SAFETY DATA SHEET
REDUX 119

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

1.1. Product identifier

Product name
REDUX 119

Product number
20004EU-1

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

Identified uses
Epoxy resin formulation in organic solvents.

1.3. Details of the supplier of the safety data sheet

Supplier
Hexcel Composites Ltd
Duxford
Cambridge
CB22 4QD
Tel: +44 (0)1223 833141
Fax: +44 (0)1223 838225

Contact person
SDSEUOffice@hexcel.com
Duxford, Cambridge, CB22 4QD, UK ++ 44 (0)1223 833141
Industriegelaende 2, A-4720 Neumarkt i.H., Austria. ++ 43 (0)7229 7720
Parc Industriel, Rue 3 Bourdons, 54, B-4840, Welkenraedt, Belgium ++32 87 307411
Sophie-Scholl-Weg 22, 21684 Stade, Germany. ++49 4141 78 79 00
Via S. Cristoforo, 44, 21047 Saronno, Italy. ++39 02 96709082
Poligon Ind., C/Bruselas 10-16, 28980 Parla, Madrid, Spain. ++34 91 664 49 00
45 rue de la Plaine, CS 10027, 01126 Dagneux CEDEX, France, ++33 (0)4 72 25 26 27
Xiqing Economic Development Area, Tianjin, China. ++86 22 2388 9068
5th Floor, Wisma Samudra, Jalan Kontraktor U1/14, Hicom-Glenmarie Industrial Park, 40150
Shah Alam, Selangor, Malaysia. +60 3 5569 3510

1.4. Emergency telephone number

Emergency telephone
To be used only for advice on chemical emergencies, spillages, fires or First Aid:
For emergencies in US/Canada: CHEMTREC – 800 424 9300
For emergencies in rest of the world: CARECHEM24 - +44 (0) 1235 239 670

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

Physical hazards
Flam. Liq. 3 - H226

Health hazards
Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317

Environmental hazards
Aquatic Chronic 3 - H412

2.2. Label elements
REDUX 119

Pictogram

Signal word
Danger

Hazard statements
H317 May cause an allergic skin reaction.
H315 Causes skin irritation.
H412 Harmful to aquatic life with long lasting effects.
H318 Causes serious eye damage.
H226 Flammable liquid and vapour.
H302+H332 Harmful if swallowed or if inhaled.

Precautionary statements
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

Contains
Cyclohexanone, EPOXY RESIN (Number average MW <= 700 )

2.3. Other hazards
This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
<th>CAS number</th>
<th>EC number</th>
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<td>Cyclohexanone</td>
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<td>203-631-1</td>
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<td>Acute Tox. 4 - H302</td>
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<td>Acute Tox. 4 - H312</td>
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<td>Acute Tox. 4 - H332</td>
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<td>Skin Irrit. 2 - H315</td>
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<td>Eye Dam. 1 - H318</td>
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<table>
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<th>Substance</th>
<th>Percentage</th>
<th>CAS number</th>
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<tr>
<td>BUTANONE</td>
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<td>201-159-0</td>
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<td>Eye Irrit. 2 - H319</td>
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<td>STOT SE 3 - H336</td>
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<table>
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<tr>
<th>EPOXY RESIN (Number average MW &lt;= 700 )</th>
<th>1-10%</th>
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<td>CAS number: 25068-38-6</td>
<td>EC number: 500-033-5</td>
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</table>

**Classification**

- Skin Irrit. 2 - H315
- Eye Irrit. 2 - H319
- Skin Sens. 1 - H317
- Aquatic Chronic 2 - H411

The full text for all hazard statements is displayed in Section 16.

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**Inhalation**

With any sign of respiratory distress, affected persons should be taken into fresh air, and made to rest while medical attention is sought.

**Ingestion**

Immediately rinse the mouth repeatedly with water, if swallowing has occurred, do not induce vomiting. If requested, give affected person sips of water. Seek medical attention immediately. If vomiting does occur do not allow the affected person to inhale their vomit. Do not give anything by mouth to an unconscious person.

**Skin contact**

Immediately wash the affected area with warm, soapy water then clean the skin with resin removing cream, followed by further washing with warm soapy water. Do not use solvents. If irritation persists, seek medical attention.

**Eye contact**

Flush with water for at least 15 minutes and seek medical attention if irritation persists.

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

**Inhalation**

Vapours may cause drowsiness and dizziness.

**Skin contact**

Prolonged contact may cause redness, irritation and dry skin. This product contains component(s) that can cause irritant and allergic contact dermatitis following skin contact with the product or vapours generated during processes using heat. The initial symptoms of irritant and allergic contact dermatitis are itching, redness, swelling, blistering, flaking and cracking.

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

**Notes for the doctor**

No specific recommendations. If in doubt, get medical attention promptly.

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**
Water spray, foam, dry powder or carbon dioxide.

**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**
Refer to section 10 for further details.

**Hazardous combustion products**
The products of combustion and decomposition depend on other materials present in the fire and the actual conditions of the fire. Burning will release carbon dioxide, water, carbon monoxide and compounds of nitrogen.

**5.3. Advice for firefighters**
**REDUX 119**

**Protective actions during firefighting**
A fire in the vicinity poses the risk of pressure build-up and rupture. Containers at risk from fire should be cooled with water and, if possible, removed from the danger area. Do not allow contaminated extinguishing water to enter the soil, ground water or surface waters.

**Special protective equipment for firefighters**
Self contained breathing apparatus and full protective clothing must be worn in case of fire.

### 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.

#### 6.2. Environmental precautions

**Environmental precautions**
Prevent spillage entering drainage systems or contaminating ground water or soil; if these occur, inform local fire, water and environmental health agencies immediately.

#### 6.3. Methods and material for containment and cleaning up

**Methods for cleaning up**
Cover/contain spillage with sand, earth, or universal binder. Materials involved in environmental release should be disposed of in accordance with local regulations. Do not use combustible absorbers such as cloth, paper, or sawdust.

#### 6.4. Reference to other sections

**Reference to other sections**
For personal protection, see Section 8. For waste disposal, see Section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Usage precautions**
Avoid contact with product, use only in well ventilated areas. Support bulk containers in electrically earthed stillages to allow controlled discharge. When applying product, use only in approved flame-proof booths or cabinets with exhaust ventilation, particularly when spraying. Wash skin thoroughly after handling. Use appropriate skin cream to prevent drying of skin. Promptly remove any clothing that becomes contaminated. Do not eat, drink or smoke when using this product.

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

**Storage precautions**
Store containers, securely closed according to container label instructions. Store in approved flammable liquid store. Keep away from food, drink and animal feeding stuffs.

#### 7.3. Specific end use(s)

**Specific end use(s)**
Currently no exposure scenario has been developed.

### SECTION 8: Exposure Controls/personal protection

#### 8.1. Control parameters

**Occupational exposure limits**

**Cyclohexanone**
Short-term exposure limit (15-minute): WEL 20 ppm  82 mg/m³
Long-term exposure limit (8-hour TWA): WEL 10 ppm  41 mg/m³
Sk

**BUTANONE**
Short-term exposure limit (15-minute): WEL 300 ppm  899 mg/m³
Long-term exposure limit (8-hour TWA): WEL 200 ppm  600 mg/m³
Sk

Sk = Can be absorbed through the skin.
WEL = Workplace Exposure Limit
8.2. Exposure controls

Protective equipment

Appropriate engineering controls
Provide adequate general and local exhaust ventilation.

Eye/face protection
Wear approved safety spectacles, goggles or facemask.

Hand protection
Avoid skin contact by use of impermeable gloves when handling the product. Recommendation: Select a glove type that meets Standard EN374. Breakthrough time not tested; dispose of immediately after contamination. 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
Ensure forearms are protected by use of gloves with long gauntlet, disposable sleeves or long sleeve overalls.

Respiratory protection
If adequate local exhaust ventilation is not available, an approved respirator should be worn if volatiles from the product is possible.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance
Coloured liquid.

Colour
Blue.

Odour
Strong. Solvent.

Odour threshold
0.12 ppm (Cyclohexanone) Refer to Section 3.2 for composition percentages.

pH
pH (diluted solution): 5.3 (10%)

Melting point
< -20°C

Initial boiling point and range
154°C (Cyclohexanone); 80°C (Butanone)°C @ Refer to Section 3.2 for composition percentages.

Flash point
22°C SCC (Setaflash closed cup).

Evaporation rate
0.3 (Cyclohexanone) (AC n-Bu=1) Refer to Section 3.2 for composition percentages.

Upper/lower flammability or explosive limits
Lower flammable/explosive limit: 1.1% (V) (Cyclohexanone); 1.8% (V) (Butanone) Upper flammable/explosive limit: 9.4% (V) (Cyclohexanone); 11.5% (V) (Butanone) Refer to Section 3.2 for composition percentages.

Vapour pressure
10.5 (Butanone) kPa @ 20°C

Vapour density
3.4 (Cyclohexanone); 3.1 (Butanone)

Relative density
1.0 g/cm3 @ 25°C

Solubility(ies)
Dispersible in water.

Partition coefficient
log Pow: 3.8 (Epoxy resin MW<=700) Refer to Section 3.2 for composition percentages.

Auto-ignition temperature
Not available. The mixture has not been tested to determine autoignition temperature. The lowest autoignition temperature of an individual component contained in the mixture is 420°C (Cyclohexanone). Use of the product under recommended conditions and standard atmospheric pressure will not result in the autoignition temperature being reached.
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Decomposition Temperature
Not applicable. The solvent content of the product prevents the product from decomposition. If the solvent content is lost through evaporation/boiling etc., the residual material has the ability to decompose if exposed to elevated temperature (>200°C).

Viscosity
480 mPa s @ 25°C

Explosive properties
Does not meet the criteria for classification as explosive.

Oxidising properties
Does not meet the criteria for classification as oxidising.

Comments
The indicated values do not necessarily correspond to the product specification. Please refer to the technical data sheet for specification data.

9.2. Other information

Volatile organic compound
This product contains a maximum VOC content of 870 g/litre. The value provided is a guideline based on a calculation method using the best available data. The calculation method covers the definition of VOC provided by EC Directive 1999/13/EC (Solvents Emissions Directive).

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity
Refer to section 10.3 for further details.

10.2. Chemical stability
Stability
Stable under recommended storage temperature as stated in product literature.

10.3. Possibility of hazardous reactions
Possibility of hazardous reactions
The product contains solvent. If conditions exist whereby the solvent is lost i.e. through heating/evaporation, the product, as an un-solvated catalysed resin, may produce an uncontrolled exothermic reaction when exposed to elevated temperatures.

10.4. Conditions to avoid
Conditions to avoid
Do not handle or use in presence of ignition sources (incandescent flame, hot sources, sparks from unprotected electrical apparatus etc.). Avoid risk of electrostatic discharges.

10.5. Incompatible materials
Materials to avoid
Avoid contact with strong acids and alkalis and oxidising materials.

10.6. Hazardous decomposition products
Hazardous decomposition products
Thermal decomposition and burning may release oxides of carbon, nitrogen and sulphur. The composition of gases/vapours/by-products generated during decomposition will vary depending on temperature conditions, temperature rate of rise and the presence of other chemicals in the vicinity that may react with the product. Gases/vapours/by-products should be regarded as toxic.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Toxicological effects
Toxicological studies on the mixture are not available.

Acute toxicity - oral
Notes (oral LD₅₀)
Harmful if swallowed.
ATE oral (mg/kg)
1568

Acute toxicity - dermal
Notes (dermal LD₅₀)
Based on available data the classification criteria are not met.
**Acute toxicity - inhalation**

Notes (inhalation LC₅₀) Harmful if inhaled.

ATE inhalation (gases ppm) 14109

ATE Inhalation (vapours mg/l) 34.50

ATE inhalation (dusts, mists mg/l) 4.7

**Skin corrosion/irritation**

Animal data Causes skin irritation.

**Serious eye damage/irritation**

Serious eye damage/irritation Causes serious eye damage.

**Respiratory sensitisation**

Respiratory sensitisation Based on available data the classification criteria are not met.

**Skin sensitisation**

Skin sensitisation May cause an allergic skin reaction.

**Germ cell mutagenicity**

Genotoxicity - in vitro Based on available data the classification criteria are not met.

**Carcinogenicity**

Carcinogenicity Based on available data the classification criteria are not met.

**Reproductive toxicity**

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

**Specific target organ toxicity - single exposure**

STOT - single exposure Based on available data the classification criteria are not met.

**Specific target organ toxicity - repeated exposure**

STOT - repeated exposure Based on available data the classification criteria are not met.

**Aspiration hazard**

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

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**SECTION 12: Ecological Information**

**12.1. Toxicity**

Toxicity Ecotoxicological studies at the mixture are not available. Please find below the ecotoxicological data available to us for the components.

**Acute toxicity - fish**

LC₅₀, 96 hours: 1.5 (Epoxy resin (Number average <=700)) mg/l, Refer to Section 3.2 for composition percentages.

**Acute toxicity - aquatic invertebrates**

EC₅₀, 24 hours, 24 hours: 3.6 (Epoxy resin (Number average MW<=700)) mg/l, Daphnia magna Refer to Section 3.2 for composition percentages.

**12.2. Persistence and degradability**

Persistence and degradability There are no data on the degradability of this product.

**12.3. Bioaccumulative potential**

Partition coefficient log Pow: 3.8 (Epoxy resin MW<=700) Refer to Section 3.2 for composition percentages.
12.4. Mobility in soil

Mobility
Do not allow to escape into waterways, waste water or soil.

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

Other adverse effects
None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal methods
Dispose of waste material in approved waste solvent containers. Do not discharge into drains, ground water or soil.
Dispose of by high temperature incineration in an approved plant.
Do not re-use any containers contaminated with product for any purpose.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) UN1866
UN No. (IMDG) UN1866
UN No. (ICAO) UN1866

14.2. UN proper shipping name

Proper shipping name (ADR/RID) RESIN SOLUTION
Proper shipping name (IMDG) RESIN SOLUTION
Proper shipping name (ICAO) RESIN SOLUTION

14.3. Transport hazard class(es)

ADR/RID class 3
ADR/RID classification code F1
ADR/RID label 3
IMDG class 3
ICAO class/division 3

Transport labels

14.4. Packing group

ADR/RID packing group II
IMDG packing group II
ICAO packing group II
REDUX 119

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

EmS F-E, S-E

ADR transport category 2

Emergency Action Code •3YE

Hazard Identification Number (ADR/RID) 33

Tunnel restriction code (D/E)

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Product not transported in bulk.

SECTION 15: Regulatory information

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

National regulations This product has been classified in accordance with Regulation (EC) No 1272/2008 (CLP). This product does not contain Annex XIV substances subject to Authorisation according to Regulation (EC) No. 1907/2006 (REACH) or substances of very high concern published in accordance with Article 59(10) above 0.1 % (w/w).

15.2. Chemical safety assessment

Currently Chemical Safety Assessments for components of this mixture have not been communicated.

SECTION 16: Other information
Abbreviations and acronyms used in the safety data sheet

ATE Acute Toxicity Estimate
ADR European Agreement concerning the International Carriage of Dangerous Goods by Road
CLP European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS# Chemical Abstracts Service number
DNEL Derived No Effect Level
EC# EINECS and ELINCS Number
EINECS European Inventory of Existing Commercial Substances
ELINCS European List of Notified Chemical Substances
EmS Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA Environmental Protection Agency
EU European Union
GHS Globally Harmonised System
IATA International Air Transport Association
ICAO International Civil Aviation Organization
IMDG International Maritime Dangerous Goods
Kow Octanol-water partition coefficient
LC50 Lethal concentration to 50% of a test population
LD50 Lethal dose to 50% of a test population (Median Lethal Dose)
n.o.s. Not otherwise specified
PBT Persistent, Bioaccumulative and Toxic substance
PNEC Predicted No Effect Concentration
PPE Personal Protection Equipment
SADT Self-accelerating decomposition temperature
SCBA Self-Contained Breathing Apparatus
STOT Specific Target Organ Toxicity
(STOT) RE Repeated Exposure
(STOT) SE Single Exposure
SVHC Substance of Very High Concern
TSCA Toxic Substances Control Act
UN United Nations
VOC Volatile Organic Compound
vPvB Very Persistent and very Bioaccumulative

General information
This product contains Cyclohexanone. The hazard classification of this material according to Annex VI of CLP Regulation shall be considered as a minimum classification. The supplier of this substance has access to data that lead to classification in a more severe category compared to the minimum classification. This classification in the more severe category has been applied (CLP Regulation Section 1.2.1 of Annex VI).

Classification procedures according to Regulation (EC) 1272/2008

Revision comments
NOTE: Lines within the margin indicate significant changes from the previous revision.

Issued by
European Product Stewardship Department

Revision date
01/05/2015

Revision
1

Supersedes date
06/11/2012
## REDUX 119

<table>
<thead>
<tr>
<th>Hazard statements in full</th>
<th>In full</th>
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<tr>
<td>H225 Highly flammable liquid and vapour.</td>
<td></td>
</tr>
<tr>
<td>H226 Flammable liquid and vapour.</td>
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</tr>
<tr>
<td>H302 Harmful if swallowed.</td>
<td></td>
</tr>
<tr>
<td>H312 Harmful in contact with skin.</td>
<td></td>
</tr>
<tr>
<td>H315 Causes skin irritation.</td>
<td></td>
</tr>
<tr>
<td>H317 May cause an allergic skin reaction.</td>
<td></td>
</tr>
<tr>
<td>H318 Causes serious eye damage.</td>
<td></td>
</tr>
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<td>H319 Causes serious eye irritation.</td>
<td></td>
</tr>
<tr>
<td>H332 Harmful if inhaled.</td>
<td></td>
</tr>
<tr>
<td>H336 May cause drowsiness or dizziness.</td>
<td></td>
</tr>
<tr>
<td>H411 Toxic to aquatic life with long lasting effects.</td>
<td></td>
</tr>
<tr>
<td>H412 Harmful to aquatic life with long lasting effects.</td>
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The product should be used in accordance with good industrial hygiene practice and compliance with any legal requirements. All information has been compiled with due diligence and is based on the present state of our knowledge. It is intended to describe the product from a point of view of safety and should not therefore be construed as guaranteeing any specific property. All products are supplied subject to our Standard Conditions of Sale which contains limitations on liability.