Safety Data Sheet

According to Annex II to REACH - Regulation (EU) 2020/878 and to Annex II to UK REACH

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name **BRAKE FLUID DOT3**

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

Intended use **BRAKE FLUID DOT3 (for B2B)**

Identified Uses	Industrial	Professional	Consumer
Functional Fluids	✔	✔	

1.3. Details of the supplier of the safety data sheet

Name **BREMBO N.V.**

Full address **Registered office: Amsterdam (Netherlands)**

District and Country **Business and Corporate Address: Via Stezzano, 87**
24126, Bergamo (BG) Italia

Tel. +39 035 6051111

e-mail address of the competent person

responsible for the Safety Data Sheet **SDS@brembo.com**

1.4. Emergency telephone number

For urgent inquiries refer to **+39 035 6051111 (8.30 – 17.30 IT, EN)**

SECTION 2. Hazards identification

2.1. Classification of the substance or mixture

The product is classified as hazardous pursuant to the provisions set forth in (EC) Regulation 1272/2008 (CLP) (and subsequent amendments and supplements). The product thus requires a safety datasheet that complies with the provisions of (EU) Regulation 2020/878.
Any additional information concerning the risks for health and/or the environment are given in sections 11 and 12 of this sheet.

Hazard classification and indication:

Eye irritation, category 2	H319	Causes serious eye irritation.

2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms:

Signal words: Warning

Hazard statements:

H319 Causes serious eye irritation.

Precautionary statements:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
P280 Wear eye protection / face protection.
P337+P313 If eye irritation persists: Get medical advice / attention.

2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0,1%.

The product does not contain substances with endocrine disrupting properties in concentration ≥ 0.1%.

SECTION 3. Composition/information on ingredients

3.2. Mixtures

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol		
CAS -	20 ≤ x < 30	Eye Dam. 1 H318
EC 907-996-4		Eye Dam. 1 H318: ≥ 30%, Eye Irrit. 2 H319: ≥ 20%
INDEX -		
REACH Reg. 01-2119475115-41-xxxx		
2-(2-BUTOXYETHOXY)ETHANOL		
CAS 112-34-5	10 ≤ x < 15	Eye Irrit. 2 H319
EC 203-961-6		
INDEX 603-096-00-8		
REACH Reg. 01-2119475104-44-xxxx		
TRIETHYLENE GLYCOL		
CAS 112-27-6	10 ≤ x < 15	Substance with a community workplace exposure limit.
EC 203-953-2		
INDEX -		
REACH Reg. 01-2119438366-35-xxxx		
2,6-di-tert-butyl-p-cresol		

CAS 128-37-0	0,1 ≤ x < 0,25	Aquatic Chronic 1 H410 M=1
EC 204-881-4		
INDEX -		
REACH Reg. 01-2119480433-40-xxxx		

The full wording of hazard (H) phrases is given in section 16 of the sheet.

SECTION 4. First aid measures

4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 30-60 minutes, opening the eyelids fully. Get medical advice/attention.
SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention.
INGESTION: Have the subject drink as much water as possible. Get medical advice/attention. Do not induce vomiting unless explicitly authorised by a doctor.
INHALATION: Get medical advice/attention immediately. Remove victim to fresh air, away from the accident scene. If the subject stops breathing, administer artificial respiration. Take suitable precautions for rescue workers.

4.2. Most important symptoms and effects, both acute and delayed

Specific information on symptoms and effects caused by the product are unknown.

4.3. Indication of any immediate medical attention and special treatment needed

Information not available

SECTION 5. Firefighting measures

5.1. Extinguishing media

SUITABLE EXTINGUISHING EQUIPMENT
The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.
UNSUITABLE EXTINGUISHING EQUIPMENT
None in particular.

5.2. Special hazards arising from the substance or mixture

HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE
Do not breathe combustion products.

5.3. Advice for firefighters

GENERAL INFORMATION
Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS
Normal fire fighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

SECTION 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Block the leakage if there is no hazard.
Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

6.3. Methods and material for containment and cleaning up

Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material.
Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

2-(2-BUTOXYETHOXY)ETHANOL
Use
earthed
equipment.
Keep
away
from
naked
flames/heat.
Finely
divided:
spark-
and
explosionproof
appliances.
Finely
divided:
keep
away
from
ignition
sources/sparks.
Gas/vapour
heavier
than
air
at
20°C.
Observe
normal

hygiene standards. Keep container tightly closed. Do not discharge the waste into the drain.

7.2. Conditions for safe storage, including any incompatibilities

Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

2-(2-BUTOXYETHOXY)ETHANOL
Storage temperature: 15 °C -25 °C. Store in a cool area. Store in a dry area. Store in a dark area. Ventilation at floor level. Provide for a tub to collect spills. Provide the tank with earthing. Meet the legal equirements. Keep away from: Heat sources, oxidizing agents, (strong) acids, (strong) bases, metals, peroxides. Suitable packaging material: Stainless steel, polypropylene, glass, tin, plastics. Non suitable packaging material: Aluminium, copper.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection

8.1. Control parameters

Regulatory References:

DEU	Deutschland	Technischen Regeln für Gefahrstoffe (TRGS 900) - Liste der Arbeitsplatzgrenzwerte und Kurzzeitwerte. MAK- und BAT-Werte-Liste 2020, Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe, Mitteilung 56
DNK	Danmark	Bekendtgørelse om grænseværdier for stoffer og materialer - BEK nr 1458 af 13/12/2019
ESP	España	Límites de exposición profesional para agentes químicos en España 2021
FIN	Suomi	HTP-VÄRDEN 2020. Koncentrationer som befunnits skadliga. SOCIAL - OCH HÄLSOVÅRDSMINISTERIETS PUBLIKATIONER 2020:25
GRC	Ελλάδα	Π.Δ. 26/2020 (ΦΕΚ 50/Α` 6.3.2020) Εναρμόνιση της ελληνικής νομοθεσίας προς τις διατάξεις των οδηγιών 2017/2398/ΕΕ, 2019/130/ΕΕ και 2019/983/ΕΕ «για την τροποποίηση της οδηγίας 2004/37/ΕΚ ``σχετικά με την προστασία των εργαζομένων από τους κινδύνους που συνδέονται με την έκθεση σε καρκινογόνους ή μεταλλαξιγόνους παράγοντες κατά την εργασία``»
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
LTU	Lietuva	Jsakymas dėl lietuvos higienos normos hn 23:2011 „cheminių medžiagų profesinio poveikio ribiniai dydžiai. Matavimo ir poveikio vertinimo bendrieji reikalavimai“ patvirtinimo
LVA	Latvija	Grozījumi Ministru kabineta 2007. gada 15. maija noteikumos Nr. 325 "Darba aizsardzības prasības saskarē ar ķīmiskajām vielām darba vietās" (prot. Nr. 32 18. §; prot. Nr. 1 22. §)
NLD	Nederland	Arbeidsomstandighedenregeling. Lijst van wettelijke grenswaarden op grond van de artikelen 4.3, eerste lid, en 4.16, eerste lid, van het Arbeidsomstandighedenbesluit
SWE	Sverige	Hygieniska gränsvärden, Arbetsmiljöverkets föreskrifter och allmänna råd om hygieniska gränsvärden (AFS 2018:1)
SVK	Slovensko	NARIADENIE VLÁDY Slovenskej republiky z 12. augusta 2020, ktorým sa mení a dopĺňa nariadenie vlády Slovenskej republiky č. 356/2006 Z. z. o ochrane zdravia zamestnancov pred rizikami súvisiacimi s expozíciou karcinogénnym a mutagénnym faktorom pri práci v znení neskorších predpisov
SVN	Slovenija	Pravilnik o varovanju delavcev pred tveganji zaradi izpostavljenosti kemičnim snovem pri delu (Uradni list RS, št. 100/01, 39/05, 53/07, 102/10, 43/11 – ZVZD-1, 38/15, 78/18 in 78/19)
EU	OEL EU	Directive (EU) 2022/431; Directive (EU) 2019/1831; Directive (EU) 2019/130; Directive (EU) 2019/983; Directive (EU) 2017/2398; Directive (EU) 2017/164; Directive 2009/161/EU; Directive 2006/15/EC; Directive 2004/37/EC; Directive 2000/39/EC; Directive 98/24/EC; Directive 91/322/EEC.

TLV-ACGIH ACGIH 2022

2-(2-(2-methoxyethoxy)ethoxy)ethanol

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV-ACGIH		50				

Predicted no-effect concentration - PNEC		
Normal value in fresh water	10	mg/l
Normal value in marine water	1	mg/l
Normal value for fresh water sediment	36,6	mg/kg
Normal value for marine water sediment	3,66	mg/kg
Normal value for water, intermittent release	50	mg/l
Normal value of STP microorganisms	200	mg/l
Normal value for the food chain (secondary poisoning)	89	mg/kg
Normal value for the terrestrial compartment	1,56	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral			VND	2 mg/kg				10 mg/kg bw/d
Inhalation			VND	93 mg/m3			VND	156 mg/m3
Skin			VND	100 mg/kg			VND	167 mg/kg bw/d

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

Predicted no-effect concentration - PNEC		
Normal value in fresh water	2	mg/l
Normal value in marine water	0,2	mg/l
Normal value for fresh water sediment	6,6	mg/kg
Normal value for marine water sediment	0,66	mg/kg
Normal value for water, intermittent release	18	mg/l
Normal value of STP microorganisms	500	mg/l
Normal value for the food chain (secondary poisoning)	333	mg/kg
Normal value for the terrestrial compartment	0,46	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral				12,5 mg/kg bw/d				
Inhalation				117 mg/m3				195 mg/m3
Skin				125 mg/kg bw/d				208 mg/kg bw/d

2-(2-BUTOXYETHOXY)ETHANOL

Threshold Limit Value

Type	Country	TWA/8h	STEL/15min	Remarks / Observations

		mg/m3	ppm	mg/m3	ppm		
AGW	DEU	67	10	100,5	15		
MAK	DEU	67	10	100,5	15		
TLV	DNK	67,5	10				
VLA	ESP	67,5	10	101,2	15		
HTP	FIN	68	10				
TLV	GRC	67,5	10	101,2	15		
VLEP	ITA	67,5	10	101,2	15		
RD	LTU	100	15	200	30		
RV	LVA	67,5	10	101,2	15		
TGG	NLD	50		100		SKIN	
NGV/KGV	SWE	100	15	200	30		
NPEL	SVK	67,5	10	101,2			
MV	SVN	67,5	10				
OEL	EU	67,5	10	101,2	15		

Predicted no-effect concentration - PNEC		
Normal value in fresh water	1,1	mg/l
Normal value in marine water	0,11	mg/l
Normal value for fresh water sediment	4,4	mg/kg
Normal value for marine water sediment	0,44	mg/kg
Normal value for water, intermittent release	11	mg/l
Normal value for the food chain (secondary poisoning)	56	mg/kg
Normal value for the terrestrial compartment	0,32	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral			VND	5 mg/kg bw/d				
Inhalation	60,7 mg/m3	VND	40,5 mg/m3	40,5 mg/m3	101.2 mg/m3	VND	67,5 mg/m3	67,5 mg/m3
Skin			VND	50 mg/kg bw/d			VND	83 mg/kg bw/d

TRIETHYLENE GLYCOL

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
OEL	EU	1000				

Predicted no-effect concentration - PNEC		
Normal value in fresh water	10	mg/l
Normal value in marine water	1	mg/l
Normal value for fresh water sediment	46	mg/kg
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	3,32	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers	Effects on workers

Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation			25 mg/m3	VND			50 mg/m3	VND
Skin			VND	20 mg/kg/d			VND	40 mg/kg/d

2,2'-metilimminodietanolo

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,1	mg/l
Normal value in marine water	0,0125	mg/l
Normal value for fresh water sediment	0,89	mg/kg
Normal value for marine water sediment	0,111	mg/kg
Normal value for water, intermittent release	1	mg/l
Normal value of STP microorganisms	10	mg/l
Normal value for the terrestrial compartment	0,119	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Inhalation								26 mg/m3
Skin								19 mg/kg

2,6-di-tert-butyl-p-cresol

Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		Remarks / Observations
		mg/m3	ppm	mg/m3	ppm	
TLV-ACGIH		2				

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,199	µg/l
Normal value in marine water	0,02	µg/l
Normal value for fresh water sediment	99,6	µG/kg
Normal value for marine water sediment	9,96	µG/kg
Normal value for water, intermittent release	1,99	µg/l
Normal value of STP microorganisms	0,17	mg/l
Normal value for the food chain (secondary poisoning)	8,33	mg/kg
Normal value for the terrestrial compartment	47,69	µG/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral		1 mg/kg bw/d		0,25 mg/kg bw/d				
Inhalation		3,1 mg/m3		0,78 mg/m3		18 mg/m3		4,4 mg/m3
Skin		6,7 mg/kg bw/d		1,7 mg/kg bw/d		19 mg/kg bw/d		4,7 mg/kg bw/d

METHYL-1H-BENZOTRIAZOLE

Predicted no-effect concentration - PNEC		
Normal value in fresh water	0,008	mg/l

Normal value in marine water	0,008	mg/l
Normal value for fresh water sediment	0,0025	mg/kg
Normal value for marine water sediment	0,0025	mg/kg
Normal value for water, intermittent release	0,086	mg/l
Normal value of STP microorganisms	39,4	mg/l
Normal value for the terrestrial compartment	0,0024	mg/kg

Health - Derived no-effect level - DNEL / DMEL

	Effects on consumers				Effects on workers			
Route of exposure	Acute local	Acute systemic	Chronic local	Chronic systemic	Acute local	Acute systemic	Chronic local	Chronic systemic
Oral			VND	0,25 mg/kg				
Inhalation			VND	4,4 mg/m3			VND	8,8 mg/m3
Skin			VND	0,25 mg/kg			VND	0,5 mg/kg

Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified ; LOW = low hazard ; MED = medium hazard ; HIGH = high hazard.

8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.
When choosing personal protective equipment, ask your chemical substance supplier for advice.
Personal protective equipment must be CE marked, showing that it complies with applicable standards.

Provide an emergency shower with face and eye wash station.

HAND PROTECTION
Protect hands with category III work gloves.
The following should be considered when choosing work glove material (see standard EN 374): compatibility, degradation, failure time and permeability.
The work gloves' resistance to chemical agents should be checked before use, as it can be unpredictable. The gloves' wear time depends on the duration and type of use.

SKIN PROTECTION
Wear category I professional long-sleeved overalls and safety footwear (see Regulation 2016/425 and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

EYE PROTECTION
Wear airtight protective goggles (see standard EN 166).

RESPIRATORY PROTECTION
If the threshold value (e.g. TLV-TWA) is exceeded for the substance or one of the substances present in the product, use a mask with a type A filter whose class (1, 2 or 3) must be chosen according to the limit of use concentration. (see standard EN 14387). In the presence of gases or vapours of various kinds and/or gases or vapours containing particulate (aerosol sprays, fumes, mists, etc.) combined filters are required.
Respiratory protection devices must be used if the technical measures adopted are not suitable for restricting the worker's exposure to the threshold values considered. The protection provided by masks is in any case limited.
If the substance considered is odourless or its olfactory threshold is higher than the corresponding TLV-TWA and in the case of an emergency, wear open-circuit compressed air breathing apparatus (in compliance with standard EN 137) or external air-intake breathing apparatus (in compliance with standard EN 138). For a correct choice of respiratory protection device, see standard EN 529.

ENVIRONMENTAL EXPOSURE CONTROLS
The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Information
Appearance	liquid	
Colour	amber	
Odour	characteristic	
Melting point / freezing point	not available	
Initial boiling point	not available	
Flammability	not available	
Lower explosive limit	1,5 % (v/v)	
Upper explosive limit	22 % (v/v)	
Flash point	> 100 °C	
Auto-ignition temperature	> 300 °C	
pH	7-11	
Kinematic viscosity	not available	
Solubility	soluble	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	1,000-1,100	
Relative vapour density	not available	
Particle characteristics	not applicable	

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Information not available

9.2.2. Other safety characteristics

Information not available

SECTION 10. Stability and reactivity

10.1. Reactivity

The product may react exothermically on contact with strong oxidising or reducing agents, strong acids or bases.

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

Hygroscopic.

10.2. Chemical stability

Excessively high temperatures can cause thermal decomposition.

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

Avoid exposure to: air.

Hygroscopic.

10.3. Possibility of hazardous reactions

See paragraph 10.1.

2-(2-BUTOXYETHOXY)ETHANOL

2-(2-BUTOXYETHOXY)ETHANOL: can react with oxidising agents. It forms peroxides with atmospheric oxygen. When it reacts with aluminium is can generate hydrogen. May form explosive mixtures with air.

10.4. Conditions to avoid

Avoid overheating.

2-(2-BUTOXYETHOXY)ETHANOL

2-(2-BUTOXYETHOXY)ETHANOL: avoid contact with the air.

10.5. Incompatible materials

Oxidising or reducing agents. Strong acids or bases.

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

Avoid contact with: strong acids,strong bases,water.

2-(2-BUTOXYETHOXY)ETHANOL

2-(2-BUTOXYETHOXY)ETHANOL: oxidising substances, strong acids and alkaline metals.

2,6-di-tert-butyl-p-cresol

Avoid contact with: oxidising agents.

10.6. Hazardous decomposition products

In the event of thermal decomposition or fire, gases and vapours that are potentially dangerous to health may be released.

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

Develops: carbon monoxide,carbon dioxide.

2-(2-BUTOXYETHOXY)ETHANOL

2-(2-BUTOXYETHOXY)ETHANOL: hydrogen.

2,6-di-tert-butyl-p-cresol

In decomposition develops: carbon oxides.

SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.
It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

2-(2-BUTOXYETHOXY)ETHANOL
2-(2-BUTOXYETHOXY)ETHANOL: can be absorbed by inhalation, ingestion and skin contact; it is irritant to the skin and especially to the eyes; spleen damage may occur. Inhalation is unlikely to occur at room temperature due to the low vapour tension of the substance.

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

Information not available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Information not available

Interactive effects

Information not available

ACUTE TOXICITY

ATE (Inhalation) of the mixture:	Not classified (no significant component)
ATE (Oral) of the mixture:	Not classified (no significant component)
ATE (Dermal) of the mixture:	Not classified (no significant component)

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

LD50 (Dermal):	3540 mg/kg bw
LD50 (Oral):	5170 mg/kg bw

2-(2-BUTOXYETHOXY)ETHANOL

LD50 (Dermal):	2700 mg/kg Rabbit
LD50 (Oral):	2410 mg/kg Rat
LC50 (Inhalation mists/powders):	> 29 ppm

TRIETHYLENE GLYCOL

LD50 (Dermal):	16 ml/kg bw
LD50 (Oral):	> 2000 mg/kg bw
LC50 (Inhalation vapours):	> 5,2 mg/l

2,6-di-tert-butyl-p-cresol

LD50 (Dermal):	> 2000 mg/kg dw
LD50 (Oral):	> 2930 mg/kg dw

SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class

SERIOUS EYE DAMAGE / IRRITATION

Causes serious eye irritation

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

Respiratory sensitization

Information not available

Skin sensitization

Information not available

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

Adverse effects on sexual function and fertility

Information not available

Adverse effects on development of the offspring

Information not available

Effects on or via lactation

Information not available

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

Target organs

Information not available

Route of exposure

Information not available

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

Target organs

Information not available

Route of exposure

Information not available

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

11.2. Information on other hazards

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with human health effects under evaluation.

SECTION 12. Ecological information

Use this product according to good working practices. Avoid littering. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation.

12.1. Toxicity

2,6-di-tert-butyl-p-cresol

EC50 - for Crustacea	> 0,61 mg/l/48h
Chronic NOEC for Crustacea	0,316 mg/l

TRIETHYLENE GLYCOL

LC50 - for Fish	69800 mg/l/96h
EC50 - for Crustacea	> 10000 mg/l/48h

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

LC50 - for Fish	> 1800 mg/l/96h
EC50 - for Crustacea	> 3200 mg/l/48h
EC50 - for Algae / Aquatic Plants	391 mg/l/72h
EC10 for Algae / Aquatic Plants	188 mg/l/72h

2-(2-BUTOXYETHOXY)ETHANOL

LC50 - for Fish	1300 mg/l/96h
EC50 - for Crustacea	4950 mg/l/48h
EC10 for Crustacea	> 1995 mg/l

12.2. Persistence and degradability

2,6-di-tert-butyl-p-cresol

NOT rapidly degradable

TRIETHYLENE GLYCOL

Rapidly degradable

12.3. Bioaccumulative potential

TRIETHYLENE GLYCOL

Partition coefficient: n-octanol/water	-1,75

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

Partition coefficient: n-octanol/water	0,51

2-(2-BUTOXYETHOXY)ETHANOL

Partition coefficient: n-octanol/water	1

12.4. Mobility in soil

TRIETHYLENE GLYCOL

Partition coefficient: soil/water	1

12.5. Results of PBT and vPvB assessment

On the basis of available data, the product does not contain any PBT or vPvB in percentage ≥ than 0,1%.

12.6. Endocrine disrupting properties

Based on the available data, the product does not contain substances listed in the main European lists of potential or suspected endocrine disruptors with environmental effects under evaluation.

12.7. Other adverse effects

Information not available

SECTION 13. Disposal considerations

13.1. Waste treatment methods

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

14.1. UN number or ID number

not applicable

14.2. UN proper shipping name

not applicable

14.3. Transport hazard class(es)

not applicable

14.4. Packing group

not applicable

14.5. Environmental hazards

not applicable

14.6. Special precautions for user

not applicable

14.7. Maritime transport in bulk according to IMO instruments

Information not relevant

SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EU: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

Product

Point	3	

Contained substance

Point	55	2-(2-BUTOXYETHOXY)ETHANOL REACH Reg.: 01-2119475104-44-xxxx

Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors

not applicable

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage ≥ than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Workers exposed to this chemical agent must not undergo health checks, provided that available risk-assessment data prove that the risks related to the workers' health and safety are modest and that the 98/24/EC directive is respected.

15.2. Chemical safety assessment

A chemical safety assessment has been performed for the following contained substances

Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and 3,6,9,12-tetraoxahexadecan-1-ol

2-(2-BUTOXYETHOXY)ETHANOL

TRIETHYLENE GLYCOL

2,6-di-tert-butyl-p-cresol

SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

Eye Dam. 1	Serious eye damage, category 1
Eye Irrit. 2	Eye irritation, category 2
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic toxicity, category 1
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H410	Very toxic to aquatic life with long lasting effects.

LEGEND:
- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- ATE: Acute Toxicity Estimate
- CAS: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE: Identifier in ESIS (European archive of existing substances)
- CLP: Regulation (EC) 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level

- PNEC: Predicted no effect concentration
- REACH: Regulation (EC) 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA: Time-weighted average exposure limit
- TWA STEL: Short-term exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 2020/878 (II Annex of REACH Regulation)
4. Regulation (EC) 790/2009 (I Atp. CLP) of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)
13. Regulation (EU) 2017/776 (X Atp. CLP)
14. Regulation (EU) 2018/669 (XI Atp. CLP)
15. Regulation (EU) 2019/521 (XII Atp. CLP)
16. Delegated Regulation (UE) 2018/1480 (XIII Atp. CLP)
17. Regulation (EU) 2019/1148
18. Delegated Regulation (UE) 2020/217 (XIV Atp. CLP)
19. Delegated Regulation (UE) 2020/1182 (XV Atp. CLP)
20. Delegated Regulation (UE) 2021/643 (XVI Atp. CLP)
21. Delegated Regulation (UE) 2021/849 (XVII Atp. CLP)
- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanità) - Italy

Note for users:
The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.
This document must not be regarded as a guarantee on any specific product property.
The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.
Provide appointed staff with adequate training on how to use chemical products.

CALCULATION METHODS FOR CLASSIFICATION

Chemical and physical hazards: Product classification derives from criteria established by the CLP Regulation, Annex I, Part 2. The data for evaluation of chemical-physical properties are reported in section 9.
Health hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 3, unless determined otherwise in Section 11.
Environmental hazards: Product classification is based on calculation methods as per Annex I of CLP, Part 4, unless determined otherwise in Section 12.