

Page 1 of 12 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II Revision date / version: 15.08.2016 / 0002 Replacing version dated / version: 25.03.2014 / 0001 Valid from: 15.08.2016 PDF print date: 15.08.2016 PAG ISO 100 YF 240 ml

### Safety data sheet according to Regulation (EC) No 1907/2006, Annex II

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

#### **1.1 Product identifier**

## PAG ISO 100 YF 240 ml

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

Refrigeration Lubrificant, A/C Lubricant, Compressor Lubricant, Lubricant Uses advised against: No information available at present.

# 1.3 Details of the supplier of the safety data sheet

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(GB)

Behr Hella Service GmbH, Dr.-Manfred-Behr-Str. 1, 74523 Schwäbisch Hall, Germany Phone: +49 (0) 7907 9446 483 31, Fax: +49 (0) 7907 9446 483 73

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

#### **1.4 Emergency telephone number**

Emergency information services / official advisory body:

# Telephone number of the company in case of emergencies:

+49 (0) 7907 9446 483 31

**SECTION 2: Hazards identification** 

#### 2.1 Classification of the substance or mixture Classification according to Regulation (EC) 1272/2008 (CLP) Hazard category

Hazard class Skin Sens. 1 3 Aquatic Chronic

Hazard statement H317-May cause an allergic skin reaction. H412-Harmful to aquatic life with long lasting effects.

2.2 Label elements Labeling according to Regulation (EC) 1272/2008 (CLP)





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H317-May cause an allergic skin reaction. H412-Harmful to aquatic life with long lasting effects.

P280-Wear protective gloves. P333+P313-If skin irritation or rash occurs: Get medical advice/attention.

p-tert-butylphenyl-1-(2,3-epoxy)propyl ether

#### 2.3 Other hazards

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The mixture does not contain any vPvB substance (vPvB = very persistent, very bioaccumulative) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

The mixture does not contain any PBT substance (PBT = persistent, bioaccumulative, toxic) or is not included under XIII of the regulation (EC) 1907/2006 (< 0,1 %).

#### **SECTION 3: Composition/information on ingredients**

#### 3.1 Substance

n.a. 3 2 Mixture

p-tert-butylphenyl-1-(2,3-epoxy)propyl ether		
Registration number (REACH)		
Index		
EINECS, ELINCS, NLP	221-453-2	
CAS	3101-60-8	
content %	1-2	
Classification according to Regulation (EC) 1272/2008 (CLP)	Skin Sens. 1, H317	
	Aquatic Chronic 2, H411	

2,6-Di-t-butyl-4-methyl-phenol	
Registration number (REACH)	
Index	
EINECS, ELINCS, NLP	204-881-4
CAS	128-37-0
content %	0,1-<1
Classification according to Regulation (EC) 1272/2008 (CLP)	Aquatic Acute 1, H400 (M=1)
	Aquatic Chronic 1, H410 (M=1)

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.

The substances named in this section are given with their actual, appropriate classification!

For substances that are listed in appendix VI, table 3.1/3.2 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

#### **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures

#### Inhalation

Remove person from danger area.

Supply person with fresh air and consult doctor according to symptoms.

#### Skin contact

Remove polluted, soaked clothing immediately, wash thoroughly with plenty of water and soap, in case of irritation of the skin (flare), consult a doctor.

#### Eye contact

Remove contact lenses.

Wash thoroughly for several minutes using copious water. Seek medical help if necessary.



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#### Ingestion

Rinse the mouth thoroughly with water. Do not induce vomiting. Consult doctor immediately.

Never pour anything into the mouth of an unconscious person!

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

If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1. In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours. The following may occur:

irritation of the eyes

Skin irritation possible with prolonged contact.

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

#### **SECTION 5: Firefighting measures**

#### 5.1 Extinguishing media

#### Suitable extinguishing media

Water jet spray / alcohol resistant foam / CO2 / dry extinguisher

#### Unsuitable extinguishing media

None known 5.2 Special hazards arising from the substance or mixture

#### In case of fire the following can develop: Oxides of carbon Toxic gases

#### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Protective respirator with independent air supply. According to size of fire Full protection, if necessary. Cool container at risk with water. Dispose of contaminated extinction water according to official regulations.

#### **SECTION 6: Accidental release measures**

#### 6.1 Personal precautions, protective equipment and emergency procedures

Ensure sufficient supply of air. Avoid contact with eyes or skin. If applicable, caution - risk of slipping.

#### **6.2 Environmental precautions**

If leakage occurs, dam up.

Resolve leaks if this possible without risk.

Prevent from entering drainage system.

Prevent surface and ground-water infiltration, as well as ground penetration.

If accidental entry into drainage system occurs, inform responsible authorities.

#### 6.3 Methods and material for containment and cleaning up

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth) and dispose of according to Section 13.

#### 6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

### **SECTION 7: Handling and storage**

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

#### 7.1 Precautions for safe handling

Ensure sufficient supply of air.



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Avoid contact with eyes. Avoid long lasting or intensive contact with skin. Eating, drinking, smoking, as well as food-storage, is prohibited in work-room. Observe directions on label and instructions for use.

#### 7.1.1 General recommendations

#### 7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

#### 7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.

Not to be stored in gangways or stair wells.

Store product closed and only in original packing. Store in a well-ventilated place.

Store cool.

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#### 7.3 Specific end use(s)

No information available at present.

#### **SECTION 8: Exposure controls/personal protection**

#### 8.1 Control parameters

<sup>(B)</sup> Chemical Name	2,6-Di-t-butyl-4-r	nethyl-phenol		Content %:0,1- <1
WEL-TWA: 10 mg/r	13	WEL-STEL:		
Monitoring procedure	:			
BMGV:			Other information: -	

WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.

\*\* = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.

2,6-Di-t-butyl-4-methyl-	phenol					
Area of application	Exposure route /	Effect on health	Descripto	Value	Unit	Note
	Environmental		r			
	compartment					
	Environment - soil		PNEC	1,04	mg/kg wwt	
	Environment - sewage		PNEC	100	mg/l	
	treatment plant				-	
	Environment - sediment		PNEC	1,29	mg/kg wwt	
	Environment - marine		PNEC	0,4	µg/l	
	Environment - periodic		PNEC	4	µg/l	
	release					
	Environment - freshwater		PNEC	4	µg/l	
	Environment - oral (animal		PNEC	16,7	mg/kg	
	feed)					
	Environment - soil		PNEC	1,23	mg/kg	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	1,74	mg/m3	
Consumer	Human - dermal	Long term, systemic	DNEL	5	mg/kg	
		effects			bw/d	



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Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	5,8	mg/m3	
Workers / employees	Human - dermal	Long term, systemic effects	DNEL	8,3	mg/kg bw/day	

#### 8.2 Exposure controls

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#### 8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction. If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn. Applies only if maximum permissible exposure values are listed here.

#### 8.2.2 Individual protection measures, such as personal protective equipment

General hygiene measures for the handling of chemicals are applicable.

Wash hands before breaks and at end of work.

Keep away from food, drink and animal feedingstuffs.

Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:

Tight fitting protective goggles (EN 166) with side protection, with danger of projections.

Skin protection - Hand protection:

Chemical resistant protective gloves (EN 374).

Protective hand cream recommended.

The breakthrough times determined in accordance with EN 374 Part 3 were not obtained under practical conditions. The recommended maximum wearing time is 50% of breakthrough time.

Skin protection - Other: Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).

Respiratory protection: Normally not necessary. In case of emergency: Protective respirator with independent air supply.

Thermal hazards: Not applicable

Additional information on hand protection - No tests have been performed.

In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents. Selection of materials derived from glove manufacturer's indications.

Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account. Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.

In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.

The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

#### 8.2.3 Environmental exposure controls

No information available at present.

#### **SECTION 9: Physical and chemical properties**

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

Physical state: Colour: Odour: Odour threshold: pH-value: roperties Liquid Yellow Characteristic Not determined n.a.



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Melting point/freezing point: Initial boiling point and boiling range: Flash point: Evaporation rate: Flammability (solid, gas): Lower explosive limit: Upper explosive limit: Vapour pressure: Vapour density (air = 1): Density: Bulk density: Solubility(ies): Water solubility: Partition coefficient (n-octanol/water): Auto-ignition temperature: Decomposition temperature: Viscosity: Explosive properties: Oxidising properties:

#### 9.2 Other information

Miscibility: Fat solubility / solvent: Conductivity: Surface tension: Solvents content:

<-25 °C (Not determined ) Not determined >230 °C Not determined Not determined Not determined Not determined Not determined Not determined 0,9895 g/cm3 (20°C) n.a. Not determined Insoluble Not determined Not determined Not determined 100 mm2/s Product is not explosive. No Not determined

Not determined Not determined Not determined Not determined

#### **SECTION 10: Stability and reactivity**

#### 10.1 Reactivity

The product has not been tested. **10.2 Chemical stability** Stable with proper storage and handling. 10.3 Possibility of hazardous reactions No dangerous reactions are known. 10.4 Conditions to avoid Heating, open flame, ignition sources **10.5 Incompatible materials** Avoid contact with strong oxidizing agents. Avoid contact with strong acids.

#### **10.6 Hazardous decomposition products**

No decomposition when used as directed.

**SECTION 11: Toxicological information** 

#### 11.1 Information on toxicological effects

Possibly more information on health effects, see Section 2.1 (classification).

Toxicity / effect	Endpoint	Value	Unit	Organism	Test method	Notes
Acute toxicity, by oral route:						n.d.a.
Acute toxicity, by dermal						n.d.a.
route:						
Acute toxicity, by inhalation:						n.d.a.
Skin corrosion/irritation:						n.d.a.
Serious eye						n.d.a.
damage/irritation:						



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					-		
Respiratory or skin							Sensitising
sensitisation:							(skin contact)
Germ cell mutagenicity:							n.d.a.
Carcinogenicity:							n.d.a.
Reproductive toxicity:							n.d.a.
Specific target organ toxicit	y -						n.d.a.
single exposure (STOT-SE	):						
Specific target organ toxicit							n.d.a.
repeated exposure (STOT-							
RE):							
Aspiration hazard:							n.d.a.
Symptoms:							n.d.a.
p-tert-butylphenyl-1-(2,3-e	epoxy)propyl	ether					
Toxicity / effect	Endpoin	t Valu	е	Unit	Organism	Test method	Notes
Acute toxicity, by oral route	: LD50	>200	0	mg/kg	Rat	OECD 425 (Acute	
						Oral Toxicity - Up-and-	
						Down Procedure)	
Acute toxicity, by dermal	LD50	>200	0	mg/kg	Rat	OECD 402 (Acute	
route:				00		Dermal Toxicity)	
	l			I		2/	1
2,6-Di-t-butyl-4-methyl-ph	enol						
Toxicity / effect	Endpoin			Unit	Organism	Test method	Notes
Acute toxicity, by oral route	: LD50	>500	0	mg/kg	Rat	OECD 401 (Acute	
						Oral Toxicity)	
Acute toxicity, by dermal	LD50	>500	0	mg/kg	Rabbit	OECD 402 (Acute	
route:						Dermal Toxicity)	
Skin corrosion/irritation:							Slightly irritant
Serious eye					Rabbit	(Draize-Test)	Slightly irritant
damage/irritation:							
Respiratory or skin					Human being		Not sensitizisin
sensitisation:							
Germ cell mutagenicity:						(Ames-Test)	Negative
Germ cell mutagenicity:					Mammalian		Negative
Reproductive toxicity:	NOAEL	100		mg/kg	Rat		
Specific target organ toxicit	y - NOEL	25		mg/kg	Rat		(28 d)
repeated exposure (STOT-	-						
RE):							
Symptoms:							mucous
							membrane
							irritation
	1	I		I	1		
				_			
		SECTIC	)N 12: I	Ecologi	cal information	on	
Possibly more information of	on environmer	tal effects	, see Sec	tion 2.1 (cla	assification).		
PAG ISO 100 YF 240 ml							
Toxicity / effect E	ndpoint	Time	Value	Unit	Organism	Test method	Notes

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:							n.d.a.
12.1. Toxicity to							n.d.a.
daphnia:							
12.1. Toxicity to algae:							n.d.a.
12.2. Persistence and	BOD		28	%			Not readily
degradability:							biodegradable
12.2. Persistence and	ThOD		16	%			Not readily
degradability:							biodegradable
12.3. Bioaccumulative							Not to be
potential:							expected



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12.4. Mobility in soil:		The product is water-soluble and can be dispersed in aqueous systems.
12.5. Results of PBT and vPvB assessment		n.d.a.
12.6. Other adverse effects:		n.d.a.

# p-tert-butylphenyl-1-(2,3-epoxy)propyl ether

Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	7,5	mg/l	Oncorhynchus	OECD 203	
				_	mykiss	(Fish, Acute	
						Toxicity Test)	
12.1. Toxicity to	EC50	48h	67,9	mg/l	Daphnia magna	OECD 202	
daphnia:				_		(Daphnia sp.	
						Acute	
						Immobilisation	
						Test)	
12.1. Toxicity to algae:	EC50	72h	9	mg/l	Pseudokirchnerie	OECD 201	
					lla subcapitata	(Alga, Growth	
						Inhibition Test)	

2,6-Di-t-butyl-4-methyl Toxicity / effect	Endpoint	Time	Value	Unit	Organism	Test method	Notes
12.1. Toxicity to fish:	LC50	96h	0,199	mg/l	Organishi	QSAR	Notes
12.1. Toxicity to fish:	NOEC/NOEL	42d	0,053	mg/l	Oryzias latipes	OECD 210 (Fish, Early-Life Stage Toxicity Test)	
12.1. Toxicity to daphnia:	EC50	48h	0,48	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to daphnia:	NOEC/NOEL	21d	0,023	mg/l	Daphnia magna	OECD 202 (Daphnia sp. Acute Immobilisation Test)	
12.1. Toxicity to algae:	EC50	72h	>0,4	mg/l	Scenedesmus subspicatus	OECD 201 (Alga, Growth Inhibition Test)	
12.1. Toxicity to algae:	NOEC/NOEL	72h	1	mg/l		OECD 201 (Alga, Growth Inhibition Test)	
12.2. Persistence and degradability:		28d	4,5	%		OECD 301 C (Ready Biodegradability - Modified MITI Test (I))	Not readily biodegradable
12.3. Bioaccumulative potential:			230- 2500		Cyprinus caprio	OECD 305 (Bioconcentration - Flow-Through Fish Test)	56d
12.3. Bioaccumulative potential:	Log Pow		5,1			,	



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12.5. Results of PBT and vPvB assessment Toxicity to bacteria: Other information:	EC50	3h	>10000	mg/l	activated sludge	No PBT substance Does not contain any organically bound halogens which can contribute to the AOX value in waste water.
Water solubility:			0,00076	g/l		

#### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

#### For the substance / mixture / residual amounts

EC disposal code no.:

The waste codes are recommendations based on the scheduled use of this product.

Owing to the user's specific conditions for use and disposal, other waste codes may be

allocated under certain circumstances. (2014/955/EU)

13 02 06 synthetic engine, gear and lubricating oils

Recommendation:

Sewage disposal shall be discouraged.

Pay attention to local and national official regulations.

E.g. suitable incineration plant.

#### For contaminated packing material

Pay attention to local and national official regulations.

Empty container completely.

Uncontaminated packaging can be recycled.

Dispose of packaging that cannot be cleaned in the same manner as the substance.

#### **SECTION 14: Transport information**

#### General statements

14.1. UN number:	n.a.
Transport by road/by rail (ADR/RID)	
14.2. UN proper shipping name:	
14.3. Transport hazard class(es):	n.a.
14.4. Packing group:	n.a.
Classification code:	n.a.
LQ (ADR 2015):	n.a.
14.5. Environmental hazards:	Not applicable
Tunnel restriction code:	
Transport by sea (IMDG-code)	
14.2. UN proper shipping name:	
14.3. Transport hazard class(es):	n.a.
14.4. Packing group:	n.a.
Marine Pollutant:	n.a
14.5. Environmental hazards:	Not applicable
Transport by air (IATA)	
14.2. UN proper shipping name:	
14.3. Transport hazard class(es):	n.a.
14.4. Packing group:	n.a.



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#### 14.5. Environmental hazards:

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14.6. Special precautions for user

Unless specified otherwise, general measures for safe transport must be followed.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Non-dangerous material according to Transport Regulations.

**SECTION 15: Regulatory information** 

Not applicable

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

For classification and labelling see Section 2. Observe restrictions: Comply with trade association/occupational health regulations. Directive 2010/75/EU (VOC):

#### 15.2 Chemical safety assessment

A chemical safety assessment is not provided for mixtures.

#### **SECTION 16: Other information**

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Revised sections:

These details refer to the product as it is delivered. Employee instruction/training in handling hazardous materials is required.

# Classification and processes used to derive the classification of the mixture in accordance with the ordinance (EG) 1272/2008 (CLP):

Classification in accordance with regulation	Evaluation method used
(EC) No. 1272/2008 (CLP)	
Skin Sens. 1, H317	Classification according to calculation procedure.
Aquatic Chronic 3, H412	Classification according to calculation procedure.

The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3). H317 May cause an allergic skin reaction.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H411 Toxic to aquatic life with long lasting effects.

Skin Sens. — Skin sensitization Aquatic Chronic — Hazardous to the aquatic environment - chronic Aquatic Acute — Hazardous to the aquatic environment - acute

#### Any abbreviations and acronyms used in this document:

AC Article Categories acc., acc. to according, according to ACGIHAmerican Conference of Governmental Industrial Hygienists ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road) AOEL Acceptable Operator Exposure Level AOX Adsorbable organic halogen compounds approx. approximately Art., Art. no. Article number ATE Acute Toxicity Estimate according to Regulation (EC) 1272/2008 (CLP)

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œ Page 12 of 12 Safety data sheet according to Regulation (EC) No 1907/2006, Annex II Revision date / version: 15.08.2016 / 0002 Replacing version dated / version: 25.03.2014 / 0001 Valid from: 15.08.2016 PDF print date: 15.08.2016 PAG ISO 100 YF 240 ml LOEC Lowest Observed Effect Concentration LOEL Lowest Observed Effect Level Limited Quantities LQ International Convention for the Prevention of Marine Pollution from Ships MARPOL n.a. not applicable not available n.av. not checked n.c. n.d.a. no data available NIOSHNational Institute of Occupational Safety and Health (United States of America) No Observed Adverse Effective Concentration NOAEC No Observed Adverse Effect Level NOAFI NOEC No Observed Effect Concentration NOEL No Observed Effect Level ODP Ozone Depletion Potential OECD Organisation for Economic Co-operation and Development org. organic PAH polycyclic aromatic hydrocarbon persistent, bioaccumulative and toxic PBT PC Chemical product category ΡE Polyethylene PNEC Predicted No Effect Concentration POCP Photochemical ozone creation potential ppm parts per million **PROC Process category** PTFE Polytetrafluorethylene Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning REACH the Registration, Evaluation, Authorisation and Restriction of Chemicals) REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT. RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail) SADT Self-Accelerating Decomposition Temperature SAR Structure Activity Relationship SU Sector of use SVHC Substances of Very High Concern Tel. Telephone ThOD Theoretical oxygen demand TOC Total organic carbon TRGS Technische Regeln für Gefahrstoffe (=Technical Regulations for Hazardous Substances) United Nations Recommendations on the Transport of Dangerous Goods **UN RTDG** VbF Verordnung über brennbare Flüssigkeiten (= Regulation for flammable liquids (Austria)) Volatile organic compounds VOC vPvB very persistent and very bioaccumulative WEL-TWA, WEL-STEL WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period), WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period) (EH40, UK). WHO World Health Organization wet weight wwt The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge. No responsibility.

These statements were made by:

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