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

1.1. Product identifier

Product Code 3245085000
Product name DAPHNE HERMETIC OIL FVC32D - 160HV

Pure substance/mixture mixture

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

Recommended Use lubricant
Uses advised against Not Applicable

1.3. Details of the supplier of the safety data sheet

Manufacturer
Idemitsu Kosan Co., Ltd.
1-1 3-Chome
Marunouchi
Chiyoda-ku Tokyo, 100-8321, Japan
Telephone: +81-3-3213-3143
Fax: +81-3-3211-5343

Supplier
Idemitsu Lube Europe GmbH
Elberfelder Strasse 2
40213 Duesseldorf, Germany
Telephone: +49-211-175-4370
Fax: +49-211-830-2853

For further information, please contact

1.4. Emergency telephone number

Emergency Telephone Idemitsu Lube Europe GmbH : +49-211-175-4370

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008
Chronic aquatic toxicity Category 3

Classification according to 67/548/EEC
Full text of R-phrases: see section 16

R-code(s)
Not classified

2.2. Label elements

Product identifier
Hazard statements
H412 - Harmful to aquatic life with long lasting effects

Contains
Not Applicable

Precautionary Statements - EU (§28, 1272/2008)
2.3. Other hazards
May be harmful if swallowed Harmful to aquatic life
This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)
This preparation contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

SECTION 3: Composition/information on ingredients

3.1 Substances
Not Applicable

3.2 Mixtures

<table>
<thead>
<tr>
<th>chemical name</th>
<th>EC No</th>
<th>CAS No</th>
<th>weight-%</th>
<th>Classification according to 67/548/EEC</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
<th>REACH registration number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyether compound</td>
<td>Not Listed</td>
<td>-</td>
<td>95=&lt;</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>TRICRESYL PHOSPHATE (meta,para isomer mixed)</td>
<td>215-548-8</td>
<td>1330-78-5</td>
<td>&lt;2</td>
<td>N;R50</td>
<td>Aquatic Acute 1 (H400)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>204-881-4</td>
<td>128-37-0</td>
<td>&lt;1</td>
<td>N; R50-53</td>
<td>Aquatic Acute 1 (H400) Aquatic Chronic 1(H410)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Additives</td>
<td>-</td>
<td>-</td>
<td>&lt;1</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Full text of R-phrases: see section 16
Full text of H- and EUH-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

INHALATION Move to fresh air in case of accidental inhalation of vapors or decomposition products. (Get medical attention immediately if symptoms occur.).

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Eye ContactImmediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes.

INGESTIONIf swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

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

Symptoms No information available.

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

Note to physicians No information available.

SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media
Suitable extinguishing media
CO2, dry chemical, dry sand, alcohol-resistant foam.

Unsuitable extinguishing media
Do NOT use straight streams

5.2. Special hazards arising from the substance or mixture

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective suit. Use personal protective equipment as required.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Ensure adequate ventilation, especially in confined areas.
Beware of slippery surface.

For emergency responders
Use personal protection recommended in Section 8.

6.2. Environmental precautions

Should not be released into the environment.

6.3. Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Use personal protective equipment as required.
Dam up.
Cover liquid spill with sand, earth or other non-combustible absorbent material.
Take up mechanically, placing in appropriate containers for disposal.
Clean contaminated surface thoroughly.

6.4. Reference to other sections

See Section 12: ECOLOGICAL INFORMATION.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling
Use personal protective equipment as required. Avoid breathing vapors or mists.

General hygiene considerations
Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions
Store at ambient conditions. Store in accordance with local regulations.

7.3. Specific end use(s)
Risk Management Methods (RMM)
The information required is contained in this Material Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>European Union</th>
<th>United Kingdom</th>
<th>France</th>
<th>Spain</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>128-37-0</td>
<td>STEL: 30 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td></td>
<td></td>
<td>TWA: 10 mg/m³</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³</td>
<td></td>
<td></td>
<td></td>
<td>Ceiling / Peak: 40 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Skin</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Italy</th>
<th>Portugal</th>
<th>Netherlands</th>
<th>Finland</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>TWA: 10 mg/m³</td>
<td>STEL: 20 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>128-37-0 ( &lt;1 )</td>
<td>TWA: 10 mg/m³</td>
<td>STEL: 20 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Austria</th>
<th>Switzerland</th>
<th>Poland</th>
<th>Norway</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>128-37-0</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td>TWA: 10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering controls
Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

<table>
<thead>
<tr>
<th>Protection</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye/face protection</td>
<td>Tight sealing safety goggles.</td>
</tr>
<tr>
<td>Hand protection</td>
<td>Wear protective nitrile rubber gloves.</td>
</tr>
<tr>
<td>Skin and body protection</td>
<td>Suitable protective clothing.</td>
</tr>
<tr>
<td>Respiratory protection</td>
<td>No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. In case of inadequate ventilation wear respiratory protection.</td>
</tr>
</tbody>
</table>

Environmental exposure controls No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
<td>Odor characteristic</td>
</tr>
<tr>
<td>Appearance color</td>
<td>clear</td>
<td>Odor Threshold No information available</td>
</tr>
<tr>
<td>PH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting point</td>
<td>178 °C / 338 °F</td>
<td>Cleveland Open Cup</td>
</tr>
<tr>
<td>Flash point</td>
<td>178 °C / 338 °F</td>
<td>Cleveland Open Cup</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Insoluble in water</td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity 40°C</td>
<td>32.4 mm²/s</td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity 100°C</td>
<td>5.12 mm²/s</td>
<td></td>
</tr>
</tbody>
</table>

9.2. Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pour point</td>
<td>-47.5 °C</td>
</tr>
<tr>
<td>Dropping point</td>
<td></td>
</tr>
<tr>
<td>Density @15°C</td>
<td>0.9252 g/cm³</td>
</tr>
</tbody>
</table>
SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

Explosion Data

Sensitivity to Mechanical Impact  none.
Sensitivity to Static Discharge  No information available.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

Strong oxidizing agents. Heat, flames and sparks.

10.5. Incompatible materials

Strong oxidizing agents
Strong bases

10.6. Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

acute toxicity

Product Information

Product does not present an acute toxicity hazard based on known or supplied information.

INHALATION  No data available.
Eye Contact  No data available.
Skin Contact  No data available.
INGESTION  No data available.

Unknown Acute toxicity  98.35% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)  4,950.00

<table>
<thead>
<tr>
<th>chemical name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRICRESYL PHOSPHATE (meta,para isomer mixed)</td>
<td>3 g/kg ( Rat )</td>
<td>3700mg/kg</td>
<td>&gt;11.1mg/L</td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>890 mg/kg ( Rat )</td>
<td>&gt;2000mg/kg bw</td>
<td>546mg/m³</td>
</tr>
</tbody>
</table>

skin corrosion/irritation  No end point data for material.

Serious eye damage/eye irritation  No end point data for material.

sensitization  No end point data for material.
germ cell mutagenicity  No end point data for material.
carcinogenicity  No end point data for material.

Reproductive Toxicity  No end point data for material.
STOT - single exposure  No end point data for material.
STOT - repeated exposure  No end point data for material.
aspiration hazard  Not classified.

SECTION 12: Ecological information

12.1. Toxicity

Water hazard class (WGK)  slightly hazardous to water (WGK 1).

0.3005% of the mixture consists of components(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>chemical name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRICRESYL PHOSPHATE</td>
<td>-</td>
<td>0.21 - 0.32: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 3.3 - 6.2: 96 h Oncorhynchus mykiss mg/L LC50 static 0.1 - 0.22: 96 h Lepomis macrochirus mg/L LC50 flow-through 20.4 - 41.2: 96 h Lepomis macrochirus mg/L LC50 static 3.2 - 10: 96 h Oryzias latipes mg/L LC50 semi-static 4.8 - 6.4: 96 h Poecilia reticulata mg/L LC50 semi-static</td>
</tr>
<tr>
<td>(meta,para isomer mixed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>6: 72 h Pseudokirchneriella subcapitata mg/L EC50 0.42: 72 h Desmodesmus subspicatus mg/L EC50</td>
<td>5: 48 h Oryzias latipes mg/L LC50</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

No information available.

12.3. Bioaccumulative potential

No information available.

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)
This preparation contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

<table>
<thead>
<tr>
<th>chemical name</th>
<th>PBT and vPvB assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,6-Di-tert-butyl-p-cresol</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

12.6. Other adverse effects
No known effect

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods
- **Waste from Residues / Unused Products**
  Disposal should be in accordance with applicable regional, national and local laws and regulations.
- **Contaminated packaging**
  Improper disposal or reuse of this container may be dangerous and illegal.

### SECTION 14: Transport information

**IMDG**
- 14.1 UN/ID no Not regulated
- 14.2 Proper shipping name Not regulated
- 14.3 Hazard Class Not regulated
- 14.4 Packing group Not regulated
- 14.5 Marine pollutant Not Applicable
- 14.6 Special Provisions none

**RID**
- 14.1 UN/ID no Not regulated
- 14.2 Proper shipping name Not regulated
- 14.3 Hazard Class Not regulated
- 14.4 Packing group Not regulated
- 14.5 Environmental hazard Not Applicable
- 14.6 Special Provisions none

**ADR**
- 14.1 UN/ID no Not regulated
- 14.2 Proper shipping name Not regulated
- 14.3 Hazard Class Not regulated
- 14.4 Packing group Not regulated
- 14.5 Environmental hazard Not Applicable
- 14.6 Special Provisions none

**IATA**
- 14.1 UN/ID no Not regulated
- 14.2 Proper shipping name Not regulated
- 14.3 Hazard Class Not regulated
- 14.4 Packing group Not regulated
- 14.5 Environmental hazard Not Applicable
- 14.6 Special Provisions none

**ADN**
- 14.1 UN/ID no Not regulated
- 14.2 Proper shipping name Not regulated
- 14.3 Hazard Class Not regulated
- 14.4 Packing group Not regulated
- 14.5 Environmental hazard Not Applicable
- 14.6 Special Provisions none

**IBC**
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Proper shipping name Not regulated
SECTION 15: Regulatory information

<table>
<thead>
<tr>
<th>ENCS</th>
<th>Complies</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>Complies</td>
</tr>
<tr>
<td>EINECS</td>
<td>Complies</td>
</tr>
<tr>
<td>DSL</td>
<td>Not Listed</td>
</tr>
<tr>
<td>AICS</td>
<td>Complies</td>
</tr>
<tr>
<td>KECL</td>
<td>Complies</td>
</tr>
<tr>
<td>PICCS</td>
<td>Not Listed</td>
</tr>
<tr>
<td>China (IECSC)</td>
<td>Complies</td>
</tr>
<tr>
<td>NZIoC</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>chemical name</th>
<th>French RG number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRICRESYL PHOSPHATE (meta,para isomer mixed)</td>
<td>RG 34</td>
<td></td>
</tr>
</tbody>
</table>

Water hazard class (WGK) slightly hazardous to water (WGK 1).

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

15.2. Chemical safety assessment

A Chemical Safety Assessment is not required for this substance

SECTION 16: Other information

Full text of R-phrases referred to under sections 2 and 3
R22 - Harmful if swallowed
R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52/53 - Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Full text of H-Statements referred to under sections 2 and 3
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Issue Date 14-Nov-2012
Revision date 18-Jun-2014
Revision Note Not Applicable.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet