

Disposal Dispose of waste and residues in accordance with local authority requirements.

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
2-Butoxyethanol	2,5 - 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				
Butane	1 - 2,5	106-97-8 203-448-7	-	-	
Classification:	Flam. Gas 1;H220				
Propane	1 - 2,5	74-98-6 200-827-9	-	601-003-00-5	
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.

4.1. Description of first aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact No adverse effects due to skin contact are expected.
Eye contact No specific first aid measures noted.
Ingestion Not likely, due to the form of the product.

4.2. Most important symptoms and effects, both acute and delayed Exposure may cause temporary irritation, redness, or discomfort.

4.3. Indication of any immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards Contents under pressure. Pressurized container may explode when exposed to heat or flame.

5.1. Extinguishing media

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).
Unsuitable extinguishing media None known.

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: 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. 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 Cool containers exposed to flames with water until well after the fire is out.

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. 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). Wear appropriate protective equipment and clothing during clean-up. Emergency personnel need self-contained breathing equipment. 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 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. Move the cylinder to a safe and open area if the leak is irreparable. 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.

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 Keep away from heat/sparks/open flames/hot surfaces. - No smoking. 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. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Suck back of water into the container must be prevented. Do not allow backfeed into the container. Purge air from system before introducing gas. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Do not re-use empty containers. Do not get in eyes, on skin, or on clothing. Avoid prolonged exposure. Use only in well-ventilated areas. Wear appropriate personal protective equipment. 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. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Stored containers should be periodically checked for general condition and leakage. 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
2-Butoxyethanol (CAS 111-76-2)	MAK	98 mg/m ³
		20 ppm
	STEL	200 mg/m ³
Butane (CAS 106-97-8)	Ceiling	40 ppm
		3800 mg/m ³
	MAK	1600 ppm
Ethyl Alcohol (CAS 64-17-5)	Ceiling	1900 mg/m ³
		800 ppm
	MAK	3800 mg/m ³
Propane (CAS 74-98-6)	Ceiling	2000 ppm
		1000 ppm
	MAK	3600 mg/m ³
	2000 ppm	
	MAK	1800 mg/m ³
		1000 ppm

Belgium. Exposure Limit Values Components

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

Belgium. Exposure Limit Values. Components

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 98 mg/m3
Ethyl Alcohol (CAS 64-17-5)	TWA	20 ppm 1907 mg/m3 1000 ppm

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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 98 mg/m3 20 ppm
Butane (CAS 106-97-8)	TWA	1800 mg/m3
Ethyl Alcohol (CAS 64-17-5)	TWA	1000 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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	MAC	98 mg/m3
	STEL	20 ppm 246 mg/m3 50 ppm
Butane (CAS 106-97-8)	MAC	1450 mg/m3
	STEL	10 ppm 1810 mg/m3 750 ppm
Ethyl Alcohol (CAS 64-17-5)	MAC	1900 mg/m3 1000 ppm

Czech Republic. OELs. Government Decree 361 Components

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	Ceiling	200 mg/m3
	TWA	100 mg/m3
Ethyl Alcohol (CAS 64-17-5)	Ceiling	3000 mg/m3
	TWA	1000 mg/m3

Denmark. Exposure Limit Values Components

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TLV	98 mg/m3
		20 ppm
Butane (CAS 106-97-8)	TLV	1200 mg/m3
		500 ppm
Ethyl Alcohol (CAS 64-17-5)	TLV	1900 mg/m3
		1000 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
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 98 mg/m3

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

Components	Type	Value
Butane (CAS 106-97-8)	TWA	20 ppm
		1500 mg/m ³
Ethyl Alcohol (CAS 64-17-5)	STEL	800 ppm
		1900 mg/m ³
	TWA	1000 ppm
		1000 mg/m ³
Propane (CAS 74-98-6)	TWA	500 ppm
		1800 mg/m ³
		1000 ppm

Finland. Workplace Exposure Limits

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	250 mg/m ³
	TWA	50 ppm
		98 mg/m ³
Butane (CAS 106-97-8)	STEL	20 ppm
		2400 mg/m ³
	TWA	1000 ppm
		1900 mg/m ³
Ethyl Alcohol (CAS 64-17-5)	STEL	800 ppm
		2500 mg/m ³
	TWA	1300 ppm
		1900 mg/m ³
Propane (CAS 74-98-6)	STEL	1000 ppm
		2000 mg/m ³
	TWA	1100 ppm
		1500 mg/m ³
	800 ppm	

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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	VLE	246 mg/m ³
	VME	50 ppm
		49 mg/m ³
Butane (CAS 106-97-8)	VME	10 ppm
		1900 mg/m ³
Ethyl Alcohol (CAS 64-17-5)	VLE	800 ppm
		9500 mg/m ³
	VME	5000 ppm
		1900 mg/m ³
	1000 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
2-Butoxyethanol (CAS 111-76-2)	TWA	49 mg/m ³
		10 ppm
Butane (CAS 106-97-8)	TWA	2400 mg/m ³
		1000 ppm
Ethyl Alcohol (CAS 64-17-5)	TWA	960 mg/m ³
		500 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m ³
		1000 ppm

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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	AGW	49 mg/m ³
		10 ppm
Butane (CAS 106-97-8)	AGW	2400 mg/m ³

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

Components	Type	Value
Ethyl Alcohol (CAS 64-17-5)	AGW	1000 ppm 960 mg/m ³
Propane (CAS 74-98-6)	AGW	500 ppm 1800 mg/m ³ 1000 ppm

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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	120 mg/m ³
Butane (CAS 106-97-8)	TWA	25 ppm 2350 mg/m ³
Ethyl Alcohol (CAS 64-17-5)	TWA	1000 ppm 1900 mg/m ³
Propane (CAS 74-98-6)	TWA	1000 ppm 1800 mg/m ³ 1000 ppm

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m ³
Butane (CAS 106-97-8)	TWA	98 mg/m ³
	STEL	9400 mg/m ³
Ethyl Alcohol (CAS 64-17-5)	TWA	2350 mg/m ³
	STEL	7600 mg/m ³
	TWA	1900 mg/m ³

Iceland. OELs. Regulation 154/1999 on occupational exposure limits

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m ³
	TWA	50 ppm 100 mg/m ³
		20 ppm
Butane (CAS 106-97-8)	TWA	1200 mg/m ³ 500 ppm
Ethyl Alcohol (CAS 64-17-5)	TWA	1900 mg/m ³ 1000 ppm
Propane (CAS 74-98-6)	TWA	1800 mg/m ³ 1000 ppm

Ireland. Occupational Exposure Limits

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m ³
	TWA	50 ppm 98 mg/m ³
		20 ppm
Butane (CAS 106-97-8)	TWA	1000 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	1000 ppm
Propane (CAS 74-98-6)	TWA	1000 ppm

Italy. Occupational Exposure Limits

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m ³
	TWA	50 ppm 98 mg/m ³
		20 ppm
Butane (CAS 106-97-8)	STEL	1000 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	1000 ppm

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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 98 mg/m3 20 ppm
Butane (CAS 106-97-8)	TWA	300 mg/m3
Ethyl Alcohol (CAS 64-17-5)	TWA	1000 mg/m3

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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	100 mg/m3
	TWA	20 ppm 50 mg/m3 10 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	1900 mg/m3 1000 ppm
	TWA	1000 mg/m3 500 ppm

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

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

Netherlands. OELs (binding)

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m3
	TWA	100 mg/m3
Ethyl Alcohol (CAS 64-17-5)	STEL	1900 mg/m3
	TWA	260 mg/m3

Norway. Administrative Norms for Contaminants in the Workplace

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TLV	50 mg/m3
		10 ppm
Butane (CAS 106-97-8)	TLV	600 mg/m3 250 ppm
		950 mg/m3
Ethyl Alcohol (CAS 64-17-5)	TLV	500 ppm
		900 mg/m3 500 ppm

Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	200 mg/m3
	TWA	98 mg/m3
Butane (CAS 106-97-8)	STEL	3000 mg/m3
	TWA	1900 mg/m3

Poland. MACs. Regulation regarding maximum permissible concentrations and intensities of harmful factors in the work environment, Annex 1

Components	Type	Value
Ethyl Alcohol (CAS 64-17-5)	TWA	1900 mg/m ³
Propane (CAS 74-98-6)	TWA	1800 mg/m ³

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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m ³
		50 ppm
	TWA	98 mg/m ³ 20 ppm

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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	TWA	20 ppm
Ethyl Alcohol (CAS 64-17-5)	TWA	1000 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
2-Butoxyethanol (CAS 111-76-2)	STEL	250 mg/m ³
		50 ppm
	TWA	150 mg/m ³ 30 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	9500 mg/m ³ 5000 ppm
	TWA	1900 mg/m ³ 1000 ppm
Propane (CAS 74-98-6)	STEL	1800 mg/m ³ 1000 ppm
		1400 mg/m ³
	TWA	778 ppm

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

Components	Type	Value
Butane (CAS 106-97-8)	TWA	2400 mg/m ³ 1000 ppm

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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m ³
		50 ppm
	TWA	98 mg/m ³ 20 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	1920 mg/m ³ 1000 ppm
	TWA	960 mg/m ³ 500 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
2-Butoxyethanol (CAS 111-76-2)	TWA	98 mg/m ³
		20 ppm
Butane (CAS 106-97-8)	TWA	2400 mg/m ³ 1000 ppm
		1900 mg/m ³
Ethyl Alcohol (CAS 64-17-5)	TWA	1000 ppm
		1800 mg/m ³
Propane (CAS 74-98-6)	TWA	1000 ppm

Spain. Occupational Exposure Limits Components

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	245 mg/m3
	TWA	50 ppm 98 mg/m3
Ethyl Alcohol (CAS 64-17-5)	STEL	20 ppm 1910 mg/m3 1000 ppm

Sweden. Occupational Exposure Limit Values Components

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	100 mg/m3
	TWA	20 ppm 50 mg/m3 10 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	1900 mg/m3 1000 ppm
	TWA	1000 mg/m3 500 ppm

Switzerland. SUVA Grenzwerte am Arbeitsplatz Components

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	98 mg/m3
	TWA	20 ppm 49 mg/m3 10 ppm
Butane (CAS 106-97-8)	STEL	7200 mg/m3 3200 ppm
	TWA	1900 mg/m3 800 ppm
Ethyl Alcohol (CAS 64-17-5)	STEL	1920 mg/m3 1000 ppm
	TWA	960 mg/m3 500 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

Components	Type	Value
2-Butoxyethanol (CAS 111-76-2)	STEL	246 mg/m3
	TWA	50 ppm 123 mg/m3 25 ppm
Butane (CAS 106-97-8)	STEL	1810 mg/m3 750 ppm
	TWA	1450 mg/m3 600 ppm
Ethyl Alcohol (CAS 64-17-5)	TWA	1920 mg/m3 1000 ppm

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

Components	Type	Value
2-Butoxyethanol (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
2-Butoxyethanol (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
2-Butoxyethanol (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
2-Butoxyethanol (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
2-Butoxyethanol (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
2-Butoxyethanol (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

2-Butoxyethanol (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 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 suitable protective clothing.

Respiratory protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures	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.
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

Physical state	Gas.
Form	Aerosol. Liquefied gas.
Color	Not available.
Odor	Not available.
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
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.
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.
Partition coefficient (n-octanol/water)	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/cm ³ Tested
Aerosol spray ignition distance	< 15 cm Tested estimated
Specific gravity	0,977 - 0,997
VOC (Weight %)	9,5 % estimated

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	Heat. 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 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 May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

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

11.1. Information on toxicological effects

Components	Species	Test Results
2-Butoxyethanol (CAS 111-76-2)		
Acute		
Dermal		
LD50	Guinea pig	7,3 ml/kg, 4 Days 0,23 ml/kg, 24 Hours
	Rabbit	435 mg/kg, 24 Hours 0,68 ml/kg, 24 Hours 0,63 ml/kg
	Rat	> 2000 mg/kg, 24 Hours
Inhalation		
LC50	Rabbit	400 ppm, 7 Hours
	Rat	450 ppm, 4 Hours
Oral		
LD100	Rabbit	695 mg/kg
LD50	Dog	> 695 mg/kg
	Guinea pig	1414 mg/kg
	Mouse	1519 mg/kg
	Rat	1746 mg/kg
Butane (CAS 106-97-8)		
Acute		
Inhalation		
LC50	Mouse	1237 mg/l, 120 Minutes 52 %, 120 Minutes
	Rat	1355 mg/l
Propane (CAS 74-98-6)		
Acute		
Inhalation		
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.

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

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 Due to partial or complete lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity

2-Butoxyethanol (CAS 111-76-2)

3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
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	Not likely, due to the form of the product.
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
2-Butoxyethanol (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)

2-Butoxyethanol	0,83
Butane	2,89
Propane	2,36

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, non-flammable
14.3. Transport hazard class(es)	
Class	2.2
Subsidiary risk	-
Label(s)	None

Hazard No. (ADR) Not available.
Tunnel restriction code Not available.
14.4. Packing group Not applicable.
14.5. Environmental hazards No.
14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

RID

14.1. UN number UN1950
14.2. UN proper shipping name Aerosols, non-flammable
14.3. Transport hazard class(es)
Class 2.2
Subsidiary risk -
Label(s) None
14.4. Packing group Not applicable.
14.5. Environmental hazards No.
14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

ADN

14.1. UN number UN1950
14.2. UN proper shipping name Aerosols, non-flammable
14.3. Transport hazard class(es)
Class 2.2
Subsidiary risk -
Label(s) None
14.4. Packing group Not applicable.
14.5. Environmental hazards No.
14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IATA

14.1. UN number UN1950
14.2. UN proper shipping name Aerosols, non-flammable
14.3. Transport hazard class(es)
Class 2.2
Subsidiary risk -
Label(s) 2.2
14.4. Packing group Not applicable.
14.5. Environmental hazards No.
ERG Code 2L
14.6. Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Other information

Passenger and cargo aircraft Allowed with restrictions.
Cargo aircraft only Allowed with restrictions.

IMDG

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

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code Not applicable.

ADN; ADR; IATA; IMDG; RID



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 (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 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

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

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

Butane (CAS 106-97-8)

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

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

Butane (CAS 106-97-8)

Other EU regulations

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

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

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

2-Butoxyethanol (CAS 111-76-2)

Butane (CAS 106-97-8)

Propane (CAS 74-98-6)

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

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.

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 Product and Company Identification: Alternate Trade Names
Composition / Information on Ingredients: Component Summary

Training information Follow training instructions when handling this material.

Disclaimer 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.