



# SAFETY DATA SHEET

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Trade name or designation of the mixture	Glass Cleaner
Registration number	-
Synonyms	None.
Product Code	113820
Issue date	04-13-2016
Version number	02
Revision date	04-14-2016
Supersedes date	04-13-2016

**Distributor in New Zealand**

Pacer Car Clean Products NZ LTD  
 33 Ha Crescent Wiri  
 Auckland, New Zealand  
 Telephone: +64 9 25000 91  
 Fax: +64 9 25000 92  
 Web: :www.pacer.co.nz

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Glass Cleaner
Uses advised against	None known.

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

Company name	Malco Products, Inc.
Address	361 Fairview Ave Barberton, OH 44203 US

**24hr Emergency Assistance in New Zealand**  
 National Poison Control Center: 0800 Poison [764 766]

#### Division

Telephone	Phone	800-253-2526
	Fax	330-777-8317
e-mail	msdsinfo@malcopro.com	
Contact person	Not available.	

1.4. Emergency telephone number	Phone	1-800-424-9300
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## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards		
Aerosols	Category 1	H222 - Extremely flammable aerosol. H229 - Pressurized container: May burst if heated.
Health hazards		
Acute toxicity, oral	Category 4	H302 - Harmful if swallowed.
Acute toxicity, dermal	Category 4	H312 - Harmful in contact with skin.

**Hazard summary** CONTENTS UNDER PRESSURE.  
 Aerosol. Pressurized container may explode when exposed to heat or flame. Vapors may cause a flash fire or ignite explosively. Harmful in contact with skin. Harmful if swallowed. Occupational exposure to the substance or mixture may cause adverse health effects.

#### Hazard Summary (according to Dangerous Substances Directive)

Physical hazards	Extremely flammable.
Health hazards	May cause cancer. May cause heritable genetic damage. Also toxic in contact with skin and if swallowed.
Environmental hazards	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Specific hazards	None known.
Main symptoms	Direct contact with eyes may cause temporary irritation.

### 2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Ethylene Glycol Monobutylether, N-butane



Hazard pictograms

Signal word Danger

Hazard statements

H222 Extremely flammable aerosol.  
H229 Pressurized container: May burst if heated.  
H302 Harmful if swallowed.  
H312 Harmful in contact with skin.

Precautionary statements

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P211 Do not spray on an open flame or other ignition source.  
P251 Do not pierce or burn, even after use.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/protective clothing.

Response Not available.

Storage

P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

Disposal Not available.

Supplemental label information None.

2.3. Other hazards None known.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Ethylene Glycol Monobutylether	5 - < 10	111-76-2 203-905-0	-	603-014-00-0	#
Classification:	Acute Tox. 4;H302, Acute Tox. 4;H312, Skin Irrit. 2;H315, Eye Irrit. 2;H319, Acute Tox. 4;H332				
N-butane	1 - < 3	106-97-8 203-448-7	-	601-004-01-8	
Classification:	Flam. Gas 1;H220				

Other components below reportable levels 90 - 100

List of abbreviations and symbols that may be used above

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

#: This substance has been assigned Community workplace exposure limit(s).

Composition comments The full text for all H-statements is displayed in section 16.

## SECTION 4: First aid measures

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

### 4.1. Description of first aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical advice/attention if you feel unwell. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

- 4.2. Most important symptoms and effects, both 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. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

## SECTION 5: Firefighting measures

- General fire hazards Extremely flammable gas.
- 5.1. Extinguishing media  
 Suitable extinguishing media Not available.  
 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 During fire, gases hazardous to health may be formed.
- 5.3. Advice for firefighters  
 Special protective equipment for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.  
 Special fire fighting procedures In case of fire and/or explosion do not breathe fumes. DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. Move containers from fire area if you can do so without risk. Do not direct water at source of leak or safety devices as icing may occur. 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 Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

- 6.1. Personal precautions, protective equipment and emergency procedures  
 For non-emergency personnel Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.  
 For emergency responders Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.
- 6.2. Environmental precautions Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
- 6.3. Methods and material for containment and cleaning up Refer to attached safety data sheets and/or instructions for use. 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. Use water spray to reduce vapors or divert vapor cloud drift. Isolate area until gas has dispersed. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. 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.
- 6.4. Reference to other sections For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## 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. All equipment used when handling the product must be grounded. Do not re-use empty containers. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Use only in well-ventilated areas. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities

Level 1 Aerosol.

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. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s)

Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	Ceiling	3800 mg/m3
	MAK	2000 ppm 1900 mg/m3 1000 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	MAK	98 mg/m3
	STEL	20 ppm 200 mg/m3 40 ppm
N-butane (CAS 106-97-8)	Ceiling	3800 mg/m3 1600 ppm
	MAK	1900 mg/m3 800 ppm
Propane (CAS 74-98-6)	Ceiling	3600 mg/m3 2000 ppm
	MAK	1800 mg/m3 1000 ppm

Belgium. Exposure Limit Values

Components	Type	Value
N-butane (CAS 106-97-8)	TWA	1000 ppm
Propane (CAS 74-98-6)	TWA	1000 ppm

Belgium. Exposure Limit Values.

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TWA	1907 mg/m3
	STEL	1000 ppm 246 mg/m3
Ethylene Glycol Monobutylether (CAS 111-76-2)	TWA	50 ppm 98 mg/m3 20 ppm

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TWA	1000 mg/m3
	STEL	246 mg/m3
Ethylene Glycol Monobutylether (CAS 111-76-2)	TWA	50 ppm 98 mg/m3 20 ppm
	TWA	1800 mg/m3
N-butane (CAS 106-97-8)	TWA	1800 mg/m3
Propane (CAS 74-98-6)	TWA	1800 mg/m3

## Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	MAC	1900 mg/m3
		1000 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	MAC	98 mg/m3
	STEL	20 ppm 246 mg/m3
N-butane (CAS 106-97-8)	MAC	50 ppm 1450 mg/m3
	STEL	10 ppm 1810 mg/m3 750 ppm

## Czech Republic. OELs. Government Decree 361

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	Ceiling	3000 mg/m3
	TWA	1000 mg/m3
Ethylene Glycol Monobutylether (CAS 111-76-2)	Ceiling	200 mg/m3
	TWA	100 mg/m3

Denmark. Exposure Limit Values  
Components

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TLV	1900 mg/m3
		1000 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	TLV	98 mg/m3
		20 ppm
N-butane (CAS 106-97-8)	TLV	1200 mg/m3 500 ppm
Propane (CAS 74-98-6)	TLV	1800 mg/m3 1000 ppm

## Estonia. OELs. Occupational Exposure Limits of Hazardous Substances. (Annex of Regulation No. 293 of 18 September 2001)

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	1900 mg/m3
	TWA	1000 ppm 1000 mg/m3 500 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 98 mg/m3 20 ppm
N-butane (CAS 106-97-8)	TWA	1500 mg/m3 800 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3 1000 ppm

Finland. Workplace Exposure Limits  
Components

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	2500 mg/m3
	TWA	1300 ppm 1900 mg/m3 1000 ppm

## Finland. Workplace Exposure Limits

Components	Type	Value
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	250 mg/m3
	TWA	50 ppm 98 mg/m3 20 ppm
N-butane (CAS 106-97-8)	STEL	2400 mg/m3 1000 ppm
	TWA	1900 mg/m3 800 ppm
Propane (CAS 74-98-6)	STEL	2000 mg/m3 1100 ppm
	TWA	1500 mg/m3 800 ppm

## France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	VLE	9500 mg/m3 5000 ppm
	VME	1900 mg/m3 1000 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	VLE	246 mg/m3 50 ppm
	VME	49 mg/m3 10 ppm
N-butane (CAS 106-97-8)	VME	1900 mg/m3 800 ppm

## Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TWA	960 mg/m3 500 ppm
	TWA	49 mg/m3
N-butane (CAS 106-97-8)	TWA	10 ppm 2400 mg/m3 1000 ppm
	TWA	1800 mg/m3 1000 ppm

## Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	AGW	960 mg/m3 500 ppm
	AGW	49 mg/m3
N-butane (CAS 106-97-8)	AGW	10 ppm 2400 mg/m3 1000 ppm
	AGW	1800 mg/m3 1000 ppm

## Greece. OELs (Decree No. 90/1999, as amended)

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TWA	1900 mg/m3 1000 ppm

Greece. OELs (Decree No. 90/1999, as amended)		
Components	Type	Value
Ethylene Glycol Monobutylether (CAS 111-76-2)	TWA	120 mg/m3
		25 ppm
N-butane (CAS 106-97-8)	TWA	2350 mg/m3
		1000 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 ppm
Hungary. OELs. Joint Decree on Chemical Safety of Workplaces		
Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	7600 mg/m3
	TWA	1900 mg/m3
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	98 mg/m3
N-butane (CAS 106-97-8)	STEL	9400 mg/m3
	TWA	2350 mg/m3
Iceland. OELs. Regulation 154/1999 on occupational exposure limits		
Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TWA	1900 mg/m3
		1000 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm
		100 mg/m3
		20 ppm
N-butane (CAS 106-97-8)	TWA	1200 mg/m3
		500 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m3
		1000 ppm
Ireland. Occupational Exposure Limits		
Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	1000 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm
		98 mg/m3
		20 ppm
N-butane (CAS 106-97-8)	TWA	1000 ppm
Propane (CAS 74-98-6)	TWA	1000 ppm
Italy. Occupational Exposure Limits		
Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	1000 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm
		98 mg/m3
		20 ppm
N-butane (CAS 106-97-8)	STEL	1000 ppm
Latvia. OELs. Occupational exposure limit values of chemical substances in work environment		
Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TWA	1000 mg/m3

Latvia. OELs. Occupational exposure limit values of chemical substances in work environment

Components	Type	Value
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 98 mg/m3 20 ppm
N-butane (CAS 106-97-8)	TWA	300 mg/m3

Lithuania. OELs. Limit Values for Chemical Substances, General Requirements

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	1900 mg/m3
	TWA	1000 ppm 1000 mg/m3 500 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	100 mg/m3
	TWA	20 ppm 50 mg/m3 10 ppm

Luxembourg. Binding Occupational exposure limit values (Annex I), Memorial A

Components	Type	Value
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 98 mg/m3 20 ppm

Malta. OELs. Occupational Exposure Limit Values (L.N. 227. of Occupational Health and Safety Authority Act (CAP. 424), Schedules I and V)

Components	Type	Value
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 98 mg/m3 20 ppm

Netherlands. OELs (binding)

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	1900 mg/m3
	TWA	260 mg/m3
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	100 mg/m3

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TLV	950 mg/m3
		500 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	TLV	50 mg/m3
		10 ppm
N-butane (CAS 106-97-8)	TLV	600 mg/m3 250 ppm
Propane (CAS 74-98-6)	TLV	900 mg/m3
		500 ppm



Poland. MACs. Minister of Labour and Social Policy Regarding Maximum Allowable Concentrations and Intensities in Working Environment

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TWA	1900 mg/m3
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	200 mg/m3
N-butane (CAS 106-97-8)	TWA	98 mg/m3
	STEL	3000 mg/m3
Propane (CAS 74-98-6)	TWA	1900 mg/m3
	TWA	1800 mg/m3

Portugal. OELs. Decree-Law n. 290/2001 (Journal of the Republic - 1 Series A, n.266)

Components	Type	Value
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 98 mg/m3 20 ppm

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TWA	1000 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	TWA	20 ppm
Propane (CAS 74-98-6)	TWA	2500 ppm

Romania. OELs. Protection of workers from exposure to chemical agents at the workplace

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	9500 mg/m3
	TWA	5000 ppm 1900 mg/m3 1000 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	250 mg/m3
	TWA	50 ppm 150 mg/m3 30 ppm
Propane (CAS 74-98-6)	STEL	1800 mg/m3 1000 ppm
	TWA	1400 mg/m3 778 ppm

Slovakia. OELs for carcinogens and mutagens. Regulation No. 46/2002 on carcinogenic and mutagenic substances

Components	Type	Value
N-butane (CAS 106-97-8)	TWA	2400 mg/m3 1000 ppm

Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	1920 mg/m3
	TWA	1000 ppm 960 mg/m3 500 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 98 mg/m3 20 ppm

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working  
(Official Gazette of the Republic of Slovenia)

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TWA	1900 mg/m3
Ethylene Glycol Monobutylether (CAS 111-76-2)	TWA	1000 ppm 98 mg/m3
N-butane (CAS 106-97-8)	TWA	20 ppm 2400 mg/m3
Propane (CAS 74-98-6)	TWA	1000 ppm 1800 mg/m3 1000 ppm

Spain. Occupational Exposure Limits

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	1910 mg/m3
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	1000 ppm 245 mg/m3
	TWA	50 ppm 98 mg/m3 20 ppm

Sweden. Occupational Exposure Limit Values

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	1900 mg/m3
	TWA	1000 ppm 1000 mg/m3 500 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	100 mg/m3
	TWA	20 ppm 50 mg/m3 10 ppm

Switzerland. SUVA Grenzwerte am Arbeitsplatz

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	STEL	1920 mg/m3
	TWA	1000 ppm 960 mg/m3 500 ppm
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	98 mg/m3
	TWA	20 ppm 49 mg/m3 10 ppm
N-butane (CAS 106-97-8)	STEL	7200 mg/m3 3200 ppm
	TWA	1900 mg/m3 800 ppm
Propane (CAS 74-98-6)	STEL	7200 mg/m3 4000 ppm
	TWA	1800 mg/m3 1000 ppm

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Ethanol 190 Proof/sda40-2 (CAS 64-17-5)	TWA	1920 mg/m3
		1000 ppm

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 123 mg/m3 25 ppm
N-butane (CAS 106-97-8)	STEL	1810 mg/m3 750 ppm
	TWA	1450 mg/m3 600 ppm

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Components	Type	Value
Ethylene Glycol Monobutylether (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 98 mg/m3 20 ppm

Biological limit values

Czech Republic. Limit Values for Indicators of Biological Exposure Tests in Urine and Blood, Annex 2, Tables 1 and 2, Government Decree 432/2003 Sb.

Components	Value	Determinant	Specimen	Sampling Time
Ethylene Glycol Monobutylether (CAS 111-76-2)	200 mg/g	Butoxyacetic acid (with hydrolysis)	Creatinine in urine	*
	0,17 mmol/mmol	Butoxyacetic acid (with hydrolysis)	Creatinine in urine	*

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

Germany. TRGS 903, BAT List (Biological Limit Values)

Components	Value	Determinant	Specimen	Sampling Time
Ethylene Glycol Monobutylether (CAS 111-76-2)	100 mg/l	Butoxyessigsäure	Urine	*

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

Spain. Biological Limit Values (VLBs), Occupational Exposure Limits for Chemical Agents, Table 4

Components	Value	Determinant	Specimen	Sampling Time
Ethylene Glycol Monobutylether (CAS 111-76-2)	200 mg/g	Ácido butoxiacético, con hidrólisis	Creatinine in urine	*

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

Switzerland. BAT-Werte (Biological Limit Values in the Workplace as per SUVA)

Components	Value	Determinant	Specimen	Sampling Time
Ethylene Glycol Monobutylether (CAS 111-76-2)	200 mg/l	Gesamt-Butoxyessigsäure	Urine	*
	100 mg/l	Butoxyessigsäure	Urine	*

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

UK. EH40 Biological Monitoring Guidance Values (BMGVs)

Components	Value	Determinant	Specimen	Sampling Time
Ethylene Glycol Monobutylether (CAS 111-76-2)	240 mmol/mol	Butoxyacetic acid	Creatinine in urine	*

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

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no-effect level (DNEL) Not available.

Predicted no effect concentrations (PNECs) Not available.

#### Exposure guidelines

EU Exposure Limit Values: Skin designation

Ethylene Glycol Monobutylether (CAS 111-76-2) Can be absorbed through the skin.

#### 8.2. Exposure controls

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.

Individual protection measures, such as personal protective equipment

General information Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

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

Skin protection

- Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

- Other Wear appropriate chemical resistant clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures When using do not smoke. Keep away from food and drink. 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.

Environmental exposure controls Environmental manager must be informed of all major releases.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Appearance Clear.

Physical state Gas.

Form Aerosol. Liquefied gas.

Color Light yellow.

Odor Characteristic.

Odor threshold Not available.

pH 9,1 - 10,1 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 estimated

Evaporation rate Not available.

Flammability (solid, gas) Flammable gas.

Vapor pressure 80 - 100 psig@70F estimated

Vapor density Not available.

Relative density Not available.

Solubility(ies)

Solubility (water) Not available.

Solubility (other) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Explosive properties Not explosive.

Oxidizing properties Not oxidizing.

### 9.2. Other information

Aerosol spray enclosed space

Deflagration density > 2,52 g/cm3 Tested

Aerosol spray ignition distance < 15 cm Tested estimated  
 Specific gravity 0,98 - 1

### SECTION 10: Stability and reactivity

10.1. Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.  
 10.2. Chemical stability Material is stable under normal conditions.  
 10.3. Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.  
 10.4. Conditions to avoid Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with incompatible materials.  
 10.5. Incompatible materials Strong oxidizing agents.  
 10.6. Hazardous decomposition products No hazardous decomposition products are known.

### SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

#### Information on likely routes of exposure

Inhalation Prolonged inhalation may be harmful.  
 Skin contact Harmful in contact with 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.

Eye contact Direct contact with eyes may cause temporary irritation.  
 Ingestion Harmful if swallowed.

Symptoms Exposure may cause temporary irritation, redness, or discomfort.

#### 11.1. Information on toxicological effects

Acute toxicity Harmful in contact with skin. Harmful if swallowed.

Components	Species	Test Results
Ethylene Glycol Monobutylether (CAS 111-76-2)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	400 mg/kg
Inhalation		
LC50	Mouse	700 ppm, 7 Hours
	Rat	450 ppm, 4 Hours
Oral		
LD50	Guinea pig	1,2 g/kg
	Mouse	1,2 g/kg
	Rabbit	0,32 g/kg
	Rat	560 mg/kg
N-butane (CAS 106-97-8)		
<u>Acute</u>		
Inhalation		
LC50	Mouse	680 mg/l, 2 Hours
	Rat	658 mg/l, 4 Hours

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

Skin corrosion/irritation Due to partial or complete lack of data the classification is not possible.  
 Serious eye damage/eye irritation Due to partial or complete lack of data the classification is not possible.  
 Respiratory sensitization Due to partial or complete lack of data the classification is not possible.  
 Skin sensitization Due to partial or complete lack of data the classification is not possible.  
 Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

#### Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

Ethylene Glycol Monobutylether (CAS 111-76-2) 3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - single exposure	Due to partial or complete lack of data the classification is not possible.
Specific target organ toxicity - repeated exposure	Due to partial or complete lack of data the classification is not possible.
Aspiration hazard	Due to partial or complete lack of data the classification is not possible.
Mixture versus substance information	No information available.
Other information	Not available.

**SECTION 12: Ecological information**

12.1. Toxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Ethylene Glycol Monobutylether (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.

12.2. Persistence and degradability No data is available on the degradability of this product.

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water (log Kow)

Ethylene Glycol Monobutylether	0,83
N-butane	2,89

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil No data available.

12.5. Results of PBT and vPvB assessment Not available.

12.6. 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

Residual waste	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	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers.
EU waste code	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal methods/information	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Dispose of contents/container in accordance with local/regional/national/international regulations.
Special precautions	Dispose in accordance with all applicable regulations.

**SECTION 14: Transport information**

ADR

14.1. UN number	UN1950
14.2. UN proper shipping name	AEROSOLS, FLAMMABLE
14.3. Transport hazard class(es)	
Class Subsidiary risk Hazard No. (ADR)	2.1 - 2YE
Tunnel restriction code	Not available.
14.4. Packing group	Not applicable.

14.5. Environmental hazards No.  
14.6. Special precautions Read safety instructions, SDS and emergency procedures before handling.  
for user

RID

14.1. UN number UN1950  
14.2. UN proper shipping AEROSOLS, FLAMMABLE  
name  
14.3. Transport hazard class(es)  
Class 2.1  
Subsidiary risk -  
14.4. Packing group Not applicable.  
14.5. Environmental hazards No.  
14.6. Special precautions Read safety instructions, SDS and emergency procedures before handling.  
for user

ADN

14.1. UN number UN1950  
14.2. UN proper shipping AEROSOLS, FLAMMABLE  
name  
14.3. Transport hazard class(es)  
Class 2.1  
Subsidiary risk -  
14.4. Packing group Not applicable.  
14.5. Environmental hazards No.  
14.6. Special precautions Read safety instructions, SDS and emergency procedures before handling.  
for user

IATA

14.1. UN number UN1950  
14.2. UN proper shipping AEROSOLS  
name  
14.3. Transport hazard class(es)  
Class 2.2  
Subsidiary risk -  
14.4. Packing group Not applicable.  
14.5. Environmental hazards No.  
14.6. Special precautions Read safety instructions, SDS and emergency procedures before handling.  
for user

Other information

Passenger and cargo Forbidden.  
aircraft  
Cargo aircraft only Forbidden.

IMDG

14.1. UN number UN1950  
14.2. UN proper shipping AEROSOLS  
name  
14.3. Transport hazard class(es)  
Class 2.2  
Subsidiary risk -  
14.4. Packing group Not applicable.  
14.5. Environmental hazards  
Marine pollutant No.  
EmS Not available.  
14.6. Special precautions Read safety instructions, SDS and emergency procedures before handling.  
for user

14.7. Transport in bulk Not established.  
according to Annex II of  
MARPOL 73/78 and the IBC  
Code

ADN; ADR; RID



IATA; IMDG



New Zealand ERMA Register of Hazardous Substances  
HSNO: HSR002515  
Aerosols (Flammable) Group Standard 2006

General information

Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: Ensure that containers are firmly secured. Ensure cylinder valve is closed and not leaking. Ensure valve outlet cap nut or plug (where provided) is correctly fitted. Ensure valve protection device (where provided) is correctly fitted. Ensure adequate ventilation. Ensure compliance with applicable regulations.

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended

Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

#### Authorizations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

#### Restrictions on use

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended

N-butane (CAS 106-97-8)

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended

N-butane (CAS 106-97-8)

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

N-butane (CAS 106-97-8)

#### Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances

N-butane (CAS 106-97-8)



Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended

Ethylene Glycol Monobutylether (CAS 111-76-2)

N-butane (CAS 106-97-8)

Directive 94/33/EC on the protection of young people at work, as amended

N-butane (CAS 106-97-8)

Other regulations The product is classified and labelled in accordance with EC directives or respective national laws. Pregnant women should not work with the product, if there is the least risk of exposure. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations Follow national regulation for work with chemical agents. Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended.

15.2. Chemical safety assessment No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

List of abbreviations Not available.

References Not available.

Information on evaluation method leading to the classification of mixture The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any H-statements not written out in full under Sections 2 to 15

H220 Extremely flammable gas.  
H302 Harmful if swallowed.  
H312 Harmful in contact with skin.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.

Revision information SECTION 2: Hazards identification: Hazard statements  
SECTION 2: Hazards identification: Response  
SECTION 2: Hazards identification: Storage  
Physical & Chemical Properties: Multiple Properties  
GHS: Classification

Training information Follow training instructions when handling this material.

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