

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product number D010308
Material name GLASS CLEANER
Company information
RICHELIEU HARDWARE LTD
Company phone MONTREAL QC H4S 1V4 CANADA,
Emergency telephone US
Emergency telephone outside US 1-952-852-4646
Version # 01
Supersedes date 07-12-2013
Expiry Date 12-Jul-2016
Product use Glass cleaner

2. Hazards Identification

Emergency overview CONTENTS UNDER PRESSURE.
Aerosol. Pressurized container may explode when exposed to heat or flame. May be fatal if inhaled. Prolonged exposure may cause chronic effects.

Potential health effects

Routes of exposure Inhalation. Ingestion. Skin contact. Eye contact.

Eyes Contact with eyes may cause irritation. Health injuries are not known or expected under normal use.

Skin May be harmful if absorbed through skin.

Inhalation Intentional misuse by concentrating and inhaling the product can be harmful or fatal. Prolonged inhalation may be harmful.

Ingestion Exposure by ingestion of an aerosol is unlikely. Components of the product may be absorbed into the body by ingestion.

Target organs Respiratory system.

2-Butoxy ethanol may be absorbed through the skin in toxic amounts if contact is repeated and prolonged and may cause blood damage. These effects have not been observed in humans.

Chronic effects May be harmful if absorbed through skin. Pregnant women or women of child-bearing age should not be exposed to this product.

Potential environmental effects May cause long-term adverse effects in the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Butane	106-97-8	1 - 5
Ethanol	64-17-5	1 - 5
Ethylene Glycol Monobutyl Ether	111-76-2	1 - 5
Propane	74-98-6	1 - 5
Other components below reportable levels		60 - 100

4. First Aid Measures

First aid procedures

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Continue rinsing. Get medical attention if irritation develops and persists.

Skin contact	Remove and isolate contaminated clothing and shoes. Wash off with warm water and soap. Get medical attention if irritation develops and persists. For minor skin contact, avoid spreading material on unaffected skin.
Inhalation	Move to fresh air. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention, if needed.
Ingestion	In the unlikely event of swallowing contact a physician or poison control center. Rinse mouth thoroughly. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Notes to physician	In case of shortness of breath, give oxygen. Symptoms may be delayed.
General advice	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Get medical attention if symptoms occur. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation.

5. Fire Fighting Measures

Flammable properties	Heat may cause the containers to explode. Ruptured cylinders may rocket.
Extinguishing media	
 Suitable extinguishing media	Water.
Protection of firefighters	
 Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
 Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus. Structural firefighters protective clothing will only provide limited protection. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Do not direct water at source of leak or safety devices; icing may occur. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak or safety devices as icing may occur. Use water spray to cool unopened containers. Containers should be cooled with water to prevent vapor pressure build up. Some of these materials, if spilled, may evaporate leaving a flammable residue.
Specific methods	Cool containers exposed to flames with water until well after the fire is out.
Explosion data	
 Sensitivity to static discharge	Not available.
 Sensitivity to mechanical impact	Not available.

6. Accidental Release Measures

Personal precautions	Consider initial downwind evacuation for at least 500 meters (1/3 mile). Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. For personal protection, see section 8 of the MSDS.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
Methods for containment	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if you can do so without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Move the cylinder to a safe and open area if the leak is irreparable. Prevent entry into waterways, sewers, basements or confined areas. Prevent entry into waterways, sewer, basements or confined areas.
Methods for cleaning up	Ventilate the area. Should not be released into the environment. Stop the flow of material, if this is without risk. Isolate area until gas has dispersed. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Clean up in accordance with all applicable regulations. For waste disposal, see section 13 of the MSDS.

Other information

Clean up in accordance with all applicable regulations.

7. Handling and Storage**Handling**

Do not handle or store near an open flame, heat or other sources of ignition. 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. All equipment used when handling the product must be grounded. Do not re-use empty containers. Use only with adequate ventilation. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get this material in contact with skin. Avoid prolonged exposure. Wash thoroughly after handling.

Storage

Contents under pressure. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not puncture, incinerate or crush. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Store away from incompatible materials (see Section 10 of the MSDS). Level 1 Aerosol (NFPA 30B)

8. Exposure Controls / Personal Protection**Occupational exposure limits****ACGIH Biological Exposure Indices Components**

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	BEI	200 mg/g

US. ACGIH Threshold Limit Values Components

Components	Type	Value
Ethyl Alcohol (CAS 64-17-5)	STEL	1000 ppm
2-Butoxyethanol (CAS 111-76-2)	TWA	20 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) Components

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1000 ppm
Ethyl Alcohol (CAS 64-17-5)	TWA	1880 mg/m ³
		1000 ppm
2-Butoxyethanol (CAS 111-76-2)	TWA	97 mg/m ³
		20 ppm
Propane (CAS 74-98-6)	TWA	1000 ppm

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Butane (CAS 106-97-8)	STEL	750 ppm
	TWA	600 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	1000 ppm
2-Butoxyethanol (CAS 111-76-2)	TWA	20 ppm

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Butane (CAS 106-97-8)	TWA	800 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	1000 ppm
2-Butoxyethanol (CAS 111-76-2)	TWA	20 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Butane (CAS 106-97-8)	TWA	1900 mg/m ³
		800 ppm
Ethyl Alcohol (CAS 64-17-5)	TWA	1880 mg/m ³
		1000 ppm

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	97 mg/m ³
Propane (CAS 74-98-6)	TWA	20 ppm 1800 mg/m ³ 1000 ppm

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

Components	Type	Value
Ethyl Alcohol (CAS 64-17-5)	PEL	1900 mg/m ³ 1000 ppm
2-Butoxyethanol (CAS 111-76-2)	PEL	240 mg/m ³ 50 ppm
Propane (CAS 74-98-6)	PEL	1800 mg/m ³ 1000 ppm

Engineering controls Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye / face protection Wear safety glasses with side shields (or goggles).

Skin protection Wear protective gloves.

Respiratory protection In case of insufficient ventilation wear suitable respiratory equipment. If permissible levels are exceeded use NIOSH mechanical filter / organic vapor cartridge or an air-supplied respirator.

9. Physical & Chemical Properties

Appearance	Clear.
Boiling point	212 °F (100 °C) estimated
Color	Colorless.
Flash point	-156.00 °F (-104.44 °C) Propellant estimated
Form	Aerosol.
Melting point/Freezing point	Not available.
Odor	Butyl
Odor threshold	Not available.
pH	9.5 - 10.5 estimated
Physical state	Gas.
Vapor pressure	70 - 90 psig @ 70F estimated
Solubility (water)	Not available.
Specific gravity	0.961 estimated estimated
Flammability limits in air, upper, % by volume	Not available.
Flammability limits in air, lower, % by volume	Not available.
Other data	
Heat of combustion	3.17 kJ/g estimated

10. Chemical Stability & Reactivity Information

Chemical stability	Risk of ignition.
Conditions to avoid	Aerosol containers are unstable at temperatures above 49°C. Avoid temperatures exceeding the flash point.
Hazardous decomposition products	Not available.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product	Species	Test Results
Gleme Glass Cleaner (CAS Mixture)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	13586.2803 mg/kg, estimated
	Rat	7571 mg/kg
<i>Inhalation</i>		
LC50	Mouse	40423.0625 mg/l, 2 Hours, estimated 24176.2793 mg/l, 7 Hours, estimated 1313.3534 mg/l, 4 Hours, estimated
	Rat	79173.25 mg/l, 15 Minutes, estimated 11122.5186 mg/l, 4 Hours, estimated 75 mg/l/4h
<i>Oral</i>		
LD50	Dog	185.2165 g/kg, estimated
	Guinea pig	33.9778 g/kg, estimated
	Mouse	41.445 g/kg, estimated
	Rabbit	11.051 g/kg, estimated
	Rat	203.2327 g/kg, estimated
<i>Other</i>		
LD50	Mouse	12069.3428 mg/kg, estimated
	Rabbit	9670.5117 mg/kg, estimated
	Rat	8031.8926 mg/kg, estimated
Components	Species	Test Results
Butane (CAS 106-97-8)		
<i>Acute</i>		
<i>Inhalation</i>		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours
Ethanol (CAS 64-17-5)		
<i>Acute</i>		
<i>Inhalation</i>		
LC50	Mouse	39 mg/l, 4 Hours
	Rat	20000 mg/l, 10 Hours
<i>Oral</i>		
LD50	Dog	5.5 g/kg
	Guinea pig	5.6 g/kg
	Mouse	3450 mg/kg
	Rat	6.2 g/kg
<i>Other</i>		
LD50	Mouse	933 mg/kg
	Rat	1440 mg/kg
Ethylene Glycol Monobutyl Ether (CAS 111-76-2)		
<i>Acute</i>		
<i>Dermal</i>		
LD50	Rabbit	400 mg/kg

Components	Species	Test Results
<i>Inhalation</i>		
LC50	Mouse	700 mg/l, 7 Hours
	Rat	450 mg/l, 4 Hours
<i>Oral</i>		
LD50	Guinea pig	1.2 g/kg
	Mouse	1.2 g/kg
	Rabbit	0.32 g/kg
	Rat	560 mg/kg
<i>Other</i>		
LD50	Mouse	1130 mg/kg
	Rabbit	280 mg/kg
	Rat	340 mg/kg
Propane (CAS 74-98-6)		
<i>Acute</i>		
<i>Inhalation</i>		
LC50	Rat	> 1442.847 mg/l, 15 Minutes 658 mg/l/4h

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

Acute effects	Acute LD50: 7571 mg/kg, Rat, Dermal
Chronic effects	Hazardous by WHMIS criteria. 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. Prolonged exposure may cause chronic effects.
Carcinogenicity	Hazardous by WHMIS criteria.
ACGIH Carcinogens	
Ethanol (CAS 64-17-5)	A3 Confirmed animal carcinogen with unknown relevance to humans.
Ethylene Glycol Monobutyl Ether (CAS 111-76-2)	A3 Confirmed animal carcinogen with unknown relevance to humans.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Ethylene Glycol Monobutyl Ether (CAS 111-76-2)	3 Not classifiable as to carcinogenicity to humans.
Reproductive effects	Can cause adverse reproductive effects - such as birth defects, miscarriages, or infertility.
Teratogenicity	Not expected to be hazardous by WHMIS criteria.

12. Ecological Information

Ecotoxicological data

Product	Species	Test Results
Gleme Glass Cleaner (CAS Mixture)		
Algae	IC50	Algae 11902 mg/L, 72 Hours
Crustacea	EC50	Daphnia 26428 mg/L, 48 Hours
Fish	LC50	Fish 36327 mg/L, 96 Hours
Components	Species	Test Results
Ethanol (CAS 64-17-5)		
Crustacea	EC50	Daphnia 11744.5 mg/L, 48 Hours
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) 7.7 - 11.2 mg/l, 48 hours
Fish	LC50	Fathead minnow (Pimephales promelas) > 100 mg/l, 96 hours

Components	Species	Test Results
Ethylene Glycol Monobutyl Ether (CAS 111-76-2)		
Aquatic		
Fish	LC50 Inland silverside (Menidia beryllina)	1250 mg/l, 96 hours
* Estimates for product may be based on additional component data not shown.		
Ecotoxicity	LC50: 36327 mg/L, Fish, 96.00 Hours EC50: 26428 mg/L, Daphnia, 48.00 Hours IC50: 11902 mg/L, Algae, 72.00 Hours	Components of this product have been identified as having potential environmental concerns.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.	
Persistence and degradability	Not available.	
Partition coefficient		
Butane		2.89
Ethanol		-0.31
Ethylene Glycol Monobutyl Ether		0.83
Propane		2.36

13. Disposal Considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
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.

14. Transport Information

TDG

UN number	UN1950
UN proper shipping name	AEROSOLS, flammable
Hazard class	2.1
Marine pollutant	.
Special provisions	80 SOR/2002-306
Labels required	2.1
Packaging exceptions	If <1L: Limited Quantity

IATA

UN number	UN1950
UN proper shipping name	Aerosols, flammable
Transport hazard class(es)	2.1
Labels required	2.1
ERG code	10L
Special precautions for user	Read safety instructions, MSDS and emergency procedures before handling.
Packaging Exceptions	LTD QTY

IMDG

UN number	UN1950
UN proper shipping name	AEROSOLS
Transport hazard class(es)	2.1
Labels required	None
Special precautions for user	Read safety instructions, MSDS and emergency procedures before handling.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
Packaging Exceptions	LTD QTY



15. Regulatory Information

Canadian regulations

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status

Controlled

WHMIS classification

A - Compressed Gas
D2A - Other Toxic Effects-VERY TOXIC
D2B - Other Toxic Effects-TOXIC

WHMIS labeling



Inventory status

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)	No
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 this product complies 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).

16. Other Information

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.

This data sheet contains changes from the previous version in section(s):

Product and Company Identification: Product Review
Composition / Information on Ingredients: Ingredients
Fire Fighting Measures: Protective equipment for firefighters
Accidental Release Measures: Personal precautions
Accidental Release Measures: Methods for cleaning up
Handling and Storage: Storage
Chemical Stability & Reactivity Information: Conditions to avoid
Disposal Considerations: Disposal instructions
Disposal Considerations: Waste from residues / unused products
Disposal Considerations: Contaminated packaging