



FTE

BRAKE FLUID DOT 5.1

Revision nr. 5

Dated 04/08/2025

Printed on 04/08/2025

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Replaced revision:4 (Printed on: 23/03/2023)

Safety Data Sheet

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

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

1.1. Product identifier

Product name

BRAKE FLUID DOT 5.1

UFI :

KEF0-C0N6-A005-6VG5

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

Intended use

BRAKE FLUID DOT 5.1 (for B2C)

Identified Uses

Industrial

Professional

Consumer

Functional Fluids



1.3. Details of the supplier of the safety data sheet

Name

Valeo Service UK Limited

Full address

53 Heming Road, Washford

District and Country

Redditch, Worcestershire, B98 0DZ
ENGLAND

+44 1527 838 300

FTE Automotive GmbH

Andreas Humann Str. 2, 96106 Ebern
GERMANY

e-mail address of the competent person

responsible for the Safety Data Sheet

alert.UK@valeo.com

1.4. Emergency telephone number

For urgent inquiries refer to

UK : 999

For medical advice : England : 111 / Scotland : 111 / Wales : 111 or 0845 4647

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.

Hazard pictograms:



Signal words: Warning

Hazard statements:

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

Precautionary statements:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

P102 Keep out of reach of children.

P101 If medical advice is needed, have product container or label at hand.

P280 Wear protective gloves/ protective clothing / eye protection / face protection.

P405 Store locked up.

P201 Obtain special instructions before use.

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		



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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 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		
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.



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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

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.

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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.

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

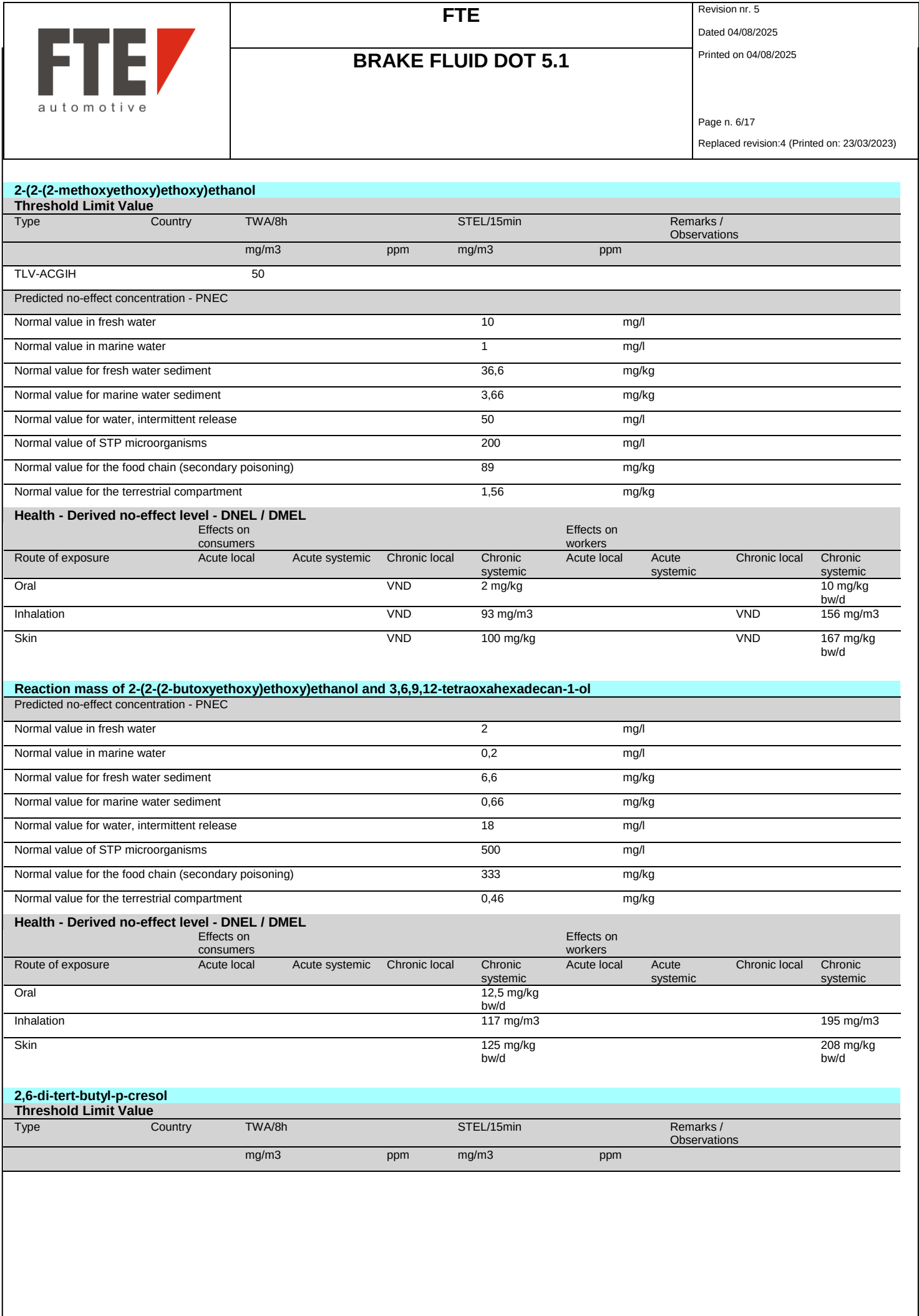
Regulatory references:

TLV-ACGIH 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	Chronic systemic
Oral				1,5 mg/kg bw/d				
Inhalation				2,6 mg/m3				14,8 mg/m3
Skin				1,5 mg/kg bw/d				4,2 mg/kg bw/d



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.

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

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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	Method:ISO 4925
Flammability	not available	
Lower explosive limit	not applicable	
Upper explosive limit	not applicable	
Flash point	> 125 °C	Method:ASTM D93 (closed cup)
Auto-ignition temperature	not available	
Decomposition temperature	not available	
pH	7,8	Method:ISO 4925



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Kinematic viscosity	not available	
Solubility	soluble	
Partition coefficient: n-octanol/water	not available	
Vapour pressure	not available	
Density and/or relative density	1,068 g/cm ³	Method:ASTM 1122
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.

Hygroscopic.

10.3. Possibility of hazardous reactions

See paragraph 10.1.

10.4. Conditions to avoid

Avoid overheating.

10.5. Incompatible materials



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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.

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

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)

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ATE (Dermal) of the mixture: Not classified (no significant component) tris[2-[2-(2-methoxyethoxy)ethoxy]ethyl] borate LD50 (Dermal): > 2000 mg/kg Rat LD50 (Oral): > 2000 mg/kg Rat 2-(2-(2-methoxyethoxy)ethoxy)ethanol LD50 (Dermal): 7,1 g/kg LD50 (Oral): > 10500 mg/kg DI-ISOPROPANOLAMINE LD50 (Oral): 6720 mg/kg 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 2,6-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 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
 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



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Rapidly degradable
DI-ISOPROPANOLAMINE

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

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

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.

The management of waste arising from the use or dispersal of this product must be organised in accordance with occupational safety regulations. See section 8 for possible need for PPE.

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

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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

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<u>Product</u> Point 3 <u>Contained substance</u> Point 75 <u>Regulation (EU) 2019/1148 - on the marketing and use of explosives precursors</u> not applicable <u>Substances in Candidate List (Art. 59 REACH)</u> On the basis of available data, the product does not contain any SVHC in percentage $\geq$ than 0,1%. <u>Substances subject to authorisation (Annex XIV REACH)</u> None <u>Substances subject to exportation reporting pursuant to Regulation (EU) 649/2012:</u> None <u>Substances subject to the Rotterdam Convention:</u> None <u>Substances subject to the Stockholm Convention:</u> None <u>Healthcare controls</u> 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 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. 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
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%
- 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

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



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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)

22. Delegated Regulation (UE) 2022/692 (XVIII Atp. CLP)

23. Delegated Regulation (UE) 2023/707

24. Delegated Regulation (UE) 2023/1434 (XIX Atp. CLP)

25. Delegated Regulation (UE) 2023/1435 (XX Atp. CLP)

26. Delegated Regulation (UE) 2024/197 (XXI 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.

msds for B2C.

Changes to previous review:

The following sections were modified:

01 / 03.