

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

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

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

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

1.3. Details of the supplier of the safety data sheet

Supplier	Distributor
DOMETIC WAECO INTERNATIONAL GMBH Hollefeldstraße 63 D-48282 Emsdetten Tel +49 (0) 2572 879-0 Fax +49 (0) 2572 879-300 Mail info@dometric-waeco.de	DOMETIC UK LTD. Dometric House, The Brewery, Blandford St. Mary Dorset DT11 9LS Tel +44 344 626 0133 Fax +44 344 626 0143 Mail automotive@dometric.co.uk

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

Health hazards	Skin sensitisation, Category 1	H317	May cause an allergic skin reaction.
Environmental hazards	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



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

H411	Toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	
P273	Avoid release to the environment.
P280	Wear protective gloves.
Response	
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P391	Collect spillage.
Supplemental hazard information	
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

General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
Inhalation	Remove person to fresh air and keep comfortable for breathing.
Skin contact	Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
Eyes contact	Rinse eyes with water as a precaution. Seek medical attention if irritation develops.
Ingestion	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, CO₂).

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

United Kingdom

Regulation	Substance	Type	Value
EH40. HSE	2,6-di-tert-butyl-p-cresol (128-37-0) 2,6-Di-tert-butyl-p-cresol	WEL TWA	10 mg/m ³

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 ³	Long-term - systemic effects
	Consumer	Oral	6.25 mg/kg bodyweight/day	Long-term - systemic effects
		Inhalation	10.9 mg/m ³	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 ³	Long-term - systemic effects
	Consumer	Oral	6.25 mg/kg bodyweight/day	Long-term - systemic effects
		Inhalation	10.9 mg/m ³	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

Other protective measures	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.
Respiratory protection	Not normally needed. In case of insufficient ventilation, wear suitable respiratory equipment
Thermal hazard protection	Wear appropriate thermal protective clothing, when necessary.
Environmental exposure controls	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

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

9.2. Other information

Pour point	- 47.5 °C
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10. SECTION 10: Stability and reactivity

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

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

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

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

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

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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Proper Shipping Name (IATA)	Environmentally hazardous substance, liquid, n.o.s. (Decyloxirane, Dodecyloxirane)
Proper Shipping Name (ADN)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Decyloxirane, Dodecyloxirane)
Proper Shipping Name (RID)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Decyloxirane, Dodecyloxirane)
14.3. Transport hazard class(es)	
ADR	
Transport hazard class(es) (ADR)	9
Danger labels (ADR)	9
IMDG	
Transport hazard class(es) (IMDG)	9
Danger labels (IMDG)	9
IATA	
Transport hazard class(es) (IATA)	9
Hazard labels (IATA)	9
ADN	
Transport hazard class(es) (ADN)	9
Danger labels (ADN)	9
RID	
Transport hazard class(es) (RID)	9
Danger labels (RID)	9
14.4. Packing group	
Packing group (ADR)	III
Packing group (IMDG)	III
Packing group (IATA)	III
Packing group (ADN)	III
Packing group (RID)	III
14.5. Environmental hazards	
Dangerous for the environment	Yes
Marine pollutant	Yes
Other information	No supplementary information available.
14.6. Special precautions for user	
Overland transport	
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
Transport by sea	
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
Air transport	
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

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]

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.