently.

IATA

UN Number: UN1950
UN Proper Shipping Name Aerosols, non-flammable
Transport Hazard Class(es)
Class: 2.2
Subsidiary Risk: -
Label(s): 2.2
Packing Group: Not applicable.
Environmental Hazards: No.
ERG Code: 2L
Special Precautions For User: Read safety instructions, SDS and emergency procedures before handling.
Other Information
Passenger and Cargo Aircraft: Allowed.
Cargo Aircraft Only: Allowed.
Packaging Exceptions: LTD QTY

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IMDG

UN Number:	UN1950
UN Proper Shipping Name:	AEROSOLS
Transport Hazard Class(es):	
Class:	2.2
Subsidiary Risk:	-
Label(s):	None
Packing Group:	Not applicable.
Environmental Hazards	
Marine Pollutant:	No.
EmS:	Not available.
Special Precautions For User:	Read safety instructions, SDS and emergency procedures before handling.
Packaging Exceptions:	LTD QTY
Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code:	Not applicable.

DOT**IATA; IMDG****Section 15 – Regulatory Information****15.1 – US Federal Regulations****US Federal Regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency Release Notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

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Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories	Immediate Hazard - No
	Delayed Hazard - No
	Fire Hazard - No
	Pressure Hazard - Yes
	Reactivity Hazard - No

SARA 302 Extremely Hazardous Substance

Not listed

SARA 311/312 Hazardous Chemical

No

SARA 313 (TRI Reporting)

Not regulated.

Other Federal Regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

Safe Drinking Water Act (SDWA)

Not regulated.

15.2 – US State Regulations

US. Massachusetts RTK - Substance List

2-Butoxyethanol (CAS 111-76-2)

Butane (CAS 106-97-8)

Ethyl Alcohol (CAS 64-17-5)

Propane (CAS 74-98-6)

US. New Jersey Worker and Community Right-to-Know Act

2-Butoxyethanol (CAS 111-76-2)

Butane (CAS 106-97-8)

Ethyl Alcohol (CAS 64-17-5)

Propane (CAS 74-98-6)

US. Pennsylvania Worker and Community Right-to-Know Law

2-Butoxyethanol (CAS 111-76-2)

Butane (CAS 106-97-8)

Ethyl Alcohol (CAS 64-17-5)

Propane (CAS 74-98-6)

US. Rhode Island RTK

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

15.3 – International Inventories

Country(s) or Region	Inventory Name	On Inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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Section 16 – Other Information

Revision Date: 08-19-2014

References
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents

Disclaimer
The information in the sheet was written based on the best knowledge and experience currently available. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision Information
GHS: Classification