1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product information
- Trade name: ARALDITE 2011 RESIN(E)/HARZ
- Company: Vantico Ltd.
  Ickleton Road
  CB2 4QA Duxford
- Telephone: +441223832121
- Telefax: +441223493322
- Emergency telephone: +41 61 966 40 00

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature
Formulated bisphenol A epoxy resin preparation

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Symbol(s):</th>
<th>R-phrase(s)</th>
<th>Concentration [%]</th>
</tr>
</thead>
<tbody>
<tr>
<td>reaction product: bisphenol A- (epichlorhydrin); epoxy resin (number average molecular weight &lt; 700)</td>
<td>25068-38-6</td>
<td>Xi, N</td>
<td>R36/38 R43 R51/53</td>
<td>70.00 - 82.00</td>
</tr>
<tr>
<td>bisphenol F-epoxy resin</td>
<td>9003-36-5</td>
<td>Xi, N</td>
<td>R36/38 R43 R51/53</td>
<td>4.00 - 10.00</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Irritating to eyes and skin.
May cause sensitization by skin contact.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST AID MEASURES

- Inhalation: Move to fresh air. If symptoms persist, call a physician.
- Eye contact: Rinse immediately with plenty of water for at least 15 minutes. If eye irritation persists, consult a specialist.
- Skin contact: Wash off with soap and plenty of water. If skin irritation persists, call a physician.
- Ingestion: Immediately give plenty of water (if possible charcoal slurry). Do not induce vomiting. Obtain medical attention.
5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water spray, Carbon dioxide (CO2), Foam, Dry powder.

Extinguishing media which must not be used for safety reasons: High volume water jet.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus and protective suit.

Further information: Burning produces obnoxious and toxic fumes, Carbon oxides.

6. ACCIDENTAL RELEASE MEASURES

Environmental precautions: Do not allow material to contaminate ground water system. Prevent product from entering drains.

Methods for cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste.

7. HANDLING AND STORAGE

Handling

Advice on safe handling: Provide sufficient air exchange and/or exhaust in work rooms. Avoid formation of aerosol. Ensure adequate ventilation. Handle and open container with care.

Storage

Further information on storage conditions: Keep away from food, drink and animal feeding stuffs. Keep container tightly closed. Keep at temperatures between 2 and 40°C.

Storage hazard class Vantico Ltd.: Storage class 10, Environmentally hazardous liquids

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Update</th>
<th>Basis</th>
</tr>
</thead>
</table>

Personal protective equipment

Eye protection: Tightly fitting safety goggles.
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>paste</td>
</tr>
<tr>
<td>Colour</td>
<td>natural colour</td>
</tr>
<tr>
<td>Odour</td>
<td>slight</td>
</tr>
<tr>
<td>pH</td>
<td>approx. 6 at (20 °C) 1:1 in water</td>
</tr>
<tr>
<td>Boiling point</td>
<td>&gt; 200 °C</td>
</tr>
<tr>
<td>Thermal decomposition</td>
<td>&gt; 200 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>210 °C</td>
</tr>
<tr>
<td></td>
<td>Method: DIN 51758 (Pensky-Martens Closed Cup)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>&lt; 0.1 Pa at 20 °C</td>
</tr>
<tr>
<td>Density</td>
<td>1.15 - 1.25 g/cm³ at 25 °C</td>
</tr>
<tr>
<td>Water solubility</td>
<td>at 20 °C Note: practically insoluble</td>
</tr>
<tr>
<td>Miscibility with water</td>
<td>immiscible at 20 °C</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>30 - 50 Pa.s at 25 °C</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditions to avoid</td>
<td>Note: Take necessary action to avoid static electricity discharge.</td>
</tr>
<tr>
<td>Materials to avoid</td>
<td>Strong acids and strong bases. Strong oxidizing agents.</td>
</tr>
<tr>
<td>Hazardous decomposition</td>
<td>Carbon oxides. Burning produces obnoxious and toxic fumes.</td>
</tr>
</tbody>
</table>
11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>LD50 rat (&gt; 5,000 \text{mg/kg})</td>
</tr>
<tr>
<td>Eye irritation</td>
<td>irritating rabbit</td>
</tr>
<tr>
<td>Skin irritation</td>
<td>irritating rabbit dermal</td>
</tr>
<tr>
<td>Sensitization</td>
<td>sensitizing guinea pig dermal</td>
</tr>
</tbody>
</table>

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Further information on ecology

Additional ecological information: Avoid subsoil penetration. Prevent product from entering drains. Do not contaminate surface water.

13. DISPOSAL CONSIDERATIONS

Product: Waste Key Number: 070208
Must be incinerated, when in compliance with local regulations.

Container: Empty containers can be landfilled after cleaning, when in compliance with the Environmental Protection (Duty of Care) Regulations 1991.

14. TRANSPORT INFORMATION

Land transport

**ADR:**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-No.</td>
<td>3082</td>
</tr>
<tr>
<td>Class</td>
<td>9</td>
</tr>
<tr>
<td>Classification code</td>
<td>M6</td>
</tr>
<tr>
<td>Packaging group</td>
<td>III</td>
</tr>
<tr>
<td>Risk No.</td>
<td>90</td>
</tr>
<tr>
<td>ADR/RID-Labels</td>
<td>9</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.</td>
</tr>
<tr>
<td>contains</td>
<td>BISPHENOL A EPOXY RESIN</td>
</tr>
</tbody>
</table>
IDENTIFICATION

IDENT-NO:  ARALDITE 2011 RESIN(E)/HARZ

Version 6
Revision Date 21.02.2003

RID:

UN-No:  3082
Class:  9
Packaging group:  III
Risk No.:  90
ADR/RID-Labels:  9
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
contains: BISPHENOL A EPOXY RESIN

Sea transport

IMDG:

UN-No:  3082
Class:  9
Packaging group:  III
ADR/RID-Labels:  9
MFAG:  EmS:  F-A S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
contains: (BISPHENOL A EPOXY RESIN)

Air transport

IATA-DGR:

UN/ID No.:  UN 3082
Class:  9
Packaging group:  III
Packing instruction (cargo aircraft):  914
Max. Qty/Pack.:  999.00 L
(999.00 = No limit)
Packing instruction (passenger aircraft):  914
Max. Qty/Pack.:  999.00 L
(999.00 = No limit)
ADR/RID-Labels:  9
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
contains: (BISPHENOL A EPOXY RESIN)

15. REGULATORY INFORMATION

Labelling according to EEC Directive
Labelling required

Symbol(s):  : X N
Irritant  Dangerous for the environment

R-phrase(s):  : R36/38
Irritating to eyes and skin.
SAFETY DATA SHEET according to applicable EC directive

Ident-No: ARALDITE 2011 RESIN(E)/HARZ

Version 6
Revision Date 21.02.2003

Print Date 13.03.2003

R43 May cause sensitization by skin contact.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s): S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of soap and water.
S37/39 Wear suitable gloves and eye/face protection.
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

Exceptional labelling of special preparations: Contains epoxy constituents. See information supplied by the manufacturer.

Hazardous components which must be listed on the label: reaction product: bisphenol A-(epichlorhydrin); epoxy resin (number average molecular weight < 700)

National legislation

Notification status:
- EINECS yes
- TSCA yes
- DSL yes
- AICS yes
- KECI (KR) yes
- JEX (JP) yes

16. OTHER INFORMATION

List of R-phrases (Section 2)
Ident-No:  ARALDITE 2011 RESIN(E)/HARZ

version 6
Revision Date 21.02.2003

Print Date 13.03.2003

R36/38  Irritating to eyes and skin.
R43    May cause sensitization by skin contact.
R51/53  Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

The provision of Safety Data Sheets comes under Regulation 6 of CHIP (CHIP is the recognised abbreviation for the Chemicals Hazard Information and Packaging Regulations). This is an addition to the Health and Safety at Work Act 1974. Users of products supplied by Vantico Ltd should take appropriate measures to ensure working practices are in accordance with the Control of Substances Hazardous to Health Regulations (COSHH).

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