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

1.1. Product identifier
95-DRM

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

Use of the substance/mixture
Fluxes for soft soldering

Uses advised against
any non-intended use.

1.3. Details of the supplier of the safety data sheet

Manufacturer
Company name: Cobar Europe BV
Street: Aluminiumstraat 2
Place: NL-4823 AL Breda
Telephone: +31 76 5445566
Fax: +31 76 5445577
E-mail: info@Cobar.com

Supplier
Company name: Balver Zinn Josef Jost GmbH & Co. KG
Street: Blintroper Weg 11
Place: D-58802 Balve
Telephone: +49 2375 915-0
Fax: +49 2375 915-1700
Responsible Department: sds@BalverZinn.com

1.4. Emergency telephone number:
Poison Center Berlin - phone: +49 (0) 30-30686 790 - Consultation in German and English

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC
Indications of danger: F - Highly flammable, Xi - Irritant
R phrases:
Highly flammable.
Irritating to eyes.
Vapours may cause drowsiness and dizziness.

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hazard categories:
Flammable liquid: Flam. Liq. 2
Serious eye damage/eye irritation: Eye Irrit. 2
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause drowsiness or dizziness.

2.2. Label elements

Hazardous components which must be listed on the label
propan-2-ol; isopropyl alcohol; isopropanol
Signal word: Danger
Pictograms: GHS02-GHS07
Hazard statements

H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P312 Call a POISON CENTER/doctor if you feel unwell.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Special labelling of certain mixtures

EUH208 Contains 2,4,7,9-tetramethyldec-5-yne-4,7-diol. May produce an allergic reaction.

2.3. Other hazards

In use, may form flammable/explosive vapour-air mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures
Hazardous components

<table>
<thead>
<tr>
<th>EC No</th>
<th>Chemical name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>200-661-7</td>
<td>propan-2-ol; isopropyl alcohol; isopropanol</td>
<td>50 - &lt; 55 %</td>
</tr>
<tr>
<td>67-63-0</td>
<td>Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336</td>
<td></td>
</tr>
<tr>
<td>603-117-00-0</td>
<td>Xi - Irritant  R11-36-67</td>
<td></td>
</tr>
<tr>
<td>01-2119457558-25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>203-817-2</td>
<td>glutaric acid</td>
<td>1 - &lt; 5 %</td>
</tr>
<tr>
<td>110-94-1</td>
<td>Xi - Irritant  R36</td>
<td></td>
</tr>
<tr>
<td>204-673-3</td>
<td>adipic acid</td>
<td>1 - &lt; 5 %</td>
</tr>
<tr>
<td>124-04-9</td>
<td>Xi - Irritant  R36</td>
<td></td>
</tr>
<tr>
<td>607-144-00-9</td>
<td>Eye Irrit. 2; H319</td>
<td></td>
</tr>
<tr>
<td>01-2119457561-38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>204-809-1</td>
<td>2,4,7,9-tetramethyldec-5-ynedi-4,7-diol</td>
<td>&lt; 1 %</td>
</tr>
<tr>
<td>126-86-3</td>
<td>Xi - Irritant  R36-43-52-53</td>
<td></td>
</tr>
<tr>
<td>205-594-7</td>
<td>bis(2-(2-methoxyethoxy)ethyl) ether</td>
<td>&lt; 1 %</td>
</tr>
<tr>
<td>143-24-8</td>
<td>Repr. Cat. 1, Repr. Cat. 2, Repr. Cat. 3</td>
<td></td>
</tr>
<tr>
<td>01-2119958965-16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Further Information

This product does not contain SVHC substances in an amount >0.1%.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Change contaminated clothing.
First aider: Pay attention to self-protection!

After inhalation

Remove person to fresh air and keep comfortable for breathing. In case of allergic symptoms, especially in the breathing area, seek medical advice immediately.

After contact with skin

Take off immediately all contaminated clothing. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention.

After contact with eyes

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing. If eye irritation persists: Get medical advice/attention.

After ingestion

Rinse mouth thoroughly with water. Let water be drunken in little sips (dilution effect). Do NOT induce vomiting. Never give anything by mouth to an unconscious person or a person with cramps. In all cases of doubt, or when symptoms persist, seek medical advice.
4.2. Most important symptoms and effects, both acute and delayed
refer to chapter 2 and 11.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media
Suitable extinguishing media
Carbon dioxide (CO2). Dry extinguishing powder. Alcohol resistant foam.
In case of major fire and large quantities: Atomized water.

Unsuitable extinguishing media
High power water jet.

5.2. Special hazards arising from the substance or mixture
Can be released in case of fire: Gas/vapours, irritant. Carbon monoxide. Carbon dioxide (CO2).

5.3. Advice for firefighters
Wear a self-contained breathing apparatus and chemical protective clothing. In case of fire and/or
explosion do not breathe fumes.

Additional information
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Use water spray jet to protect personnel and to cool endangered containers.
In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of
explosion.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Remove persons to safety. Remove all sources of ignition. Ventilate affected area.
Do not breathe gas/vapour/aerosol. Avoid contact with skin, eyes and clothes.
Wear personal protection equipment. (refer to chapter 8)

6.2. Environmental precautions
Do not allow to enter into surface water or drains. Cover drains. Prevent spread over a wide area (e.g.
by containment or oil barriers). In case of gas escape or of entry into waterways, soil or drains, inform
the responsible authorities.

6.3. Methods and material for containment and cleaning up
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Ventilate affected area.
Treat the recovered material as prescribed in the section on waste disposal.
Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections
refer to chapter 8.
refer to chapter 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Advice on safe handling
Provide adequate ventilation as well as local exhaust at critical locations.
Do not breathe gas/vapour/aerosol. Avoid contact with skin, eyes and clothes.
Wear suitable protective clothing. (refer to chapter 8)

Advice on protection against fire and explosion
Keep away from sources of ignition. - No smoking. Take precautionary measures against static
discharges. Flammable vapors can accumulate in head space of closed systems. In use, may form
flammable/explosive vapour-air mixture. Heating causes rise in pressure with risk of bursting.

Further information on handling
General protection and hygiene measures: refer to chapter 8

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Keep container tightly closed in a cool, well-ventilated place. Protect against direct sunlight.
Ensure adequate ventilation of the storage area.
Make sure spills can be contained (e.g. sump pallets or kerbed areas).

Advice on storage compatibility
Self-heating substances and mixtures. Substances and mixtures which, in contact with water, emit
flammable gases. Oxidizing liquids. Oxidizing solids. ammonium nitrate. Self-reactive substances and
substances.

Further information on storage conditions
Keep the packing dry and well sealed to prevent contamination and absorption of humidity.
Protect against: UV-radiation/sunlight. heat. moisture. frost.
storage temperature: refer to specifications.

7.3. Specific end use(s)
refer to chapter 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>ppm</th>
<th>mg/m³</th>
<th>fibres/ml</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>Propan-2-ol</td>
<td>400</td>
<td>999</td>
<td></td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>500</td>
<td>1250</td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
<tr>
<td>CAS No</td>
<td>Substance</td>
<td>DNEL type</td>
<td>Exposure route</td>
<td>Effect</td>
<td>Value</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>---------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>67-63-0</td>
<td>propan-2-ol; isopropyl alcohol; isopropanol</td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>500 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>89 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>888 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>26 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>319 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td>124-04-9</td>
<td>adipic acid</td>
<td>Worker DNEL, acute</td>
<td>inhalation</td>
<td>systemic</td>
<td>264 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, acute</td>
<td>inhalation</td>
<td>local</td>
<td>5 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>38 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, acute</td>
<td>dermal</td>
<td>systemic</td>
<td>38 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>65 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, acute</td>
<td>inhalation</td>
<td>systemic</td>
<td>65 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>19 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, acute</td>
<td>dermal</td>
<td>systemic</td>
<td>19 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>19 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, acute</td>
<td>oral</td>
<td>systemic</td>
<td>19 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>local</td>
<td>5 mg/m³</td>
<td></td>
</tr>
<tr>
<td>143-24-8</td>
<td>bis(2-(2-methoxyethoxy)ethyl ether)</td>
<td>Worker DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>3 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Worker DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>22 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>inhalation</td>
<td>systemic</td>
<td>0.0005 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>dermal</td>
<td>systemic</td>
<td>0.001 mg/kg bw/day</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consumer DNEL, long-term</td>
<td>oral</td>
<td>systemic</td>
<td>0.001 mg/kg bw/day</td>
<td></td>
</tr>
</tbody>
</table>
### PNEC values

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>Environmental compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>propan-2-ol; isopropyl alcohol; isopropanol</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater</td>
<td>140,9 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine water</td>
<td>140,9 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Micro organisms in sewage treatment plants (STP)</td>
<td>2251 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td>552 mg/kg</td>
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<tr>
<td></td>
<td></td>
<td>Marine sediment</td>
<td>552 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil</td>
<td>28 mg/kg</td>
</tr>
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<td></td>
<td></td>
<td>Secondary poisoning</td>
<td>160 mg/kg</td>
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<tr>
<td>124-04-9</td>
<td>adipic acid</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Micro organisms in sewage treatment plants (STP)</td>
<td>59,1 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater sediment</td>
<td>0,484 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine water</td>
<td>0,0126 mg/l</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine sediment</td>
<td>0,0484 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil</td>
<td>0,0228 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater</td>
<td>0,126 mg/l</td>
</tr>
<tr>
<td>143-24-8</td>
<td>bis(2-(2-methoxyethoxy)ethyl) ether</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freshwater</td>
<td>32 mg/l</td>
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<td></td>
<td></td>
<td>Marine water</td>
<td>3,2 mg/l</td>
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<td></td>
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<td>Micro organisms in sewage treatment plants (STP)</td>
<td>500 mg/l</td>
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<td></td>
<td></td>
<td>Freshwater sediment</td>
<td>127 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine sediment</td>
<td>12,7 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Secondary poisoning</td>
<td>8,32 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Soil</td>
<td>6,7 mg/kg</td>
</tr>
</tbody>
</table>

### 8.2. Exposure controls

**Appropriate engineering controls**

Provide adequate ventilation as well as local exhaustion at critical locations.

**Protective and hygiene measures**

The usual precautions for handling chemicals should be considered.

Keep away from food, drink and animal feedingstuffs.

Always close containers tightly after the removal of product. When using do not eat, drink, smoke, sniff.

Wash hands before breaks and after work. Protect skin by using skin protective cream. Take off contaminated clothing.

**Eye/face protection**

Recommended eye protection brand: Tightly sealed safety glasses. (DIN EN 166)
Hand protection
Wear suitable gloves. (DIN EN 374)
Suitable material: Butyl rubber.
Thickness of glove material: 0,5 mm
penetration time (maximum wearing period): 120 min.
In the case of wanting to use the gloves again, clean them before taking off and air them well. Before using check leak tightness / impermeability.
For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection
Wear suitable protective clothing.
Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500.

Respiratory protection
With correct and proper use, and under normal conditions, breathing protection is not required.
Respiratory protection necessary at:
exceeding exposure limit values
insufficient ventilation.
Suitable respiratory protective equipment: gas filtering equipment (EN 141). Type: A
The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!

Environmental exposure controls
Do not allow uncontrolled discharge of product into the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>colourless</td>
<td></td>
</tr>
<tr>
<td>Odour</td>
<td>alcoholic</td>
<td></td>
</tr>
<tr>
<td>pH-Value</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Changes in the physical state</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting point</td>
<td>not applicable</td>
<td></td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Isopropyl alcohol: 82 °C</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>Isopropyl alcohol: 12 °C</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>In use, may form flammable/explosive vapour-air mixture.</td>
<td></td>
</tr>
<tr>
<td>Lower explosion limits</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Upper explosion limits</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>none.</td>
<td></td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>not determined</td>
<td></td>
</tr>
<tr>
<td>(at 20 °C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>0,915 g/cm³ N/A</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>miscible.</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 10: Stability and reactivity

10.1. Reactivity
No information available.

10.2. Chemical stability
Stable under normal storage and handling conditions.

10.3. Possibility of hazardous reactions
No information available.

10.4. Conditions to avoid
- Protect against: UV-radiation/sunlight, heat, moisture.
- In use may form flammable/explosive vapour-air mixture.
- Heating causes rise in pressure with risk of bursting.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Can be released in case of fire: Gas/vapours, irritant. Carbon monoxide. Carbon dioxide (CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicokinetics, metabolism and distribution
No data available.

Acute toxicity
Based on available data, the classification criteria are not met.
### Acute toxicity

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Exposure routes</th>
<th>Method</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>propan-2-ol; isopropyl alcohol; isopropanol</td>
<td>oral</td>
<td>LD50</td>
<td>&gt;5000 mg/kg</td>
<td>Rat</td>
<td>ECHA Dossier</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt;5000 mg/kg</td>
<td>Rabbit</td>
<td>RTECS</td>
</tr>
<tr>
<td>110-94-1</td>
<td>glutaric acid</td>
<td>oral</td>
<td>LD50</td>
<td>6000 mg/kg</td>
<td>Mouse</td>
<td>RTECS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>&gt;10000 mg/kg</td>
<td>Rabbit</td>
<td>RTECS</td>
</tr>
<tr>
<td>124-04-9</td>
<td>adipic acid</td>
<td>oral</td>
<td>LD50</td>
<td>5560 mg/kg</td>
<td>Ratte</td>
<td>ECHA Dossier</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dermal</td>
<td>LD50</td>
<td>5010 mg/kg</td>
<td>Ratte</td>
<td>ECHA Dossier</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inhalative (4 h aerosol)</td>
<td>LC50</td>
<td>&gt; 7,7 mg/l</td>
<td>Ratte</td>
<td>ECHA Dossier</td>
</tr>
<tr>
<td>143-24-8</td>
<td>bis(2-(2-methoxyethoxy)ethyl) ether</td>
<td>oral</td>
<td>LD50</td>
<td>3850 mg/kg</td>
<td>Rat. (OECD 401)</td>
<td>ECHA Dossier</td>
</tr>
</tbody>
</table>

### Irritation and corrosivity
- Causes serious eye irritation.

### Sensitising effects
- Based on available data, the classification criteria are not met.
- May cause sensitisation especially in sensitive humans.

### STOT-single exposure
- May cause drowsiness or dizziness. (propan-2-ol; isopropyl alcohol; isopropanol)

### Severe effects after repeated or prolonged exposure
Based on available data, the classification criteria are not met.

Isopropyl alcohol (CAS-No.: 67-63-0):
Chronic inhalative toxicity
Exposure time: 24 month
Species: Fischer 344 Rat.
Method: OECD Guideline 451
Result: NOAEC = 5000 ppm
Literature information: ECHA Dossier

Adipic acid (CAS-No.: 124-04-9):
Chronic oral toxicity
Exposure time: 24 month
Species: Carworth Farm strain Rat.
Method: no guideline followed
Result: NOAEL = 750 mg/kg(bw)/day
Literature information: ECHA Dossier

2,4,7,9-tetramethyldec-5-yne-4,7-diol (CAS-No.: 126-86-3)
Subacute oral toxicity:
Exposure time: 28d
Species: Long-Evans Rat.
Method: other
Result: NOAEL = 5000 ppm
Literature information: ECHA Dossier

bis(2-(2-methoxyethoxy)ethyl) ether (CAS-No.: 143-24-8):
Subacute oral toxicity
Exposure time: 28d
Species: Wistar Rat.
Method: OECD Guideline 407
Result: NOEL = 250 mg/kg(bw)/day
Literature information: ECHA Dossier

**Carcinogenic/mutagenic/toxic effects for reproduction**
Based on available data, the classification criteria are not met.

Isopropyl alcohol. (CAS-No.: 67-63-0):
In-vitro mutagenicity: No experimental indications of mutagenicity in-vitro exist.
Carcinogenicity:
Exposure time: 24 month
Species: Fischer 344 Rat.
Method: OECD Guideline 451
Result: NOEL = 5000 ppm
Literature information: ECHA Dossier

Adipic acid (CAS-No.: 124-04-9):
In-vitro mutagenicity: No experimental indications of mutagenicity in-vitro exist.
Carcinogenicity:
Exposure time: 24 month
Species: Carworth Farm strain Rat.
Method: no guideline followed
Result: NOAEL = >3750 mg/kg(bw)/day (male.)
Result: NOAEL = >750 mg/kg(bw)/day (female.)
Developmental toxicity/teratogenicity:
Exposure time: 10d
Species: Wistar Rat.
Method: no guideline followed
Result: NOAEL >= 288 ppm (maternal toxicity)
Result: NOAEL >= 288 ppm (developmental toxicity)
Literature information: ECHA Dossier

2,4,7,9-tetramethyldec-5-yne-4,7-diol (CAS-No.: 126-86-3)
In-vitro mutagenicity: No experimental indications of mutagenicity in-vitro exist.
Reproductive toxicity:
Exposure time: 91d
Species: Sprague-Dawley Rat.
Method: no guideline
Result: NOAEL = 500 mg/kg/day
Developmental toxicity/teratogenicity:
Exposure time: 91d
Species: Sprague-Dawley Rat.
Method: no guideline
Result: NOAEL = 500 mg/kg/day
Literature information: ECHA Dossier

Bis(2-(2-methoxyethoxy)ethyl) ether (CAS-No.: 143-24-8):
In-vitro mutagenicity: No experimental indications of mutagenicity in-vitro exist.
Literature information: ECHA Dossier

Aspiration hazard
Based on available data, the classification criteria are not met.

Specific effects in experiment on an animal
No data available.

Further information
Solvents:
Symptoms: Depression of the central nervous system. Liver and kidney damage. drowsiness. vomiting.
Nausea. Dizziness. unconsciousness. Impaired consciousness. Intoxication. erythema (redness)

SECTION 12: Ecological information

12.1. Toxicity
## 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Method</th>
<th>Value</th>
<th>d</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>propan-2-ol; isopropyl alcohol; isopropanol</td>
<td></td>
<td></td>
<td></td>
<td>ECHA Dossier</td>
</tr>
<tr>
<td></td>
<td>EU Method C.5/ EU Method C.6</td>
<td>53%</td>
<td>5</td>
<td></td>
<td>ECHA Dossier</td>
</tr>
<tr>
<td>124-04-9</td>
<td>adipic acid</td>
<td></td>
<td></td>
<td></td>
<td>ECHA Dossier</td>
</tr>
<tr>
<td></td>
<td>OECD Guideline 301 D</td>
<td>83%</td>
<td>30</td>
<td></td>
<td>ECHA Dossier</td>
</tr>
</tbody>
</table>

Product is biodegradable.

## 12.3. Bioaccumulative potential

### Partition coefficient n-octanol/water

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-63-0</td>
<td>propan-2-ol; isopropyl alcohol; isopropanol</td>
<td>0.05</td>
</tr>
<tr>
<td>110-94-1</td>
<td>glutaric acid</td>
<td>-0.297</td>
</tr>
<tr>
<td>124-04-9</td>
<td>adipic acid</td>
<td>0.093</td>
</tr>
<tr>
<td>143-24-8</td>
<td>bis(2-(2-methoxyethoxy)ethyl) ether</td>
<td>-0.84</td>
</tr>
</tbody>
</table>

### BCF

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>BCF</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>124-04-9</td>
<td>adipic acid</td>
<td>3,162</td>
<td>QSAR</td>
<td>ECHA Dossier</td>
</tr>
</tbody>
</table>

## 12.4. Mobility in soil

No data available.

## 12.5. Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB.
12.6. Other adverse effects
No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal
Dispose of waste according to applicable legislation. Consult the appropriate local waste disposal expert about waste disposal. Non-contaminated packages may be recycled. According to EAKV, allocation of waste identity numbers/waste descriptions must be carried out in a specific way for every industry and process.

Control report for waste code/waste marking according to EAKV:

- **Waste disposal number of waste from residues/unused products**: 160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing dangerous substances
  - Classified as hazardous waste.

- **Waste disposal number of used product**: 160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing dangerous substances
  - Classified as hazardous waste.

- **Waste disposal number of contaminated packaging**: 150203 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; absorbents, filter materials, wiping cloths and protective clothing; absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02

Contaminated packaging
Handle contaminated packages in the same way as the substance itself.
Recommended cleaning agent: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

Land transport (ADR/RID)

- **14.1. UN number**: UN 1219
- **14.2. UN proper shipping name**: ISOPROPANOL (ISOPROPYL ALCOHOL)
- **14.3. Transport hazard class(es)**: II
- **14.4. Packing group**: II
- **Hazard label**:

  - Classification code: F1
  - Special Provisions: 601
  - Limited quantity: 1 L
  - Transport category: 2
  - Hazard No: 33
  - Tunnel restriction code: D/E

Other applicable information (land transport)
Excepted quantity: E2

Inland waterways transport (ADN)

- **14.1. UN number**: UN 1219
### 14.2. UN proper shipping name:
- ISOPROPANOL (ISOPROPYL ALCOHOL)

### 14.3. Transport hazard class(es):
- 3

### 14.4. Packing group:
- II

**Hazard label:**
- 3

**Classification code:** F1
**Special Provisions:** 601
**Limited quantity:** 1 L

**Other applicable information (inland waterways transport)**
- **Excepted quantity:** E2

#### Marine transport (IMDG)

<table>
<thead>
<tr>
<th>14.1. UN number:</th>
<th>UN 1219</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2. UN proper shipping name:</td>
<td>ISOPROPANOL (ISOPROPYL ALCOHOL)</td>
</tr>
<tr>
<td>14.3. Transport hazard class(es):</td>
<td>3</td>
</tr>
<tr>
<td>14.4. Packing group:</td>
<td>II</td>
</tr>
<tr>
<td>Hazard label:</td>
<td>3</td>
</tr>
</tbody>
</table>

**Marine pollutant:** NO
**Special Provisions:** -
**Limited quantity:** 1 L
**EmS:** F-E, S-D

**Other applicable information (marine transport)**
- **Excepted quantity:** E2

#### Air transport (ICAO)

<table>
<thead>
<tr>
<th>14.1. UN number:</th>
<th>UN 1219</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.2. UN proper shipping name:</td>
<td>ISOPROPANOL (ISOPROPYL ALCOHOL)</td>
</tr>
<tr>
<td>14.3. Transport hazard class(es):</td>
<td>3</td>
</tr>
<tr>
<td>14.4. Packing group:</td>
<td>II</td>
</tr>
<tr>
<td>Hazard label:</td>
<td>3</td>
</tr>
</tbody>
</table>

**Special Provisions:** A180
**Limited quantity Passenger:** 1 L

| IATA-packing instructions - Passenger: | 353 |
| IATA-max. quantity - Passenger: | 5 L |
| IATA-packing instructions - Cargo: | 364 |
| IATA-max. quantity - Cargo: | 60 L |

**Other applicable information (air transport)**
- **Excepted quantity:** E2
  - Passenger-LQ: Y341

#### 14.5. Environmental hazards
14.6. Special precautions for user

See section 8.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not relevant.

SECTION 15: Regulatory information

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

EU regulatory information

2010/75/EU (VOC): 51.6 % (calculated.)
2004/42/EC (VOC): 457.5 g/l (calculated.)

Additional information
REACH 1907/2006 Appendix XVII, No: 3

National regulatory information

Employment restrictions: Observe employment restrictions for young people.
Water contaminating class (D): 1 - slightly water contaminating

Additional information
Observe technical data sheet.

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Changes
Rev. 1.00; 23.02.2015, Initial release

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route
CAS Chemical Abstracts Service
DNEL: Derived No Effect Level
IARC: INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)
LOAEL: Lowest observed adverse effect level
LOAEC: Lowest observed adverse effect concentration
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
NOAEL: No observed adverse effect level
NOAEC: No observed adverse effect level
NTP: National Toxicology Program
N/A: not applicable
OSHA: Concerning the International Transport of Dangerous Goods by Rail)
relevant R-phrases (Number and full text)

11  Highly flammable.
36  Irritating to eyes.
43  May cause sensitisation by skin contact.
52  Harmful to aquatic organisms.
53  May cause long-term adverse effects in the aquatic environment.
61  May cause harm to the unborn child.
62  Possible risk of impaired fertility.
67  Vapours may cause drowsiness and dizziness.

Relevant H- and EUH-phrases (Number and full text)

H225  Highly flammable liquid and vapour.
H317  May cause an allergic skin reaction.
H319  Causes serious eye irritation.
H336  May cause drowsiness or dizziness.
H360Df May damage the unborn child. Suspected of damaging fertility.
H412  Harmful to aquatic life with long lasting effects.
EUH208 Contains 2,4,7,9-tetramethyldec-5-yne-4,7-diol. May produce an allergic reaction.

Further Information

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.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor’s safety data sheet.)