

**1. SECTION 1: Identification : Product identifier and chemical identity**

**1.1. Product identifier**

**Trade name** Waeco Daphne Hermetic Oil 1234yf  
**SDS Number** 217

**1.2. Recommended uses and restrictions**

**Recommended use** Compressor oil for air conditioning systems  
**Restrictions on use** None known

**1.3. Supplier information**

<b>Supplier</b>	<b>Distributor</b>
DOMETIC WAECO INTERNATIONAL	DOMETIC AUSTRALIA PTY. LTD.
GMBH	1 John Duncan Court
Hollefeldstraße 63	Varsity Lakes QLD 4227
D-48282 Emsdetten	Tel +61 7 55076000
Tel +49 (0) 2572 879-0	Fax +61 7 55076001
Fax +49 (0) 2572 879-300	Mail sales@dometic-waeco.com.au
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 hazardous chemical**

**Classification (GHS-AU)**  
 Skin Sens. 1 H317

**2.2. Label elements**

**Hazard pictograms**



GHS07

**Signal word**

Warning

**Contains**

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-methyl-.omega.-methoxy-

**Hazard statements**

H317 May cause an allergic skin reaction

**Precautionary statements**

**Prevention**

P261 Avoid breathing mist, vapours, spray.

P280 Wear protective gloves.

**Response**

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P363 Wash contaminated clothing before reuse.

**Disposal**

P501 Dispose of contents/container to an approved waste disposal plant.

### 2.3. Other hazards

**Other hazards not contributing to the classification**

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

Chemical name	CAS- No	%	Classification according to the United Nations GHS (Rev. 4, 2011)	Notes
Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-methyl-.omega.-methoxy-	24991-61-5	50 - < 100	Skin Sens. 1, H317	
Decyloxirane	2855-19-8	1 - < 2	Skin Irrit. 2, H315	
Dodecyloxirane	3234-28-4	1 - < 2	Skin Irrit. 2, H315	
Tris(methylphenyl) phosphate	1330-78-5	0.1 - < 1	Repr. 2, H361	

## 4. SECTION 4: First aid measures

### 4.1. Description of first aid measures

**General**

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 with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention.

**Eyes contact**

Rinse immediately with plenty of water. If eye irritation persists: Get medical advice/attention. Remove contact lenses, if present and easy to do. Continue rinsing.

**Ingestion**

Do NOT induce vomiting. Rinse mouth. Call a POISON CENTER or doctor/physician if you feel unwell.

### 4.2. Symptoms caused by exposure

**Symptoms/effects after skin contact**

May cause an allergic skin reaction.

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

**Other medical advice or treatment**

Treat symptomatically.

## 5. SECTION 5: Fire-fighting measures

### 5.1. Extinguishing media

**Suitable extinguishing media**

Water spray. Dry powder. Carbon dioxide. Foam.

**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

No additional information available.

### 5.3. Special protective equipment and precautions for fire fighters

**Firefighting instructions**

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

**Hazchemcode**

2[Z]

**Protection during firefighting**

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

## 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.

## 7. SECTION 7: Handling and storage, including how the chemical may be safely used

### 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.

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

**Storage conditions** Keep cool. Protect from sunlight. Store in a dry place. Store in a closed container.

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

### 8.1. Control parameters - exposure standards

No additional information available.

### 8.2. Monitoring

No additional information available.

### 8.3. Appropriate engineering 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.

### 8.4. Personal protective equipment

**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		Nitrile gloves are recommended		
Hand protection		Nitrile gloves are recommended		
Material	Permeation	Thickness (mm)	Penetration	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

### Appearance

Physical state	Liquid..
Colour	Colourless
Odour	Slight
Odour threshold	No data available.
pH	No data available.
Relative evaporation rate (butylacetate=1)	No data available.
Melting point / Freezing point	Melting point : Not applicable.
Boiling point	No data available.
Flash point	170 °C
Auto-ignition temperature	No data available.
Flammability (solid, gas)	No data available.
Vapour pressure	No data available.
Relative density	No data available.
Density	Density : 0.9882 g/cm <sup>3</sup>
Solubility	Insoluble.
Log Pow	No data available.
Viscosity	Viscosity, kinematic : 42.66 mm <sup>2</sup> /s @40°C
Explosive properties	No data available.
Explosive limits	No data available.
Minimum ignition energy	No data available.
Fat solubility	No data available.
Pour point	- 47.5 °C

## 10. SECTION 10: Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport. The product is non-reactive under normal conditions of use, storage and transport
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous reactions known under normal conditions of use.
Conditions to avoid	Heat. Sparks. Open flame.
Incompatible materials	Strong oxidizing agents. Strong bases.
Hazardous decomposition products	Irritating and/or toxic fumes and gases may be emitted upon the products decomposition.

## 11. SECTION 11: Toxicological information

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified

<b>Skin corrosion/irritation</b>	Not classified
<b>Serious eye damage/irritation</b>	Not classified
<b>Respiratory or skin sensitisation</b>	May cause an allergic skin reaction.
<b>Germ cell mutagenicity</b>	Not classified
<b>Carcinogenicity</b>	Not classified
<b>Reproductive toxicity</b>	Not classified
<b>STOT-single exposure</b>	Not classified
<b>STOT-repeated exposure</b>	Not classified
<b>Aspiration hazard</b>	Not classified

#### Waeco Daphne Hermetic Oil 1234yf

<b>Viscosity, kinematic</b>	42.66 mm <sup>2</sup> /s @40°C
<b>Density</b>	0.9882 g/cm <sup>3</sup>
<b>Viscosity, kinematic</b>	42.66 mm <sup>2</sup> /s @40°C

## 12. SECTION 12: Ecological information

According to the National Code of Practice for the Preparation of Material Safety Data Sheets, Environmental classification information is not mandatory. Information relevant for GHS classification is available on request

### 12.1. Ecotoxicity

<b>Acute aquatic toxicity</b>	Very toxic to aquatic life
<b>Chronic aquatic toxicity</b>	Very 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	
2,6-di-tert-butyl-p-cresol (128-37-0)	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)
Decyloxirane (2855-19-8)	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** See section 12.1 on ecotoxicology

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

**Log Kow** See section 12.1 on ecotoxicology

#### Tris(methylphenyl) phosphate (1330-78-5)

**Log Kow** See section 12.1 on ecotoxicology

## 12.4. Mobility in soil

### Decyloxirane (2855-19-8)

Log Pow See section 12.1 on ecotoxicology

### Dodecyloxirane (3234-28-4)

Log Kow See section 12.1 on ecotoxicology

### Tris(methylphenyl) phosphate (1330-78-5)

Log Kow See section 12.1 on ecotoxicology

## 12.5. Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this product.

### Waeco Daphne Hermetic Oil 1234yf

GWPmix comment No known effects from this product.

## 13. SECTION 13: Disposal considerations

<b>Regional legislation (waste)</b>	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.
<b>Waste treatment methods</b>	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.
<b>Product/Packaging disposal recommendations</b>	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.
<b>Additional information</b>	Dispose in accordance with all applicable regulations.

## 14. SECTION 14: Transport information

### 14.1. UN number

UN-No. (ADG)	3082
UN-No. (IMDG)	3082
UN-No. (IATA)	3082

### 14.2. Proper Shipping Name - Addition

Proper Shipping Name (ADG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Decyloxirane, Dodecyloxirane)
Proper Shipping Name (IMDG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Decyloxirane, Dodecyloxirane)
Proper Shipping Name (IATA)	Environmentally hazardous substance, liquid, n.o.s. (Decyloxirane, Dodecyloxirane)

### 14.3. Transport hazard class(es)

<b>ADG</b>	
Transport hazard class(es) (ADG)	9
Danger labels (ADG)	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

### 14.4. Packing group

Packing group (ADG)	III
---------------------	-----

Packing group (IMDG)	III
Packing group (IATA)	III
<b>14.5. Environmental hazards</b>	
Marine pollutant	Yes
Dangerous for the environment	Yes
<b>14.6. Special precautions for user</b>	
Specific storage requirement	No data available.
Shock sensitivity	No data available.
<b>14.7. Additional information</b>	
Other information	No supplementary information available.
<b>Transport by road and rail</b>	
UN-No. (ADG)	3082
Transport regulations (ADG)	Subject to the provisions
Special provision (ADG)	179, 274, 331, 335, AU01
Limited quantities (ADG)	5I
Packing instructions (ADG)	P001, IBC03, LP01
Special packing provisions (ADG)	PP1
Portable tank and bulk container instructions (ADG)	T4
Portable tank and bulk container special provisions (ADG)	TP1, TP29
<b>Transport by sea</b>	
UN-No. (IMDG)	3082
Special provisions (IMDG)	274, 335, 969
Limited quantities (IMDG)	5 L
Packing instructions (IMDG)	P001, LP01
EmS-No. (Fire)	F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE
EmS-No. (Spillage)	S-F - SPILLAGE SCHEDULE Foxtrot - WATER-SOLUBLE MARINE POLLUTANTS
Stowage category (IMDG)	A
<b>Air transport</b>	
UN-No. (IATA)	3082
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
<b>14.8. Hazchem or Emergency Action Code</b>	
Hazchemcode	2[Z]
<b>15. SECTION 15: Regulatory information</b>	
<b>15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
No additional information available.	

## 15.2. International agreements

No additional information available.

## 16. SECTION 16: Any other relevant 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.

### Classification

---

Skin Sens. 1	H317
Aquatic Chronic 1	H410

### Full text of H-statements:

---

Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1.
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.
H410	Very toxic to aquatic life with long lasting effects.

*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.*