



BREMBO N.V.

Revision nr. 1

Dated 10/06/2024

First compilation

Printed on 10/06/2024

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BRAKE FLUID DOT5.1 LV

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 DOT5.1 LV**

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

Intended use **BRAKE FLUID DOT5.1 LV**

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:

Reproductive toxicity, category 2

H361fd

Suspected of damaging fertility. Suspected of damaging the unborn child.

2.2. Label elements

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

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Hazard pictograms:



Signal words: Warning

Hazard statements:

H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary statements:

P280 Wear protective gloves/ protective clothing / eye protection / face protection.**P201** Obtain special instructions before use.**P308+P313** IF exposed or concerned: Get medical advice / attention.**Contains:** tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] borate**2.3. Other hazards**On the basis of available data, the product does not contain any PBT or vPvB in percentage \geq than 0,1%.The product does not contain substances with endocrine disrupting properties in concentration \geq 0.1%.**SECTION 3. Composition/information on ingredients****3.2. Mixtures**

Contains:

Identification	x = Conc. %	Classification (EC) 1272/2008 (CLP)
tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] borate		
INDEX -	$60 \leq x < 70$	Repr. 2 H361fd
EC 250-418-4		
CAS 30989-05-0		
REACH Reg. 01-2119462824-33-xxxx		
DI-ISOPROPANOLAMINE		
INDEX 603-083-00-7	$1 \leq x < 3$	Eye Irrit. 2 H319
EC 203-820-9		
CAS 110-97-4		
REACH Reg. 01-2119475444-34-xxxx		
Reaction mass of 2-(2-(2-butoxyethoxy)ethoxy)ethanol and		



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3,6,9,12-tetraoxahexadecan-1-ol

INDEX -

$1 \leq x < 3$

Eye Dam. 1 H318

EC 907-996-4

Eye Dam. 1 H318: $\geq 30\%$, Eye Irrit. 2 H319: $\geq 20\% - < 30\%$

CAS -

REACH Reg. 01-2119475115-41-
xxxx

**DIETHYLENE GLYCOL
MONOMETHYL ETHER**

INDEX 603-107-00-6

$0,1 \leq x < 1$

Repr. 1B H360D

EC 203-906-6

Repr. 1B H360D: $\geq 3\%$

CAS 111-77-3

REACH Reg. 01-2119475100-52-
xxxx

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

INDEX

$0,1 \leq x < 0,2$

Aquatic Chronic 1 H410 M=1

EC 204-881-4

CAS 128-37-0

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

In case of doubt or in the presence of symptoms contact a doctor and show him this document.

In case of more severe symptoms, ask for immediate medical aid.

EYES: Remove, if present, contact lenses if the situation allows you to do so easily. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. Get medical advice/attention.

SKIN: Take off contaminated clothing. Wash immediately and thoroughly with running water (and soap if possible). Get medical advice. Avoid further contact with contaminated clothing.

INGESTION: Do not induce vomiting unless explicitly authorised by a doctor. Do not give anything by mouth to an unconscious person. Get medical advice/attention.

INHALATION: Remove victim to fresh air, away from the accident scene. Get medical advice/attention.

Rescuer protection

It is good practice for rescuers lending support to a person who has been exposed to a chemical substance or to a mixture to wear personal protective equipment. The nature of such protection depends on the hazard level of the substance or mixture, on the type of exposure and on the extent of the contamination. In the absence of other more specific indications, use of disposable gloves in the event of possible contact with body fluids is recommended. For the type of PPE suitable for the characteristics of the substance or mixture, see section 8.

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

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

DELAYED EFFECTS: Based on the information currently available, there are no known cases of delayed effects following exposure to this product.

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

IF exposed or concerned: Get medical advice / attention.

Means to have available in the workplace for specific and immediate treatment



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Running water for skin and eye wash.

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

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BRAKE FLUID DOT5.1 LV**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.

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.

7.3. Specific end use(s)

Information not available

SECTION 8. Exposure controls/personal protection**8.1. Control parameters**

Regulatory references:

BGR	България	НАРЕДБА № 13 ОТ 30 ДЕКЕМВРИ 2003 Г. ЗА ЗАЩИТА НА РАБОТЕЩИТЕ ОТ РИСКОВЕ, СВЪРЗАНИ С ЕКСПОЗИЦИЯ НА ХИМИЧНИ АГЕНТИ ПРИ РАБОТА (изм. ДВ. бр.5 от 17 Януари 2020г.)
CZE	Česká Republika	NAŘÍZENÍ VLÁDY ze dne 10. května 2021, kterým se mění nařízení vlády č. 361/2007 Sb., kterým se stanoví podmínky ochrany zdraví při práci
DEU	Deutschland	Forschungsgemeinschaft MAK- und BAT-Werte-Liste 2022 Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe Mitteilung 58
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 2023
FRA	France	Valeurs limites d'exposition professionnelle aux agents chimiques en France Décret n° 2021-1849 du 28 décembre 2021
FIN	Suomi	HTP-VÄRDEN 2020. Koncentrationer som befunnits skadliga. SOCIAL - OCH HÄLSOVÄRDSMINISTERIETS 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 μεταλλαξιογόνους παράγοντες κατά την εργασία»
HUN	Magyarország	Az innovációért és technológiáért felelős miniszter 5/2020. (II. 6.) ITM rendelete a kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről
HRV	Hrvatska	Pravilnik o izmjenama i dopunama Pravilnika o zaštiti radnika od izloženosti opasnim kemikalijama na radu, graničnim vrijednostima izloženosti i biološkim graničnim vrijednostima (NN 1/2021)
ITA	Italia	Decreto Legislativo 9 Aprile 2008, n.81
LTU	Lietuva	Jsakymas dėl lietuvis 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 darbā vietās" (prot. Nr. 32 18. §; prot. Nr. 1 22. §)
NOR	Norge	Forskrift om endring i forskrift om tiltaksverdier og grenseverdier for fysiske og kjemiske faktorer i arbeidsmiljøet samt smitterisikogrupper for biologiske faktorer (forskrift om tiltaks- og grenseverdier), 21. august 2018 nr. 1255
NLD	Nederland	Arbeidsomstandighedenregeling. Lijst van wettelijke grenswaarden op grond van de artikelen 4.3, eerste lid, en 4.16, eerste lid, van het Arbeidsomstandighedenbesluit
PRT	Portugal	Decreto-Lei n.º 1/2021 de 6 de janeiro, valores-limite de exposição profissional indicativos para os agentes químicos. Decreto-Lei n.º 35/2020 de 13 de julho, proteção dos trabalhadores contra os riscos ligados à exposição durante o trabalho a agentes cancerígenos ou mutagénicos
POL	Polska	Rozporządzenie ministra rozwoju, pracy i technologii z dnia 18 lutego 2021 r. Zmieniające rozporządzenie w sprawie najwyższych dopuszczalnych stężeń i natężeń czynników szkodliwych dla zdrowia w środowisku pracy
ROU	România	Hotărârea nr. 53/2021 pentru modificarea hotărârii guvernului nr. 1.218/2006, precum și pentru modificarea și completarea hotărârii guvernului nr. 1.093/2006
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 –

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TUR	Türkiye	ZVZD-1, 38/15, 78/18 in 78/19)
GBR	United Kingdom	Kimyasal Maddelerle Çalışmalarda Sağlık ve Güvenlik Önlemleri Hakkında Yönetmelik 12.08.2013 / 28733;
EU	OEL EU	20.10.2023 / 32345.
	TLV-ACGIH	EH40/2005 Workplace exposure limits (Fourth Edition 2020)
		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.
		ACGIH 2023

tris[2-(2-(2-methoxyethoxy)ethoxy)ethyl] borate

Predicted no-effect concentration - PNEC

Normal value in fresh water	0,211	mg/l
Normal value in marine water	0,021	mg/l
Normal value for fresh water sediment	0,76	mg/kg
Normal value for marine water sediment	0,076	mg/kg
Normal value for water, intermittent release	2,112	mg/l
Normal value of STP microorganisms	100	mg/l
Normal value for the terrestrial compartment	0,028	mg/kg

Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers			Chronic systemic	Effects on workers		
	Acute local	Acute systemic	Chronic local		Acute local	Acute systemic	Chronic local
Inhalation				7,2 mg/m ³			29,1 mg/m ³

2-(2-(2-methoxyethoxy)ethoxy)ethanol**Threshold Limit Value**

Type	Country	TWA/8h	STEL/15min	Remarks / Observations
		mg/m ³	ppm	mg/m ³
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

Route of exposure	Effects on consumers			Chronic systemic	Effects on workers		
	Acute local	Acute systemic	Chronic local		Acute local	Acute systemic	Chronic local
Oral			VND	2 mg/kg			10 mg/kg bw/d
Inhalation			VND	93 mg/m ³		VND	156 mg/m ³
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

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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

Route of exposure	Effects on consumers			Chronic systemic	Effects on workers		
	Acute local	Acute systemic	Chronic local		Acute local	Acute systemic	Chronic local
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

DIETHYLENE GLYCOL MONOMETHYL ETHER**Threshold Limit Value**

Type	Country	TWA/8h	STEL/15min		Remarks / Observations	
		mg/m3	ppm	mg/m3		ppm
TLV	BGR	50,1	10		SKIN	
TLV	CZE	50	10	100	20	SKIN
AGW	DEU	50	10			SKIN 11
TLV	DNK	50	10			SKIN E
VLA	ESP	50,1	10			SKIN
VLEP	FRA	50,1	10			SKIN
HTP	FIN	50	10			SKIN
TLV	GRC	50,1	10			SKIN
AK	HUN	50,1	10			SKIN
GVI/KGVI	HRV	50,1	10			SKIN
VLEP	ITA	50,1	10			SKIN
RD	LTU	50,1	10			SKIN
RV	LVA	50,1	10			SKIN
TLV	NOR	50	10			SKIN
TGG	NLD	45				SKIN
VLE	PRT	50,1	10			SKIN
NDS/NDSch	POL	50				SKIN
TLV	ROU	50,1	10			SKIN
NGV/KGV	SWE	50	10			SKIN
NPEL	SVK	50,1	10			SKIN
MV	SVN	50,1	10			SKIN
ESD	TUR	50,1	10			SKIN
WEL	GBR	50,1	10			SKIN

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OEL EU 50,1 10 SKIN

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

Route of exposure	Effects on consumers			Effects on workers				
	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

Route of exposure	Effects on consumers			Effects on workers				
	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.



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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, permeability time.

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 ISO 16321).

RESPIRATORY PROTECTION

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. 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).

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	colourless to amber	
Odour	characteristic	
Melting point / freezing point	not available	
Initial boiling point	> 260 °C	
Flammability	not available	
Lower explosive limit	not available	
Upper explosive limit	not available	

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Flash point	> 125 °C
Auto-ignition temperature	not available
Decomposition temperature	not available
pH	not available
Kinematic viscosity	not available
Solubility	soluble
Partition coefficient: n-octanol/water	not available
Vapour pressure	not available
Density and/or relative density	1,050 - 1,080 g/cm ³
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

VOC (Directive 2010/75/EU) 0

VOC (volatile carbon) 0

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.

10.3. Possibility of hazardous reactions

See paragraph 10.1.

DIETHYLENE GLYCOL MONOMETHYL ETHER

Reacts violently developing heat on contact with: alkaline metals, strong acids, strong oxidants, oleum. Fire hazard. Develops flammable gas on contact with: calcium hypochlorite. Develops hydrogen on contact with: aluminium.



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10.4. Conditions to avoid

Avoid overheating.

DIETHYLENE GLYCOL MONOMETHYL ETHER

Possibility of explosion with air due to production of peroxides.

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.

2,6-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.

DIETHYLENE GLYCOL MONOMETHYL ETHER

When heated to decomposition releases: harsh fumes, zinc alloys.

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

Metabolism, toxicokinetics, mechanism of action and other information

Information not available

Information on likely routes of exposure

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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)

tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] borate

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

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

LD50 (Dermal):	7,1 g/kg
LD50 (Oral):	> 10500 mg/kg

DI-ISOPROPANOLAMINE

LD50 (Oral):	6720 mg/kg
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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

DIETHYLENE GLYCOL MONOMETHYL ETHER

LD50 (Oral):	5500 mg/kg Rat
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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

Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

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Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Suspected of damaging fertility - Suspected of damaging the unborn child

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

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

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

LC50 - for Fish 10000 mg/l/96h

EC50 - for Crustacea > 500 mg/l/48h

Chronic NOEC for Crustacea 3152 mg/l

Chronic NOEC for Algae / Aquatic Plants 1000 mg/l

DI-ISOPROPANOLAMINE

LC50 - for Fish > 222,2 mg/l/96h

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



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EC10 for Algae / Aquatic Plants 188 mg/l/72h

tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl]
borate

LC50 - for Fish > 222,2 mg/l/96h

EC50 - for Crustacea > 211,2 mg/l/48h

EC50 - for Algae / Aquatic Plants > 224,4 mg/l/72h

12.2. Persistence and degradability

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

NOT rapidly degradable

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

Rapidly degradable

DI-ISOPROPANOLAMINE

Rapidly degradable

DIETHYLENE GLYCOL MONOMETHYL
ETHER

Solubility in water 1000 - 10000 mg/l

Rapidly degradable

tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl]
borate

Rapidly degradable

12.3. Bioaccumulative potential

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

Partition coefficient: n-octanol/water 0,51

DIETHYLENE GLYCOL MONOMETHYL
ETHER

Partition coefficient: n-octanol/water -0,47

12.4. Mobility in soil

Information not available

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 \geq 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



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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



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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

The chemical substances contained comply with all applicable rules or orders under TSCA.

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 75

Point 30-54

DIETHYLENE GLYCOL
MONOMETHYL ETHER REACH
Reg.: 01-2119475100-52-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 \geq 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:



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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

tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] borate

DI-ISOPROPANOLAMINE

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

DIETHYLENE GLYCOL MONOMETHYL ETHER

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

SECTION 16. Other information

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

Repr. 1B	Reproductive toxicity, category 1B
Repr. 2	Reproductive toxicity, category 2
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
H360D	May damage the unborn child.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
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%

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- OEL: Occupational Exposure Level
- PBT: Persistent, bioaccumulative and toxic
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PMT: Persistent, mobile and toxic
- 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
- vPvM: Very persistent and very mobile
- WGK: Water hazard classes (German).

GENERAL BIBLIOGRAPHY

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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.



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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.