

**SAFETY DATA SHEET**

ISSUE DATE: 30.03.2017

according to Regulation (EU) 2015/830

VERSION: 1.0

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

**1.1. Product identifier**

<b>Trade name</b>	Waeco Daphne Hermetic Oil 1234yf
<b>Product code</b>	No data available.
<b>SDS Number</b>	217
<b>Product use</b>	Professional use

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

<b>Relevant identified uses</b>	Compressor oil for air conditioning systems
<b>Uses advised against</b>	No additional information available.

**1.3. Details of the supplier of the safety data sheet**

**Supplier**

DOMETIC WAECO INTERNATIONAL  
GMBH  
Hollefeldstraße 63  
D-48282 Emsdetten  
Tel +49 (0) 2572 879-0  
Fax +49 (0) 2572 879-300  
Mail info@dometic-waeco.de

**1.4. Emergency telephone number**

+49 (172) 3180-285 (Mo- Fr. 08:00 - 18:00 CET)

**2. SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

**Classification according to Regulation (EC) No. 1272/2008**

<b>Health hazards</b>	Skin sensitisation, Category 1	H317	May cause an allergic skin reaction.
<b>Environmental hazards</b>	Hazardous to the aquatic environment — Acute Hazard, Category 1	H400	Very toxic to aquatic life.
	Hazardous to the aquatic environment — Chronic Hazard, Category 2	H411	Toxic to aquatic life with long lasting effects.

**2.2. Label elements**

**Labelling according to Regulation (EC) No. 1272/2008**

**Hazard pictograms**



<b>Signal word</b>	Warning
<b>Contains</b>	Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-methyl-.omega.-methoxy-
<b>Hazard statements</b>	
H317	May cause an allergic skin reaction.
H400	Very toxic to aquatic life.

H411	Toxic to aquatic life with long lasting effects.
<b>Precautionary statements</b>	
<b>Prevention</b>	
P273	Avoid release to the environment.
P280	Wear protective gloves.
<b>Response</b>	
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.
<b>Supplemental hazard information</b>	
EUH205	Contains epoxy constituents. May produce an allergic reaction

### 2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII.

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII.

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

### 3.2. Mixtures

Chemical name	CAS- No EC- No Index No RRN	%	Classification according to Regulation (EC) No. 1272/2008	Notes
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-methyl-.omega.-methoxy-	24991-61-5	50 - < 100	Skin Sens. 1, H317	
Decyloxirane	2855-19-8 220-667-3 01-2119943390-42-xxxx	1 - < 2	Skin Irrit. 2, H315 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410	
Dodecyloxirane	3234-28-4 221-781-6 01-2119943387-29-XXXX	1 - < 2	Skin Irrit. 2, H315 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=10)	
Tris(methylphenyl) phosphate	1330-78-5 215-548-8	0.1 - < 1	Repr. 2, H361 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	
2,6-di-tert-butyl-p-cresol	128-37-0 204-881-4	0.1 - < 1	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	

Full text of H-statements: see section 16

## 4. SECTION 4: First aid measures

### 4.1. Description of first aid measures

<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
<b>Inhalation</b>	Remove person to fresh air and keep comfortable for breathing.
<b>Skin contact</b>	Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
<b>Eyes contact</b>	Rinse eyes with water as a precaution. Seek medical attention if irritation develops.
<b>Ingestion</b>	Do NOT induce vomiting. Rinse mouth. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after skin contact      May cause an allergic skin reaction.

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

Treat symptomatically.

### 5. SECTION 5: Fire-fighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media      Water spray. Dry powder. Foam. Carbon dioxide.

Unsuitable extinguishing media      Do not use water jet as an extinguisher, as this will spread the fire.

#### 5.2. Special hazards arising from the substance or mixture

Hazardous combustion products      During fire, gases hazardous to health may be formed. Carbon oxides (CO, CO<sub>2</sub>).

#### 5.3. Advice for firefighters

Firefighting instructions      Move containers from fire area if it can be done without personal risk.

Protection during firefighting      Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### 6. SECTION 6: Accidental release measures

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

For non-emergency personnel

Emergency procedures      Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the MSDS.

For emergency responders

Protective equipment      Wear recommended personal protective equipment.

Emergency procedures      Keep unnecessary personnel away. For personal protection, see section 8 of the MSDS.

#### 6.2. Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Avoid discharge into drains, water courses or onto the ground.

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

Methods for cleaning up      Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small spills: Take up liquid spill into absorbent material. Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use.

Other information      The product is immiscible with water and will spread on the water surface. Prevent entry into waterways, sewer, basements or confined areas.

#### 6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For disposal of residues refer to section 13: "Disposal considerations".

### 7. SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling      Ensure good ventilation of the work station. Avoid contact with skin and eyes. Avoid breathing mist, vapours. Wear personal protective equipment. Protect material from direct sunlight. Observe good industrial hygiene practices.

**Hygiene measures** Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

**Storage conditions** Store tightly closed in a dry, cool and well-ventilated place. Protect from sunlight. Use care in handling/storage.

**7.3. Specific end use(s)** Compressor oil for air conditioning systems.

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

### 8.1. Control parameters

#### Ireland

Regulation	Substance	Type	Value
Code of Practice for the Chemical Agents Regulations 2016	<b>2,6-di-tert-butyl-p-cresol (128-37-0)</b> 2,6-Ditertiary-butyl-para- cresol	OEL (8 hours ref)	10 mg/m <sup>3</sup>

#### **DNEL: Derived no effect level**

Components	Type	Route	Value	Form
Decyloxirane (2855-19-8)	Worker	Dermal	10.4 mg/kg bodyweight/day	Long-term - systemic effects
		Inhalation	36.7 mg/m <sup>3</sup>	Long-term - systemic effects
	Consumer	Oral	6.25 mg/kg bodyweight/day	Long-term - systemic effects
		Inhalation	10.9 mg/m <sup>3</sup>	Long-term - systemic effects
Dodecyloxirane (3234-28-4)	Worker	Dermal	10.4 mg/kg bodyweight/day	Long-term - systemic effects
		Inhalation	36.7 mg/m <sup>3</sup>	Long-term - systemic effects
	Consumer	Oral	6.25 mg/kg bodyweight/day	Long-term - systemic effects
		Inhalation	10.9 mg/m <sup>3</sup>	Long-term - systemic effects
		Dermal	6.25 mg/kg bodyweight/day	Long-term - systemic effects

#### **PNEC: Predicted no effect concentration**

Components	Type	Route	Value	Form
Decyloxirane (2855-19-8)	Not applicable.	Freshwater	0.0056 µg/L	
		Seawater	0.006 µg/L	
Dodecyloxirane (3234-28-4)	Not applicable.	Freshwater	0.0056 µg/L	
		Seawater	0.006 µg/L	
		STP	2.61 mg/l	

### 8.2. Exposure controls

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level

**Materials for protective clothing** Wear suitable protective clothing

**Individual protection measures, such as personal protective equipment (PPE)**

**Eye protection** Safety glasses with side shields

**Skin protection**

**Hand protection** Nitrile gloves are recommended

Material	Permeation	Thickness (mm)	Comments
Nitrile rubber (NBR)		> 0.3 mm	EN 374

<b>Other protective measures</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.
<b>Respiratory protection</b>	Not normally needed. In case of insufficient ventilation, wear suitable respiratory equipment
<b>Thermal hazard protection</b>	Wear appropriate thermal protective clothing, when necessary.
<b>Environmental exposure controls</b>	Inform appropriate managerial or supervisory personnel of all environmental releases.

## 9. SECTION 9: Physical and chemical properties

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

<b>Physical state</b>	Liquid
<b>Appearance</b>	Clear.
<b>Colour</b>	Colourless.
<b>Odour</b>	Slight.
<b>Odour threshold</b>	No data available.
<b>pH</b>	No data available.
<b>Relative evaporation rate (butylacetate=1)</b>	No data available.
<b>Melting point</b>	Not applicable.
<b>Freezing point</b>	No data available.
<b>Boiling point</b>	No data available.
<b>Flash point</b>	170 °C
<b>Auto-ignition temperature</b>	No data available.
<b>Decomposition temperature</b>	No data available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Vapour pressure</b>	No data available.
<b>Relative vapour density at 20 °C</b>	No data available.
<b>Relative density</b>	No data available.
<b>Density</b>	0.9882 g/cm <sup>3</sup>
<b>Solubility</b>	Insoluble.
<b>Log Pow</b>	No data available.
<b>Viscosity, kinematic</b>	42.66 mm <sup>2</sup> /s @40°C 9.512 mm <sup>2</sup> /s @100°C
<b>Viscosity, dynamic</b>	No data available.
<b>Explosive properties</b>	No data available.
<b>Oxidising properties</b>	No data available.
<b>Explosive limits</b>	No data available.

### 9.2. Other information

<b>Pour point</b>	- 47.5 °C
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## 10. SECTION 10: Stability and reactivity

<b>10.1. Reactivity</b>	The product is non-reactive under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reactions known under normal conditions of use.
<b>10.4. Conditions to avoid</b>	Heat. Sparks. Open flame.
<b>10.5. Incompatible materials</b>	Strong oxidizing agents. Strong bases.

**10.6. Hazardous decomposition products** Irritating and/or toxic fumes and gases may be emitted upon the products decomposition.

## 11. SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

<b>Acute toxicity</b>	Based on available data, the classification criteria are not met.
<b>Skin corrosion/irritation</b>	Based on available data, the classification criteria are not met.
<b>Serious eye damage/irritation</b>	Based on available data, the classification criteria are not met.
<b>Respiratory or skin sensitisation</b>	May cause an allergic skin reaction Contains epoxy constituents. May produce an allergic reaction
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b>	Based on available data, the classification criteria are not met.
<b>Reproductive toxicity</b>	Based on available data, the classification criteria are not met.
<b>STOT-single exposure</b>	Based on available data, the classification criteria are not met.
<b>STOT-repeated exposure</b>	Based on available data, the classification criteria are not met.
<b>Aspiration hazard</b>	Based on available data, the classification criteria are not met.

## 12. SECTION 12: Ecological information

### 12.1. Toxicity

**Ecology - general** Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

#### Acute aquatic toxicity

Substance / Product	Trophic level	Species	Type	Value	Duration	Remarks
2,6-di-tert-butyl-p-cresol (128-37-0)	crustacea	Daphnia magna	EC50	0.48 mg/l	48 hours	
	Fish	Danio rerio	LC0	> 0.5 mg/l	96 hours	
Decyloxirane (2855-19-8)	algae	Pseudokirchnerella subcapitata	EC50	0.056 mg/l	72 hours	(OECD 201 method)
	crustacea	Daphnia magna	EC50	0.171 mg/l	48 hours	(OECD 202 method)
Dodecyloxirane (3234-28-4)	algae	Pseudokirchnerella subcapitata	EC50	0.002 mg/l	72 hours	(OECD 201 method)
Tris(methylphenyl) phosphate (1330-78-5)	Fish	Oncorhynchus mykiss (Rainbow trout)	LC50	0.21 - 0.32 mg/l	96 hours	

#### Chronic aquatic toxicity

Substance / Product	Trophic level	Species	Type	Value	Duration	Remarks
Dodecyloxirane (3234-28-4)	algae	Pseudokirchnerella subcapitata	NOEC	0.002 mg/l	72 hours	

### 12.2. Persistence and degradability

#### Decyloxirane (2855-19-8)

**Biodegradation** 60 - 70 % 28 d (OECD 301 B)

#### Dodecyloxirane (3234-28-4)

**Biodegradation** >= 60 - 70 % (OECD 301 B)

### 12.3. Bioaccumulative potential

#### Decyloxirane (2855-19-8)

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Log Pow	5.9 @ 25 °C
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#### Dodecyloxirane (3234-28-4)

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Log Kow	5.77 @ 25 °C
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#### Tris(methylphenyl) phosphate (1330-78-5)

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Log Kow	5.11
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### 12.4. Mobility in soil

No additional information available.

### 12.5. Results of PBT and vPvB assessment

#### Waeco Daphne Hermetic Oil 1234yf

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This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII.

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII.

### 12.6. Other adverse effects

No additional information available.

## 13. SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Regional legislation (waste)

Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions) . Dispose of in accordance with local regulations.

#### Waste treatment methods

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with licensed collector's sorting instructions.

#### Product/Packaging disposal recommendations

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken for recycling, recovery or waste in accordance with local regulation.

#### Additional information

Dispose in accordance with all applicable regulations.

#### European List of Waste (LoW) code

13 02 08\*

other engine, gear and lubricating oils

15 01 10\*

packaging containing residues of or contaminated by dangerous substances

## 14. SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

UN-No. (ADR)	3082
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UN-No. (IMDG)	3082
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UN-No. (IATA)	3082
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UN-No. (ADN)	3082
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UN-No. (RID)	3082
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### 14.2. UN proper shipping name

Proper Shipping Name (ADR)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Decyloxirane, Dodecyloxirane)
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Proper Shipping Name (IMDG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Decyloxirane, Dodecyloxirane)
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<b>Proper Shipping Name (IATA)</b>	Environmentally hazardous substance, liquid, n.o.s. (Decyloxirane, Dodecyloxirane)
<b>Proper Shipping Name (ADN)</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Decyloxirane, Dodecyloxirane)
<b>Proper Shipping Name (RID)</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Decyloxirane, Dodecyloxirane)
<b>14.3. Transport hazard class(es)</b>	
<b>ADR</b>	
Transport hazard class(es) (ADR)	9
Danger labels (ADR)	9
<b>IMDG</b>	
Transport hazard class(es) (IMDG)	9
Danger labels (IMDG)	9
<b>IATA</b>	
Transport hazard class(es) (IATA)	9
Hazard labels (IATA)	9
<b>ADN</b>	
Transport hazard class(es) (ADN)	9
Danger labels (ADN)	9
<b>RID</b>	
Transport hazard class(es) (RID)	9
Danger labels (RID)	9
<b>14.4. Packing group</b>	
Packing group (ADR)	III
Packing group (IMDG)	III
Packing group (IATA)	III
Packing group (ADN)	III
Packing group (RID)	III
<b>14.5. Environmental hazards</b>	
Dangerous for the environment	Yes
Marine pollutant	Yes
Other information	No supplementary information available.
<b>14.6. Special precautions for user</b>	
<b>Overland transport</b>	
Classification code (ADR)	M6
Special provisions (ADR)	274, 335, 601, 375
Limited quantities (ADR)	5I
Packing instructions (ADR)	P001, IBC03, LP01, R001
Hazard identification number (Kemler No.)	90
Tunnel restriction code (ADR)	E
<b>Transport by sea</b>	
Special provisions (IMDG)	274, 335, 969
Limited quantities (IMDG)	5 L
Packing instructions (IMDG)	P001, LP01
EmS-No. (Fire)	F-A



EmS-No. (Spillage)	S-F
Stowage category (IMDG)	A
<b>Air transport</b>	
PCA Excepted quantities (IATA)	E1
PCA Limited quantities (IATA)	Y964
PCA limited quantity max net quantity (IATA)	30kgG
PCA packing instructions (IATA)	964
PCA max net quantity (IATA)	450L
CAO packing instructions (IATA)	964
CAO max net quantity (IATA)	450L
Special provisions (IATA)	A97, A158, A197
ERG code (IATA)	9L

**Inland waterway transport**

Classification code (ADN)	M6
Special provisions (ADN)	274, 335, 375, 601
Limited quantities (ADN)	5 L
Carriage permitted (ADN)	T

**Rail transport**

Classification code (RID)	M6
Special provisions (RID)	274, 335, 375, 601
Limited quantities (RID)	5L
Packing instructions (RID)	P001, IBC03, LP01, R001
Hazard identification number (RID)	90

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

Not applicable.

**15. SECTION 15: Regulatory information**

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

**EU-Regulations**

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

**Seveso Information** E1

**National regulations**

No additional information available.

**15.2. Chemical safety assessment**

No chemical safety assessment has been carried out.

**16. SECTION 16: Other information**

**Indication of changes**

None.

**Abbreviations and acronyms**

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road.
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008.

IATA	International Air Transport Association.
IMDG	International Maritime Dangerous Goods.
PBT	Persistent Bioaccumulative Toxic.
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail.
SDS	Safety Data Sheet.
vPvB	Very Persistent and Very Bioaccumulative.
DNEL	Derived-No Effect Level.
PNEC	Predicted No-Effect Concentration.
OEL	Occupational Exposure Limit.

**Data sources** REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006..

**Training advice** Normal use of this product shall imply use in accordance with the instructions on the packaging.

#### Full text of H- and EUH-statements

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Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1.
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1.
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2.
Repr. 2	Reproductive toxicity, Category 2.
Skin Irrit. 2	Skin corrosion/irritation, Category 2.
Skin Sens. 1	Skin sensitisation, Category 1.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H361	Suspected of damaging fertility or the unborn child.
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.
EUH205	Contains epoxy constituents. May produce an allergic reaction.

#### Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

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Skin Sens. 1	H317	Calculation method
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 2	H411	Calculation method

*The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.*