

Version No: 1037/101/version3

Date: 14th January 2015

Supersedes: 13th November 2013

PRODUCT NAME: UPS 210 CR EFFICIENCY CERAMIC KIT
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THIS PRODUCT IS A KIT AND SUPPLIED AS A MULTI PART PRODUCT WHICH CONSISTS OF A BASE COMPONENT AND ACTIVATOR COMPONENT. THIS DOCUMENT CONTAINS THE MSDS FOR BOTH BASE AND ACTIVATOR COMPONENTS.

DISCLAIMER: The information supplied in the MSDS is correct at the time of writing and date of issue. No warranties, expressed or implied, including, but not limited to, any implied warranty of merchantability or fitness for particular purpose or course of performance or usage of trade. The user of the material is responsible for ensuring the suitability of this product for application.

Date of issue: 14th January 2015

Document Number 1037/101/version 3:

Unique Polymer Systems LTD
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SECTION 1: Identification of Substance/ Preparation and Company

1.1 Product identifier

UPS 210 CR EFFICIENCY CERAMIC ACTIVATOR

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

Aliphatic polyamine hardener blend with inert fillers for repairing metalwork

1.3 Details of the supplier of the safety data sheet

Unique Polymer Systems LTD, Unit 1 Bankside Industrial Estate, Ledbury, Herefordshire, HR8 2DR

Tel: +44 (0) 1531 636300

Email: info@uniquepolymersystems.com

1.4 Emergency telephone number

+44 (0) 1531 636300 (9am to 5pm)

SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification in accordance with the Dangerous Preparations Directive 1999/45/EC

| | |
|----------------------|---|
| Xn; R20/21/22 | Harmful by inhalation, in contact with skin and if swallowed |
| C; R34 | Causes burns |
| R43 | May cause sensitisation by skin contact |
| Muta. 3; R68 | Possible risk of irreversible effects |
| Repr. 2; R62 | Possible risk of impaired fertility |
| R52/53 | Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment |

Classification in accordance with the Classification Labelling and Packaging Regulation EC (no) 1272/2008

| | |
|---|---|
| Acute Toxicity Category 4 H302 | Harmful if swallowed |
| Acute Toxicity Category 4 H312 | Harmful in contact with skin |
| Acute Toxicity Category 4 H332 | armful if inhaled |
| Skin Corrosive Category 1B | H314 Causes severe skin burns and eye damage |
| Eye Damage Category 1 | H318 Causes serious eye damage |
| Skin Sensitiser Category 1 | H317 May cause an allergic skin reaction |
| Mutagen Category 2 | H341 Suspected of causing genetic defects |
| Reproductive Toxicity Category 2 | H361f Suspected of damaging fertility |
| Aquatic Chronic Category 3 | H412 Harmful to aquatic life with long lasting effects |

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2.2 Label elements

Labelling in accordance with the Classification Labelling and Packaging Regulation EC (no) 1272/2008

Pictograms:



Signal Word: **DANGER**

Hazard statements: **H302 + H312 + H332: Harmful if swallowed, in contact with skin or if inhaled.**
H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H341: Suspected of causing genetic defects .
H361f: Suspected of damaging fertility.
H412 Harmful to aquatic life with long lasting effects

Precautionary statements: **P202: Do not handle until all safety precautions have been read and understood.**
P280: Wear protective gloves/protective clothing/eye protection/face 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.
P310: Immediately call a doctor
P501: Dispose of contents/container as hazardous waste

2.3 Other hazards

May cause chemical burns to the eyes and skin, and if ingested, to the gastrointestinal tract. May cause allergic skin reaction. Prolonged or repeated exposure may result in adverse effects on fertility.

If released into watercourses in sufficient quantities may be harmful to aquatic life. None of the components are considered to be Persistent, Bioaccumulative and Toxic (PBT) or very Persistent, very Bioaccumulative (vPvB).

SECTION 3: Composition/ Information on Ingredients

3.1 Substances

Not applicable, product is a mixture.

3.2 Mixtures

Contains the following hazardous components above thresholds of concern:

| Hazardous Components | Cas Number | % | Classification according to Regulation (EC) No 1272/2008 | Classification according to Directive 67/548/EEC |
|---|------------|--------|--|---|
| Formaldehyde polymer with Phenol and Triethylenetetramine | 32610-77-8 | 10-30% | Acute Tox. 4 H302 Acute Tox.4 H312, Skin Corr. 1B, skin Sens. 1 H317Aquatic Chronic 3 H412 | Xn; R21/22, R43 C; R34 R52/53 |
| Phenol | 108-95-2 | <10% | Acute Tox. 3 H301, Acute Tox. 3 H311, Acute Tox. 3 H331 Skin Corr. 1B H314, Muta. 2 H341, STOT RE 2 H373 | Muta. Cat. 3; R68 T; R23/24/25 Xn; R48/20/21/22 C; R34 |
| Triethylenetetramine | 112-24-3 | <10% | Acute Tox. 4 H312, Skin Corr. 1B H314, Skin Sens. 1 H317, Aquatic Chronic 3 H412 | Xn; R21, R43 C; R34 R52/53 |
| 2,2 iminodiethylamine | 111-40-0 | <10% | Acute Tox. 4 H302, Acute Tox. 4 H312, Acute Tox. 2 H330, Skin Corr. 1B H314, Skin Sens. 1 H317, Eye Dam. 1 H318, STOT SE 3 H335, | T+; R26 Xn; R21/22 C; R34 Xi; R37, R43 |
| Bisphenol A | 80-05-7 | <10% | Skin Sens. 1 H317, Eye Dam. 1 H318, STOT SE 3 H335, Repr. 2 H361f, Aquatic Chronic 2 H411 | Repr. Cat. 3; R62 Xi; R37-41, R43 R52 |

See section 16 for full description of R phrases and H statements.

SECTION 4: First Aid Measures

4.1 Description of first aid measures

Summon immediate medical assistance after contact with skin, eyes, inhalation or ingestion

Eye: Flush eyes with plenty of running water for 15 minutes, whilst gently holding the eyelids open. Seek immediate medical attention.

Skin: Remove product and contaminated clothing and wash area with water, seek medical advice. Except in most minor, superficial or localized burns, cover the affected area with a sterile dressing or clean sheeting. DO NOT APPLY GREASES OR OINTMENTS. Wash contaminated clothing before re-use.

Ingestion: Drink plenty of water, DO NOT INDUCE VOMITING. Seek medical attention immediately.

Inhalation: Remove patient to fresh air. If breathing has stopped give assisted respiration. Prevent aspiration of vomit. Turn victims head to one side. Seek medical advice.

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4.2 Most important symptoms and effects, both acute and delayed

Eye Contact: Sign/ Symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Skin Contact: Sign/ Symptoms may include localised redness, swelling, itching, intense pain, blistering, ulceration and tissue destruction. Maybe absorbed through skin and cause target organ effects. Persons previously sensitized to amines may develop a cross sensitization reaction to certain other amines

Inhalation: Sign/ Symptoms may include cough, sneezing, nasal discharge, tightness of chest, headache, hoarseness and nose and throat pain.

Ingestion: Signs/ Symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting and diarrhea, blood in the faeces.

4.3 Indication of any immediate medical attention and special treatments needed

Symptomatic treatment as required

SECTION 5: Fire Fighting Measures

5.1 Extinguishing media

Ignition will give rise to class B Fire, in case of fire use Water sprays, Dry chemical, CO2 or Alcohol foam

5.2 Special hazards arising from the substance or mixture

May generate toxic, irritating or flammable combustion products, including nitrogen oxides. Combustion in an oxygen starved environment produces toxic products including nitriles and amides. Sudden reaction and fire may result if mixed with an oxidizing agent.

5.3 Advice for fire fighters

Wear Self-contained breathing apparatus, rubber boots, gloves and body suit

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Remove all unnecessary personnel from the area. Ventilate the area if possible. Wear suitable protective clothing including chemical resistant gloves and coveralls. If vapour concentrations are high, respiratory protective equipment may be required. See section 8 for more information.

6.2 Environmental precautions

Prevent entry into sewers and watercourses. If product enters sewers or watercourses, inform the appropriate environmental authorities.

6.3 Methods and materials for containment and clearing up

Scrape up and transfer into a suitable container. Wash area with water.

6.4 References to other sections

Refer to section 5, 8 and 13 for protective Measures and Disposal.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

Avoid contact with skin, eyes and clothing. Handle in well ventilated area. Avoid breathing vapours. Wash hands after contact.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a cool, well ventilated area. Keep away from oxidizers, heat or flames.

7.3 Specific end uses(s)

No industrial or sector specific guidance available.

SECTION 8: Exposure Controls/ Personal Protection

8.1 Control parameters

| Substance Name | 8 hour exposure limit | 15 min exposure limit | Notes, Source |
|----------------------------|------------------------------|-----------------------------|----------------|
| 2,2'-Iminodi(ethylamine) | 1 ppm, 4.3 mg/m ³ | — | Sk, EH40, 2011 |
| Bisphenol A inhalable dust | 10 mg/m ³ | — | EH40, 2011 |
| Phenol | 2 ppm, 7.8 mg/m ³ | 4 ppm, 16 mg/m ³ | Sk, EH40, 2011 |

8.2 Exposure controls

- Engineering controls** Adequate ventilation should be provided so that exposure limits are not exceeded.
- Respiratory:** Avoid Breathing Vapours, Mists or Sprays; Select and use respiratory protection. Suggested filter type AP2.
- Hand Protection** Wear suitable chemical resistant gloves recommended for use with corrosive amines. Nitrile or neoprene gloves may be suitable, but glove manufacturers' specifications should always be checked first. Change gloves in accordance with manufacturer recommendations. If gloves are damaged during use, remove immediately and wash hands before replacing with new gloves.
- Skin Protection:** Avoid Skin Contact; use disposable coveralls
- Eye Protection:** Avoid Eye Contact; use safety goggles meeting the requirements of BS EN166 3, when handling this product
- Environmental Exposure controls** Take suitable measures to prevent entry into drains, sewers and watercourses.

SECTION 9: Physical/ Chemical Properties

9.1 Information on basic physical and chemical properties

| | |
|---|------------------------------|
| Appearance: | Amber Fluid |
| Odour: | Ammoniacal, Fishy |
| Odour threshold: | No data |
| PH: | Alkaline |
| Melting Point: | >180C |
| Boiling Point/ Range: | >200C |
| Flash Point; | >100C |
| Evaporation Rate: | No data |
| Flammability: | Not applicable |
| Upper/lower flammability limits: | No data |
| Vapour Pressure: | No data |
| Vapour density: | No data |
| Relative density: | 1.05g/cm ³ at 20C |
| Solubility in water: | Insoluble in water |
| Solubility in other solvents: | No data |
| Partition Coefficient: | No data |
| Autoignition temperature: | No data |
| Decomposition temperature: | No data |
| Viscosity: | No data |
| Explosive properties: | Not classified as explosive |
| Oxidising properties: | Not classified as oxidising |

9.2 Other information

None.

SECTION 10: Stability And Reactivity

10.1 Reactivity

Not considered to be a reactive product

10.2 Chemical stability

Stable

10.3 Possibility of hazardous reactions

Hazardous Polymerisation is not likely to occur.

10.4 Conditions to avoid

Excessive heat.

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10.5 Incompatible materials

Oxidising agents – cleaning solutions. Acids - reaction accompanied by large heat release occurs when the product is mixed with acids

10.6 Hazardous decomposition products

Ammonia when heated. Nitrogen Oxides in a fire. Combustion in an oxygen starved environment produces toxic products including nitriles and amides

SECTION 11: Toxicological Information

11.1 Information on toxicological effects

This product has not been tested. Judgements on the expected toxicity of this product have been made based upon consideration of its major components.

| | |
|------------------------------------|---|
| (a) acute toxicity | Based on consideration of the components, the mixture is expected to be harmful by inhalation, ingestion or in contact with skin. |
| (b) skin corrosion/irritation | Based on consideration of the components, the mixture is expected to be corrosive to skin. |
| (c) serious eye damage/irritation | Based on consideration of the components, the mixture is expected to be corrosive to eyes. |
| (d) respiratory/skin sensitisation | The product contains the following known sensitisers. Formaldehyde polymer with Phenol and Triethylenetetramine, Triethyltetramine, 2,2 iminodiethylamine (diethylenetetramine), bisphenol A, Persons previously sensitized to amines may develop a cross sensitization reaction to certain other amines. |
| (e) germ cell mutagenicity | The product contains phenol, which is classified as a suspected mutagen. |
| (f) carcinogenicity | Contains no substances identified as carcinogens. |
| (g) reproductive toxicity | The product contains bisphenol A which is suspected of damaging fertility. |
| (h) STOT-single exposure | This product is corrosive, and is expected to irritate the respiratory tract if inhaled. |
| (i) STOT-repeated exposure | The product contains phenol, which may cause adverse effects to the liver and kidneys if exposed to significant amounts over a prolonged period of time, at a concentration below the classification threshold for this effect. |
| (j) aspiration hazard | Not applicable. |

SECTION 12: Ecological Information

This product has not been tested. Judgements on the expected toxicity of this product have been made based upon consideration of its major components.

12.1 Toxicity

This product contains components which are considered to be harmful to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Once cured the toxicity of the product is expected to decrease.

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12.2 Persistence and degradability

This product is not expected to be readily biodegradable.

12.3 Bioaccumulative potential

This product is expected to have a low bioaccumulation potential.

12.4 Mobility in soil

Cured product is expected to be immobile.

12.5 Results of PBT and vPvB assessment

None of the components are known to be PBT or vPvB.

12.6 Other adverse effects

None known.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

In uncured state, dispose as chemical waste in accordance with local regulations. Waste from this product may present long term environmental hazards. Thus landfill sites must be considered less acceptable than incineration.

In cured state when mixed correctly with the base component, dispose as solid waste

Empty containers should be disposed of as chemical waste.

SECTION 14: Transport Information

General: Transport and labelling requirements will alter depending on the size of the packaging. Please refer to local transport regulations.

| | ADR | IMDG | ICAO |
|---|--|--|--|
| 14.1 UN Number | 2735 | 2735 | 2735 |
| 14.2 UN Proper shipping name | Polyamines, liquid, corrosive, N.O.S. (Contains Triethylene tetramine, Diethylenetriamine) | Polyamines, liquid, corrosive, N.O.S. (Contains Triethylene tetramine, Diethylenetriamine) | Polyamines, liquid, corrosive, N.O.S. (Contains Triethylene tetramine, Diethylenetriamine) |
| 14.3 Transport hazard class(es) | 8 | 8 | 8 |
| 14.4 Packing group | III | III | III |
| 14.5 Environmental hazards | Not EHS | Not EHS | Not EHS |
| 14.6 Special precautions for user | HIN 80 Tunnel Code E | EmS F-A, S-B | None |
| 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable | Not applicable | Not applicable |

Unique Polymer Systems LTD

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SECTION 15: Regulatory Information

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

All components are listed as existing substances in Europe

All components are listed, or are exempt from listing on the TCSA Inventory

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out for this product.

SECTION 16: Other Information

Revision information:

Reformatted in accordance with Regulation 453/2010 and Regulation 1272/2008.

List of Abbreviations used in this SDS:

| | |
|-------|---|
| CAS | Chemical Abstracts Service |
| CLP | Classification, Labelling and Packaging Regulation (EC) no 1272/2008 |
| DSD | Dangerous Substances Directive 67/548/EEC |
| DPD | Dangerous Preparations Directive 1999/45/EC |
| EC | European Community/Commission |
| PBT | Persistent, Bioaccumulative and Toxic |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) no 1907/2006 |
| vPvB | very Persistent, very Bioaccumulative |

References:

ECHA Classification and Labelling inventory

ECHA database of disseminated registration dossiers

Supplier's Safety Data Sheets

Method used for classification of mixtures:

Ingredient based approaches

R Phrases and H Statements used in Section 3

| | |
|------------|---|
| R20/22 | Harmful by inhalation and if swallowed, |
| R21/22 | Harmful in contact with skin and if swallowed, |
| R22 | Harmful if swallowed, |
| R23/24/25; | Toxic by inhalation, in contact with skin and if swallowed, |
| R26 | Very toxic if inhaled |
| R34 | Causes burns |
| R36 | Irritating to eyes |
| R36/38 | Irritating to eyes and skin, |

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| | |
|---------------|--|
| R37 | Irritating to respiratory system, |
| R41 | Risk of serious damage to eyes, |
| R43 | May cause sensitisation by skin contact |
| R48/20/21/22; | Harmful: Danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. |
| R52 | Harmful to aquatic organisms |
| R52/53 | Harmful to aquatic organisms, may cause long term adverse effects in the aquatic environment, |
| R62 | Possible risk of impaired fertility |
| R68 | Possible risk of irreversible effects |
| | |
| H301 | Toxic if swallowed |
| H302 | Harmful if swallowed |
| H311 | Toxic in contact with skin |
| H312 | Harmful in contact with skin |
| H314 | Causes severe skin burns and eye damage |
| H317 | May cause an allergic skin reaction |
| H318 | Causes serious eye damageH319 |
| H330 | Fatal if inhaled |
| H331 | Toxic if inhaled |
| H332 | Harmful if inhaled |
| H335 | May cause respiratory irritation |
| H341 | Suspected of causing genetic defects |
| H361f | Suspected of damaging fertility |
| H373 | May cause damage to organs through prolonged or repeated exposure |
| H411 | Toxic to aquatic life with long lasting effects |
| H412 | Harmful to aquatic life with long lasting effects |

Training requirements for workers

No special training requirements.

SECTION 1: Identification of Substance/ Preparation and Company

1.2 Product identifier

UPS 210 CR EFFICIENCY CERAMIC BASE

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

Epoxy Resin with inert metallic fillers

1.3 Details of the supplier of the safety data sheet

Unique Polymer Systems LTD, Unit 1 Bankside Industrial Estate, Ledbury, Herefordshire, HR8 2DR

Tel: +44 (0) 1531 636300

Email: info@uniquepolymersystems.com

1.4 Emergency telephone number

+44 (0) 1531 636300 (9am to 5pm)

SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture

Classification in accordance with the Dangerous Preparations Directive 1999/45/EC

Xi; R36/38 Irritating to eyes and skin

R43 May cause sensitisation by skin contact

N; R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Classification in accordance with the Classification Labelling and Packaging Regulation EC (no) 1272/2008

Skin Irritant Category 2 H315 Causes skin irritation

Eye Irritant Category 2 H319 Causes serious eye irritation

Skin Sensitiser Category 1 H317 May cause an allergic skin reaction

Aquatic Chronic Category 2 H411 Toxic to aquatic life with long lasting effects

2.2 Label elements

Labelling in accordance with the Classification Labelling and Packaging Regulation EC (no) 1272/2008



Pictograms:

Signal Word:

WARNING

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Hazard statements:

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

Precautionary statements:

- P280: Wear protective gloves/protective clothing/eye protection/face 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 as hazardous waste**

2.3 Other hazards

May cause irritation to the eyes and skin, and if ingested, to the gastrointestinal tract. May cause allergic skin reaction.

If released into watercourses in sufficient quantities may be toxic to aquatic life. None of the components are considered to be Persistent, Bioaccumulative and Toxic (PBT) or very Persistent, very Bioaccumulative (vPvB).

SECTION 3: Composition/ Information on Ingredients

3.1 Substances

Not applicable, product is a mixture.

3.2 Mixtures

Contains the following hazardous components above thresholds of concern:

| Hazardous Components | Cas Number | % | Classification according to Regulation (EC) No 1272/2008 | Classification according to Directive 67/548/EEC |
|---|------------|--------|--|--|
| Reaction product Bisphenol F- (epichlorhydrin) | 28064-14-4 | 10-30% | Skin Irrit. 2 H315, Skin Sens. 1 H317, Aquatic Chronic 2 H411 | Xi; R38-43-51/53 |
| Reaction product bisphenol-A- (epichlorhydrin) epoxy resin (number average molecular weight <= 700) | 25068-38-6 | 10-30% | Skin Irrit. 2 H315, Eye Irrit. 2 H319, Skin Sens. 1 H317, Aquatic Chronic 2 H411 | Xi; R36/38-43-51/53 |

See section 16 for full description of R phrases and H statements.

SECTION 4: First Aid Measures

4.1 Description of first aid measures

Summon immediate medical assistance after contact with skin, eyes, inhalation or ingestion

- Eye:** Flush eyes with plenty of running water for several minutes, whilst gently holding the eyelids open. Seek medical attention if irritation persists.
- Skin:** Remove product and contaminated clothing and wash area with water, seek medical advice. Wash contaminated clothing before re-use.
- Ingestion:** Drink plenty of water, DO NOT INDUCE VOMITING. Seek medical attention immediately.
- Inhalation:** Remove patient to fresh air. If breathing has stopped give assisted respiration. Prevent aspiration of vomit. Turn victims head to one side. Seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Eye Contact: Sign/ Symptoms may include redness, tearing, pain.

Skin Contact: Sign/ Symptoms may include localised redness, swelling, itching

Inhalation: Sign/ Symptoms may include cough, sneezing, nasal discharge, tightness of chest, headache, hoarseness and nose and throat irritation.

Ingestion: Signs/ Symptoms may include irritation of the mouth, throat, nausea, vomiting.

4.3 Indication of any immediate medical attention and special treatments needed

Symptomatic treatment as required

SECTION 5: Fire Fighting Measures

5.1 Extinguishing media

Ignition will give rise to class B Fire, in case of fire use Water sprays, Dry chemical, CO2 or Alcohol foam

5.2 Special hazards arising from the substance or mixture

Sudden reaction and fire may result if mixed with an oxidizing agent.

5.3 Advice for fire fighters

Wear Self-contained breathing apparatus, rubber boots, gloves and body suit

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Remove all unnecessary personnel from the area. Ventilate the area if possible. Wear suitable protective clothing including chemical resistant gloves and coveralls. If vapour concentrations are high, respiratory protective equipment may be required. See section 8 for more information.

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6.2 Environmental precautions

Prevent entry into sewers and watercourses. If product enters sewers or watercourses, inform the appropriate environmental authorities.

6.3 Methods and materials for containment and cleaning up

Scrape up and transfer into a suitable container. Wash area with water.

6.4 References to other sections

Refer to section 5, 8 and 13 for Protective Measures and Disposal.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

Avoid contact with skin, eyes and clothing. Handle in well ventilated area. Avoid breathing vapours. Wash hands after contact.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a cool, well ventilated area. Keep away from oxidizers, heat or flames.

7.4 Specific end uses(s)

No industrial or sector specific guidance available.

SECTION 8: Exposure Controls/ Personal Protection

8.1 Control parameters

| Substance Name | 8 hour exposure limit | 15 min exposure limit | Notes, Source |
|--|-----------------------|-----------------------|---------------|
| Talc (magnesium silicate), respirable dust | 1 mg/m ³ | — | EH40, 2011 |

8.2 Exposure controls

Engineering controls

Adequate ventilation should be provided so that exposure limits are not exceeded.

Respiratory:

Not normally required. If significant aerosols are likely to be generated a suitable respirator may be required. Suggested filter type AP2.

Hand Protection

Wear suitable chemical resistant gloves. Nitrile or neoprene gloves may be suitable, but glove manufacturers' specifications should always be checked first. Change gloves in accordance with manufacturer recommendations. If gloves are damaged during use, remove immediately and wash hands before replacing with new gloves.

Skin Protection:

Avoid Skin Contact; use disposable coveralls

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Eye Protection: Avoid Eye Contact; use safety goggles meeting the requirements of BS EN166 3, when handling this product

Environmental Exposure controls Take suitable measures to prevent entry into drains, sewers and watercourses.

SECTION 9: Physical/ Chemical Properties

9.1 Information on basic physical and chemical properties

| | |
|---|---|
| Appearance: | Grey Paste |
| Odour: | Weak |
| Odour threshold: | No data |
| PH: | Neutral |
| Melting Point: | No data |
| Boiling Point/ Range: | 170C |
| Flash Point; | >150C |
| Evaporation Rate: | No data |
| Flammability: | Not applicable |
| Upper/lower flammability limits: | No data |
| Vapour Pressure: | No data |
| Vapour density: | No data |
| Relative density: | 2.7g/cm ³ at 20C |
| Solubility in water: | Insoluble in water |
| Solubility in other solvents: | Soluble in organic solvents |
| Partition Coefficient: | Log Kow 3-5 (estimated) (Bisphenol A/F epoxy resin) |
| Autoignition temperature: | Above boiling point |
| Decomposition temperature: | No data |
| Viscosity: | Thick paste |
| Explosive properties: | Not classified as explosive |
| Oxidising properties: | Not classified as oxidising |

9.2 Other information

None.

SECTION 10: Stability And Reactivity

10.1 Reactivity

Not considered to be a reactive product

10.2 Chemical stability

Stable

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10.3 Possibility of hazardous reactions

Hazardous Polymerisation is not likely to occur.

10.4 Conditions to avoid

Excessive heat.

10.5 Incompatible materials

Acids - reaction accompanied by large heat release occurs when the product is mixed with acids

10.6 Hazardous decomposition products

None identified.

SECTION 11: Toxicological Information

11.1 Information on toxicological effects

This product has not been tested. Judgements on the expected toxicity of this product have been made based upon consideration of its major components.

| | |
|------------------------------------|---|
| (a) acute toxicity | Based on consideration of the components, the mixture is not expected to be harmful by inhalation, ingestion or in contact with skin. The ATE for the mixture is expected to be >2000 mg/kg |
| (b) skin corrosion/irritation | Based on consideration of the components, the mixture is expected to be irritating to skin. |
| (c) serious eye damage/irritation | Based on consideration of the components, the mixture is expected to be irritating to eyes. |
| (d) respiratory/skin sensitisation | The product contains the following known sensitisers: Bisphenol A epoxy resin, Persons previously sensitized to amines may develop a cross sensitization reaction to certain other amines. |
| (e) germ cell mutagenicity | Contains no substances identified as mutagens. |
| (f) carcinogenicity | Contains no substances identified as carcinogens. |
| (g) reproductive toxicity | Resins based on Bisphenol A did not cause adverse effects in animal tests. |
| (h) STOT-single exposure | Target organ toxicity is not expected with this product. |
| (i) STOT-repeated exposure | Target organ toxicity is not expected with this product. |
| (j) aspiration hazard | Not applicable. |

SECTION 12: Ecological Information

This product has not been tested. Judgements on the expected toxicity of this product have been made based upon consideration of its major components.

12.1 Toxicity

This product contains components which are considered to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. Once cured the toxicity of the product is expected to decrease.

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Supercedes: 13th November 2013

Data for Component: Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight <= 700)

Fish Acute & Prolonged Toxicity

LC50, Oncorhynchus mykiss (rainbow trout), semi-static test, 96 h: 2 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, Daphnia magna (Water flea), static test, 48 h, immobilization: 1.8 mg/l

Aquatic Plant Toxicity

ErC50, Scenedesmus capricornutum (fresh water algae), static test, Growth rate inhibition, 72 h: 11 mg/l

Toxicity to Micro-organisms

IC50; Bacteria, 18 h: > 42.6 mg/l

Aquatic Invertebrates Chronic Toxicity Value

Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, NOEC: 0.3 mg/l

12.2 Persistence and degradability

This product is not expected to be readily biodegradable.

Data for Component: Reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight <= 700)

| Biodegradation | Exposure Time | Method | 10 Day Window |
|----------------|---------------|----------------|----------------|
| 12 % | 28 d | OECD 302B Test | Not applicable |

12.3 Bioaccumulative potential

This product is expected to have a low-moderate bioaccumulation potential.

12.4 Mobility in soil

Monbility of the uncured product is expected to be low. Cured product is expected to be immobile.

12.5 Results of PBT and vPvB assessment

None of the components are known to be PBT or vPvB.

12.6 Other adverse effects

None known.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

In uncured state, dispose as chemical waste in accordance with local regulations. Waste from this product may present long term environmental hazards. Thus landfill sites must be considered less acceptable than incineration.

In cured state when mixed correctly with the activator component, dispose as solid waste

Empty containers should be disposed of as chemical waste.

SECTION 14: Transport Information

General: Transport and labelling requirements will alter depending on the size of the packaging. Please refer to local transport regulations.

| | ADR | IMDG | ICAO |
|---|--|--|--|
| 14.1 UN Number | 3077 | 3077 | 3077 |
| 14.2 UN Proper shipping name | Environmentally hazardous substance, solid, N.O.S. (epoxy resin) | Environmentally hazardous substance, solid, N.O.S. (epoxy resin) | Environmentally hazardous substance, solid, N.O.S. (epoxy resin) |
| 14.3 Transport hazard class(es) | 9 | 9 | 9 |
| 14.4 Packing group | III | III | III |
| 14.5 Environmental hazards | Environmentally hazardous | Marine Pollutant | Environmentally hazardous |
| 14.6 Special precautions for user | HIN 90 | EmS F-A, S-F | None |
| 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable | Not applicable | Not applicable |

SECTION 15: Regulatory Information

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

All components are listed as existing substances in Europe

All components are listed, or are exempt from listing on the TCSA Inventory

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out for this product.

SECTION 16: Other Information

Revision information:

Reformatted in accordance with Regulation 453/2010 and Regulation 1272/2008.

List of Abbreviations used in this SDS:

| | |
|-----|--|
| CAS | Chemical Abstracts Service |
| CLP | Classification, Labelling and Packaging Regulation (EC) no 1272/2008 |
| DSD | Dangerous Substances Directive 67/548/EEC |
| DPD | Dangerous Preparations Directive 1999/45/EC |
| EC | European Community/Commission |

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Supercedes: 13th November 2013

PBT Persistent, Bioaccumulative and Toxic
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) no 1907/2006
vPvB very Persistent, very Bioaccumulative

References:

ECHA Classification and Labelling inventory
ECHA database of disseminated registration dossiers
Supplier's Safety Data Sheets

Method used for classification of mixtures:

Ingredient based approaches

R Phrases and H Statements used in Section 3

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.

R36/38 Irritating to eyes and skin.
R38 May be irritating to skin
R43 May cause sensitization by skin contact.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Training requirements for workers

No special training requirements.