SAFETY DATA SHEET
ARBOKOL 682 CURING AGENT

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

1.1. Product identifier
Product name ARBOKOL 682 CURING AGENT
Synonyms; trade names Arbokol 682H Curing Agent, Arbokol 682M Curing Agent

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Curing agent component of: Two-component, epoxy-based adhesive.

1.3. Details of the supplier of the safety data sheet
Supplier Adshead Ratcliffe & Co. Ltd.
Derby Road, Belper
Derbyshire.
DE56 1WJ
Tel. (+44) 01773 826661
Fax. (+44) 01773 821215
sds@arbo.co.uk

1.4. Emergency telephone number
Emergency telephone (+44) 01773 826661 (office hours only)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification (EC 1272/2008)
Physical hazards Not Classified
Health hazards Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317
Environmental hazards Aquatic Chronic 2 - H411

Human health The product is irritating to eyes and skin. May cause skin sensitisation or allergic reactions in sensitive individuals.

Environmental The product contains a substance which is toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

2.2. Label elements
Pictogram

Signal word Warning
ARBOKOL 682 CURING AGENT

**Hazard statements**
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H411 Toxic to aquatic life with long lasting effects.

**Precautionary statements**
- P273 Avoid release to the environment.
- P280 Wear protective gloves.
- P280 Wear eye protection.
- 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.
- P501 Dispose of contents/container in accordance with national regulations.

**Contains**
- EPOXY RESIN (Number average MW <= 700)
- BISPHENOL F - EPICHLOROHYDRIN RESIN (number average MW <= 700)

**2.3. Other hazards**

**SECTION 3: Composition/information on ingredients**

### 3.2. Mixtures

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Concentration</th>
<th>CAS number</th>
<th>EC number</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPOXY RESIN (Number average MW &lt;= 700)</td>
<td>30-60%</td>
<td>25068-38-6</td>
<td>500-033-5</td>
<td>Skin Irrit. 2 - H315, Eye Irrit. 2 - H319, Skin Sens. 1 - H317, Aquatic Chronic 2 - H411</td>
</tr>
<tr>
<td>BISPHENOL F - EPICHLOROHYDRIN RESIN (number average MW &lt;= 700)</td>
<td>10-30%</td>
<td>28064-14-4</td>
<td></td>
<td>Skin Irrit. 2 - H315, Eye Irrit. 2 - H319, Skin Sens. 1 - H317, Aquatic Chronic 2 - H411</td>
</tr>
<tr>
<td>HEXAN-6-OLIDE</td>
<td>1-5%</td>
<td>502-44-3</td>
<td></td>
<td>Eye Irrit. 2 - H319</td>
</tr>
<tr>
<td>3-GLYCIDOXYPROPYLTRIMETHOXYSILANE</td>
<td>1-5%</td>
<td>2530-83-8</td>
<td>219-784-2</td>
<td>Eye Dam. 1 - H318</td>
</tr>
</tbody>
</table>

The full text for all hazard statements is displayed in Section 16.
Composition comments
Epoxy resin, with fillers, and auxiliaries.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
In all cases of doubt, or if symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation
Move affected person to fresh air at once. Rinse nose and mouth with water. Get medical attention if any discomfort continues.

Ingestion
Rinse mouth thoroughly with water. Give plenty of water to drink. Give milk instead of water if readily available. Get medical attention if any discomfort continues.

Skin contact
Wipe off excess material with cloth or paper. Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.

Eye contact
Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing. Show this Safety Data Sheet to the medical personnel.

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

Inhalation
No specific symptoms known.

Ingestion
May cause discomfort if swallowed. May cause irritation to mouth, throat and stomach.

Skin contact
Skin irritation. Allergic rash.

Eye contact
Irritating to eyes. Symptoms following overexposure may include the following: Redness. Pain.

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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
Use fire-extinguishing media suitable for the surrounding fire.

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

Specific hazards
Toxic gases or vapours.

Hazardous combustion products
Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting
Control run-off water by containing and keeping it out of sewers and watercourses.

Special protective equipment for firefighters
Wear self contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions
Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet.

6.2. Environmental precautions
Environmental precautions

Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

When handling waste, the safety precautions applying to handling of the product should be considered. Wear necessary protective equipment. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Avoid the spillage or runoff entering drains, sewers or watercourses.

6.4. Reference to other sections

Reference to other sections

For personal protection, see Section 8. See Section 11 for additional information on health hazards. The product contains a substance which is hazardous to aquatic organisms and which may cause long term adverse effects in the aquatic environment. See section 12. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Avoid contact with skin and eyes. Persons susceptible to allergic reactions should not handle this product. Good personal hygiene procedures should be implemented.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Store in tightly-closed, original container in a dry, cool and well-ventilated place.

Storage class

Miscellaneous hazardous material storage.

7.3. Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

Usage description

Gunnable sealant / adhesive.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Ingredient comments

No exposure limits known for ingredient(s).

HEXAN-6-OLIDE (CAS: 502-44-3)

| DNEL | - Dermal; Long term systemic effects: 2.98 mg/kg/day  
| PNEC | - Inhalation; Long term local effects: 14 mg/m³  
|     | - Inhalation; Long term systemic effects: 10.4 mg/m³  
|     | - STP; 32 mg/l  
|     | - Fresh water; 0.204 mg/l  
|     | - Intermittent release; 2.04 mg/l  
|     | - Marine water; 0.0204 mg/l  

8.2. Exposure controls

Protective equipment

Appropriate engineering controls

Provide adequate ventilation.
### ARBOKOL 682 CURING AGENT

**Eye/face protection**  
Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible.

**Hand protection**  
Use protective gloves. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

**Other skin and body protection**  
Wear appropriate clothing to prevent any possibility of skin contact.

**Hygiene measures**  
Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated.

**Environmental exposure controls**  
Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

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## SECTION 9: Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Paste</td>
</tr>
<tr>
<td><strong>Colour</strong></td>
<td>Off-white</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Slight</td>
</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Initial boiling point and range</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>1.22 - 1.30 @ 20°C</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td>Insoluble in water</td>
</tr>
<tr>
<td><strong>Partition coefficient</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Decomposition Temperature</strong></td>
<td>Not determined</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>2,500 - 6,000 P @ 20°C</td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Oxidising properties</strong></td>
<td>The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidising.</td>
</tr>
</tbody>
</table>

### 9.2. Other information

**Other information**  
None.

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## SECTION 10: Stability and reactivity
ARBOKOL 682 CURING AGENT

10.1. Reactivity
Reactivity
There are no known reactivity hazards associated with this product.

10.2. Chemical stability
Stability
Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions
Possibility of hazardous reactions
Not determined. Will not polymerise.

10.4. Conditions to avoid
Conditions to avoid
Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials
Materials to avoid

10.6. Hazardous decomposition products
Hazardous decomposition products
Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity - oral
Notes (oral LD₅₀)
For this endpoint no toxicological data is available for the whole product.

Acute toxicity - dermal
Notes (dermal LD₅₀)
For this endpoint no toxicological data is available for the whole product.

Skin corrosion/irritation
Animal data
For this endpoint no toxicological data is available for the whole product.

Serious eye damage/irritation
Serious eye damage/irritation
For this endpoint no toxicological data is available for the whole product.

Skin sensitisation
Skin sensitisation
For this endpoint no toxicological data is available for the whole product.

Germ cell mutagenicity
Genotoxicity - in vitro
For this endpoint no toxicological data is available for the whole product.

Carcinogenicity
Carcinogenicity
For this endpoint no toxicological data is available for the whole product.

Reproductive toxicity
Reproductive toxicity - fertility
For this endpoint no toxicological data is available for the whole product.

Specific target organ toxicity - single exposure
STOT - single exposure
Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure
STOT - repeated exposure
Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard
Aspiration hazard
Not relevant, due to the form of the product.
ARBOKOL 682 CURING AGENT

Inhalation
No specific health hazards known.

Ingestion
May cause discomfort if swallowed.

Skin contact
Irritating to skin. May cause sensitisation by skin contact.

Eye contact
Irritating to eyes.

Acute and chronic health hazards
Mild dermatitis, allergic skin rash. Defatting, drying and cracking of skin.

Toxicological information on ingredients.

<table>
<thead>
<tr>
<th>EPOXY RESIN (Number average MW &lt;= 700)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute toxicity - oral</strong></td>
</tr>
<tr>
<td>Notes (oral LD₅₀)</td>
</tr>
<tr>
<td><strong>Acute toxicity - dermal</strong></td>
</tr>
<tr>
<td>Notes (dermal LD₅₀)</td>
</tr>
<tr>
<td><strong>Skin corrosion/irritation</strong></td>
</tr>
<tr>
<td>Animal data</td>
</tr>
<tr>
<td><strong>Serious eye damage/irritation</strong></td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
</tr>
<tr>
<td><strong>Skin sensitisation</strong></td>
</tr>
<tr>
<td>Local Lymph Node Assay (LLNA) - : Sensitising.</td>
</tr>
</tbody>
</table>

SECTION 12: Ecological Information

Ecotoxicity
The product contains substances which are toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

12.1. Toxicity
Toxicity
There are no data for the product.

Ecological information on ingredients.

<table>
<thead>
<tr>
<th>EPOXY RESIN (Number average MW &lt;= 700)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute toxicity - fish</strong></td>
</tr>
<tr>
<td>LC₅₀, 96 hours: 1.5 mg/l, Algae</td>
</tr>
<tr>
<td><strong>Acute toxicity - aquatic invertebrates</strong></td>
</tr>
<tr>
<td>EC₅₀, 48 hours: 1.7 mg/l, Daphnia magna</td>
</tr>
<tr>
<td><strong>Acute toxicity - aquatic plants</strong></td>
</tr>
<tr>
<td>EC₅₀, 72 hours: 9.4 mg/l, Fish</td>
</tr>
<tr>
<td><strong>Acute toxicity - microorganisms</strong></td>
</tr>
<tr>
<td>IC₈₀, 3 hours: &gt;100 mg/l, Bacteria</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability
Persistence and degradability
This product is not expected to be readily biodegradable.

Ecological information on ingredients.
ARBOKOL 682 CURING AGENT

Persistence and degradability
The product is not readily biodegradable.

Biodegradation
- Degradation 5%: 28 days

12.3. Bioaccumulative potential
Bioaccumulative potential
Bioaccumulation is unlikely to be significant because of the low water-solubility of this product.

Partition coefficient
Not applicable.

Ecological information on ingredients.

EPOXY RESIN (Number average MW <= 700)

Bioaccumulative potential
BCF: 31

Partition coefficient
log Pow: 3.242

12.4. Mobility in soil
Mobility
The product is insoluble in water.

12.5. Results of PBT and vPvB assessment
Results of PBT and vPvB assessment
This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

SECTION 13: Disposal considerations

13.1. Waste treatment methods
General information
Waste is classified as hazardous waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

Disposal methods
May be mixed with base component to give an inert polymeric material.

Waste class
HP4 Irritant HP13 Sensitising HP14 Ecotoxic Recommended EWC Code 08 04 09*

SECTION 14: Transport information

14.1. UN number
UN No. (ADR/RID) 3077
UN No. (IMDG) 3077
UN No. (ICAO) 3077
UN No. (ADN) 3077

14.2. UN proper shipping name
Proper shipping name (ADR/RID) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (epoxy resin)
Proper shipping name (IMDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (epoxy resin)
Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (epoxy resin)
Proper shipping name (ADN) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (epoxy resin)

14.3. Transport hazard class(es)
ADR/RID class 9
ADR/RID classification code M7
ARBOKOL 682 CURING AGENT

14.4. Packing group
ADR/RID packing group III
IMDG packing group III
ADN packing group III
ICAO packing group III

14.5. Environmental hazards
Environmentally hazardous substance/marine pollutant

14.6. Special precautions for user
EmS F-A, S-F
ADR transport category 3
Emergency Action Code 2Z
Hazard Identification Number (ADR/RID) 90
Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture
EU legislation Regulation (EC) 1907/2006 REACH (as amended).
Regulation (EC) 1272/2008 CLP (as amended).
Guidance Workplace Exposure Limits EH40.

15.2. Chemical safety assessment
No chemical safety assessment has been carried out.

SECTION 16: Other information

Revision comments General review
Revision date 15/05/2017
Revision 1
Supersedes date 29/06/2015
ARBOKOL 682 CURING AGENT

SDS number 10170

Hazard statements in full
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.