

SAFETY DATA SHEET

CER RESIN

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

PRODUCT NAME CER RESIN
 SUPPLIER NAME Eli-Chem Resins U.K Ltd
 Astra House, The Common
 Guildford Rd., Cranleigh
 Surrey, GU6 8RZ, United Kingdom
 t +44 (0) 1483 26 66 36 or 37
 f +44 (0) 1483 26 66 50
 m +44 (0) 77 11 66 9607

2 HAZARDS IDENTIFICATION

CLASSIFICATION (1999/45) Xi;R36/38. R43. N;R51/53.

CLASSIFICATION (EC 1272/2008)

| | |
|---------------|--|
| Physical | Not classified. |
| Health | Skin Irrit. 2 - H315;Eye Irrit. 2 - H319;Skin Sens. 1 - H317 |
| Environmental | Aquatic Chronic 2 - H411 |

LABEL IN ACCORDANCE WITH (EC) NO. 1272/2008



SIGNAL WORD Warning

CONTAINS Alkyl glycidyl ether
 EPOXY RESIN (Number average MW <= 700)

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/protective clothing/eye protection/face protection. |
| P305/351/338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P313 | Get medical advice/attention. |
| P501 | Dispose of contents/container to ... |
| EUP205 | Contains epoxy constituents. May produce an allergic reaction. |

SUPPLEMENTARY PRECAUTIONARY STATEMENTS

| | |
|----------|--|
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray. |
| P264 | Wash ... thoroughly after handling. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |
| P302/352 | IF ON SKIN: Wash with plenty of soap and water. |

CER RESIN

| | |
|----------|--|
| P321 | Specific treatment (see ... on this label). |
| P332/313 | If skin irritation occurs: Get medical advice/attention. |
| P333/313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P337 | If eye irritation persists: |
| P362 | Take off contaminated clothing and wash before reuse. |
| P363 | Wash contaminated clothing before reuse. |
| P391 | Collect spillage. |

3 COMPOSITION/INFORMATION ON INGREDIENTS

| | |
|---|---|
| Alkyl glycidyl ether | 10-13% |
| CAS-No.: 68081-84-5 | EC No.: |
| CLASSIFICATION (67/548) Xi;R36/38. N;R51/53. R43. | |
| EPOXY RESIN (Number average MW <= 700) | 90-95% |
| CAS-No.: 25068-38-6 | EC No.: 500-033-5 |
| CLASSIFICATION (EC 1272/2008) Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411 | CLASSIFICATION (67/548) R43 Xi;R36/38 N;R51/53 |

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16

4 FIRST-AID MEASURES**GENERAL INFORMATION**

Get medical attention if any discomfort continues. Consult a physician for specific advice. CAUTION! First aid personnel must be aware of own risk during rescue!

INHALATION

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

Immediately rinse mouth and provide fresh air. Get medical attention immediately!

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Followed by warm water rinse. Get medical attention if any discomfort continues.

EYE CONTACT

Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention immediately. Continue to rinse.

5 FIRE-FIGHTING MEASURES**EXTINGUISHING MEDIA**

Extinguish with foam, carbon dioxide, dry powder or water fog.

SPECIAL FIRE FIGHTING PROCEDURES

Water spray should be used to cool containers. Keep run-off water out of sewers and water sources. Dike for water control.

SPECIFIC HAZARDS

When heated and in case of fire, very toxic vapours/gases may be formed.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6 ACCIDENTAL RELEASE MEASURES

CER RESIN**PERSONAL PRECAUTIONS**

Wear protective clothing as described in Section 8 of this safety data sheet. In case of inadequate ventilation, use respiratory protection.

ENVIRONMENTAL PRECAUTIONS

Do not discharge into drains, water courses or onto the ground. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

SPILL CLEAN UP METHODS

Absorb spillage with non-combustible, absorbent material. Ensure that waste and contaminated materials are collected and removed from the work area as soon as possible in a suitably labelled container. For waste disposal, see section 13.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Mechanical ventilation or local exhaust ventilation is required. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry and cool place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**PROTECTIVE EQUIPMENT****ENGINEERING MEASURES**

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

If ventilation is insufficient, suitable respiratory protection must be provided.

HAND PROTECTION

The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

EYE PROTECTION

Wear approved safety goggles.

HYGIENE MEASURES

When using do not eat, drink or smoke.

9 PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|--------------------|----------------------------|------------------|-----------|
| APPEARANCE | Viscous liquid | | |
| COLOUR | Clear | | |
| ODOUR | Mild | | |
| SOLUBILITY | Slightly soluble in water. | | |
| BOILING POINT (°C) | >200 | RELATIVE DENSITY | 1.1 |
| VAPOUR PRESSURE | <1 | VISCOSITY | 1200 mPas |
| FLASH POINT (°C) | >100 | | |

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions and recommended use.

MATERIALS TO AVOID

Strong acids. Strong oxidising substances.

HAZARDOUS DECOMPOSITION PRODUCTS

None under normal conditions.

11 TOXICOLOGICAL INFORMATION

CER RESIN**INGESTION**

Irritating. May cause nausea, stomach pain and vomiting.

SKIN CONTACT

Irritating to skin.

EYE CONTACT

Irritating to eyes.

HEALTH WARNINGS

May cause sensitisation by skin contact.

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.

BIOACCUMULATION

No data available on bioaccumulation.

DEGRADABILITY

There are no data on the degradability of this product.

13 DISPOSAL CONSIDERATIONS**GENERAL INFORMATION**

Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local Waste Disposal Authority.

DISPOSAL METHODS

Dispose of waste and residues in accordance with local authority requirements. Incinerate with provision for removal of effluent gases by scrubber.

14 TRANSPORT INFORMATION

| | | | |
|----------------------|---|-------------------------|---|
| UK ROAD CLASS | 9 | | |
| PROPER SHIPPING NAME | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. | | |
| UN NO. ROAD | 3082 | UK ROAD PACK GR. | III |
| ADR CLASS NO. | 9 | ADR CLASS | Class 9: Miscellaneous dangerous substances and articles. |
| ADR PACK GROUP | III | TUNNEL RESTRICTION CODE | (E) |
| HAZARD No. (ADR) | 90 | ADR LABEL NO. | 9 |
| HAZCHEM CODE | 3Z | CEFIC TEC(R) NO. | 90GM6-III |
| RID CLASS NO. | 9 | RID PACK GROUP | III |
| UN NO. SEA | 3082 | IMDG CLASS | 9 |
| IMDG PACK GR. | III | EMS | F-A, S-F |
| UN NO. AIR | 3082 | AIR CLASS | 9 |
| AIR PACK GR. | III | | |

15 REGULATORY INFORMATION**UK REGULATORY REFERENCES**

Health and Safety at Work Act 1974. The Control of Substances Hazardous to Health Regulations 2002 (S.I 2002 No. 2677) with amendments. Chemicals (Hazard Information & Packaging) Regulations.

ENVIRONMENTAL LISTING

No listing noted.

CER RESIN

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EC. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

STATUTORY INSTRUMENTS

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716). Control of Substances Hazardous to Health.

APPROVED CODE OF PRACTICE

Safety Data Sheets for Substances and Preparations. Classification and Labelling of Substances and Preparations Dangerous for Supply.

GUIDANCE NOTES

Workplace Exposure Limits EH40. Introduction to Local Exhaust Ventilation HS(G)37. CHIP for everyone HSG(108).

NATIONAL REGULATIONS

The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002. No. 1689.

Workplace Exposure Limits 2005 (EH40)

Health and Safety at Work Act (As Amended) 1974

Control of Substances Hazardous to Health Regulations 2002 (as amended)

16 OTHER INFORMATION

ISSUED BY

HS&E Manager.

REVISION DATE 25/11/2013

REV. NO./REPL. SDS GENERATED 5

SDS NO.

SAFETY DATA SHEET STATUS

Approved.

RISK PHRASES IN FULL

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

HAZARD STATEMENTS IN FULL

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.

DISCLAIMER

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.

SAFETY DATA SHEET

CER Hardener

10/13

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

1.1 Product identifier

Product name : CER Hardener
EC number : 500-105-6
Chemical name : Propylidynetrimethanol, propoxylated, reaction products with ammonia
REACH Registration number :
Registration number / Legal entity : 1-2119556886-20-0000
 Eli-Chem Resins U.K Ltd
 Astra House, The Common
 Guildford Rd., Cranleigh
 Surrey, GU6 8RZ
 Tel: +44 (0) 1483 26 66 36 or 37
 Fax: +44 (0) 1483 26 66 50
CAS number : 39423-51-3
Product code : CER Hardener
Product description : Amine.
 Not available.

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

| Identified uses |
|---|
| <input checked="" type="checkbox"/> The use of Trimethylolpropanepoly(oxypropylene)triamine as a reactant or intermediate - Industrial Formulation of Trimethylolpropanepoly(oxypropylene)triamine - Industrial Processing aid - Industrial - Trimethylolpropanepoly(oxypropylene)triamine Professional use - Trimethylolpropanepoly(oxypropylene)triamine |

1.3 Details of the supplier of the safety data sheet

Supplier :
 Eli-Chem Resins U.K Ltd
 Astra House, The Common
 Guildford Rd., Cranleigh
 Surrey, GU6 8RZ United Kingdom
 Tel: +44 (0) 1483 26 66 36 or 37
e-mail address of person responsible for this SDS : aram.friedrich@elichem.co.uk

1.4 Emergency telephone number

Supplier
Telephone number : EUROPE: +32 35 75 1234
 USA: +1/800/424.9300
 ASIA: +65 6542 9595
 China: +86 20 39377888
 India +91 22 40506333
 Australia: 1800 786 152
 New Zealand: 0800 767 437

CER Hardener

2/16

Date of printing : 26 February 2013 **(M)SDS no.** : 1
Date of issue : 26 February 2013 **Version** : 7

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : UVCB

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Acute Tox. 4, H302
 Acute Tox. 4, H312
 Eye Dam. 1, H318
 Aquatic Chronic 2, H411

Classification according to Directive 67/548/EEC [DSD]

Xn; R21/22
 Xi; R41
 N; R51/53

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : Harmful if swallowed or in contact with skin.
 Causes serious eye damage.
 Toxic to aquatic life with long lasting effects.

Precautionary statements

General : Not applicable.

Prevention : Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

Response : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Storage : Not applicable.

Disposal : Not applicable.

Supplemental label elements : Not applicable.

Supplemental label elements : None.

Special packaging requirements

Containers to be fitted with child-resistant fastenings : Not applicable.

Tactile warning of danger : Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII : PBT: No.
 P: No. B: No. T: No.

CER Hardener

3/16

Date of printing : 26 February 2013 (M)SDS no. : 1
 Date of issue : 26 February 2013 Version : 7

SECTION 2: Hazards identification

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : vPvB: No.
 vP: No. vB: No.
 Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.1 Substances : UVCB

| Product/ingredient name | Identifiers | % | Classification | | Type |
|--|--|--------|--|--|------|
| | | | 67/548/EEC | Regulation (EC) No. 1272/2008 [CLP] | |
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | CAS: 39423-51-3 EC: 500-105-6 RRN: 01-2119556886-20 | 60-100 | Xn; R21/22 Xi; R41 N; R51/53 See Section 16 for the full text of the R-phrases declared above. | Acute Tox. 4, H302 Acute Tox. 4, H312 Eye Dam. 1, H318 Aquatic Chronic 2, H411 See Section 16 for the full text of the H statements declared above. | [A] |

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

- [*] Substance
- [A] Constituent
- [B] Impurity
- [C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

Other means of identification

| REACH Product name | CAS no. | Other | CAS no. |
|--|------------|--|---------|
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | 39423-51-3 | Trimethylolpropane poly(oxypropylene) triamine | |

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

CER Hardener

4/16

| | | | |
|-------------------------|--------------------|-------------------|-----|
| Date of printing | : 26 February 2013 | (M)SDS no. | : 1 |
| Date of issue | : 26 February 2013 | Version | : 7 |

SECTION 4: First aid measures

- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Harmful in contact with skin.
- Ingestion** : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : Symptomatic treatment and supportive therapy as indicated. Following severe exposure the patient should be kept under medical review for at least 48 hours.

CER Hardener

5/16

| | | | |
|-------------------------|--------------------|-------------------|-----|
| Date of printing | : 26 February 2013 | (M)SDS no. | : 1 |
| Date of issue | : 26 February 2013 | Version | : 7 |

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

5.3 Advice for firefighters

Special precautions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Additional information : Not explosive

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

CER Hardener

6/16

| | | | |
|-------------------------|--------------------|-------------------|-----|
| Date of printing | : 26 February 2013 | (M)SDS no. | : 1 |
| Date of issue | : 26 February 2013 | Version | : 7 |

SECTION 6: Accidental release measures

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Separate from acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

CER Hardener

7/16

Date of printing : 26 February 2013 (M)SDS no. : 1
 Date of issue : 26 February 2013 Version : 7

SECTION 8: Exposure controls/personal protection

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived effect levels

| Product/ingredient name | Type | Exposure | Value | Population | Effects |
|--|------|----------------------|------------------------|------------|----------|
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | DNEL | Long term Dermal | 1.6 mg/kg bw/day | Workers | Systemic |
| | DNEL | Long term Inhalation | 14 mg/m ³ | Workers | Systemic |
| | DNEL | Long term Inhalation | 3.48 mg/m ³ | Consumers | Systemic |
| | DNEL | Long term Dermal | 0.8 mg/kg bw/day | Consumers | Systemic |

Predicted effect concentrations

| Product/ingredient name | Type | Compartment Detail | Value | Method Detail |
|--|------|------------------------|--------------|--------------------------|
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | PNEC | Fresh water | 0.0044 mg/l | Assessment Factors |
| | PNEC | Marine | 0.00044 mg/l | Assessment Factors |
| | PNEC | PNECintermittent | 0.044 mg/l | Assessment Factors |
| | PNEC | Fresh water sediment | 0.02 mg/kg | Equilibrium Partitioning |
| | PNEC | Marine water sediment | 0.002 mg/kg | Equilibrium Partitioning |
| | PNEC | Soil | 0.002 mg/kg | Equilibrium Partitioning |
| | PNEC | Sewage Treatment Plant | 10 mg/l | Assessment Factors |

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

CER Hardener

8/16

| | | | |
|-------------------------|--------------------|-------------------|-----|
| Date of printing | : 26 February 2013 | (M)SDS no. | : 1 |
| Date of issue | : 26 February 2013 | Version | : 7 |

SECTION 8: Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Use gloves approved to relevant standards e.g. EN 374 (Europe), F739 (US). Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material and dexterity. Always seek advice from glove suppliers. Additional information can be found for instance at www.gisbau.de.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : In case of inadequate ventilation wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Liquid.
- Colour** : Colourless to light yellow.
- Odour** : Ammoniacal.
- Odour threshold** : Not available.
- pH** : 11.6 [Conc. (% w/w): 5%]
- Melting point/freezing point** : Not available.
- Initial boiling point and boiling range** : Not available.
- Flash point** : Closed cup: 218.5°C
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Upper/lower flammability or explosive limits** : Not available.
- Vapour pressure** : Not available.
- Vapour density** : >1 [Air = 1]
- Relative density** : Not available.
- Solubility(ies)**

CER Hardener

9/16

Date of printing : 26 February 2013 **(M)SDS no.** : 1
Date of issue : 26 February 2013 **Version** : 7

SECTION 9: Physical and chemical properties

Water solubility : 562 g/l
 20 deg C

Other : Soluble in the following materials: cold water.

Partition coefficient: n-octanol/ water (LogK_{ow}) : -1.13

Auto-ignition temperature : 320°C

Decomposition temperature : 236°C

Viscosity : Dynamic: Not available.
 Kinematic: 110 mm²/s
 Kinematic (40°C): Not available.

Explosive properties : Not explosive

Oxidising properties : None.

9.2 Other information

Density : 0.9658 g/cm³ [20°C (68°F)]

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
 Stable under normal conditions.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : Reactive or incompatible with the following materials: acids.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 Decomposition products may include the following materials: carbon monoxide, carbon dioxide, Nitrogen oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

| Product/ingredient name | Endpoint | Species | Result | Exposure |
|--|-------------|--------------------|-------------|----------|
| <input checked="" type="checkbox"/> Propylidynetrimethanol, propoxylated, reaction products with ammonia | LD50 Dermal | Rat - Male, Female | >1000 mg/kg | - |
| | LD50 Oral | Rat - Male, Female | 550 mg/kg | - |

Conclusion/Summary : No additional information.

Irritation/Corrosion

| | | | | |
|-------------------------|--------------------|-------------------|-----|--------------|
| CER Hardener | | | | 10/16 |
| Date of printing | : 26 February 2013 | (M)SDS no. | : 1 | |
| Date of issue | : 26 February 2013 | Version | : 7 | |

SECTION 11: Toxicological information

| Product/ingredient name | Test | Species | Route of exposure | Result |
|--|--|---------|-------------------|-----------------|
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | - | Rabbit | Skin | Irritant |
| | OECD 404 Acute Dermal Irritation/Corrosion | Rabbit | Skin | Mild irritant |
| | OECD 405 Acute Eye Irritation/Corrosion | Other | Eyes | Severe irritant |

Conclusion/Summary

Skin : Propylidynetrimethanol, propoxylated, reaction products with ammonia Irritating to skin.

Eyes : Propylidynetrimethanol, propoxylated, reaction products with ammonia Severely irritating to eyes.

Respiratory : No additional information.

Sensitiser

| Product/ingredient name | Test | Route of exposure | Species | Result |
|--|------|-------------------|------------|-----------------|
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | - | skin | Guinea pig | Not sensitizing |
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | - | skin | Guinea pig | Not sensitizing |

Conclusion/Summary

Skin : No additional information.

Respiratory : No additional information.

Mutagenicity

| Product/ingredient name | Test | Result |
|--|---|----------|
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | OECD 471 Bacterial Reverse Mutation Test | Negative |
| | OECD 482 Genetic Toxicology: DNA Damage and Repair, Unscheduled DNA Synthesis in Mammalian Cells in vitro | Negative |
| | OECD 476 In vitro Mammalian Cell Gene Mutation Test | Negative |
| | OECD 474 Mammalian Erythrocyte Micronucleus Test | Negative |

Conclusion/Summary : No additional information.

Carcinogenicity

Conclusion/Summary : No additional information.

Reproductive toxicity

| Product/ingredient name | Test | Species | Result/Result type | Target organs |
|--|---|---------|--------------------------|---------------|
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | OECD 421 Reproduction/Developmental Toxicity Screening Test | Rat | Dermal: >100 mg/kg NOAEL | - |

CER Hardener

11/16

Date of printing : 26 February 2013 **(M)SDS no.** : 1
Date of issue : 26 February 2013 **Version** : 7

SECTION 11: Toxicological information

Conclusion/Summary : No additional information.

Teratogenicity

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Inhalation : May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Skin contact : Harmful in contact with skin.

Eye contact : Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : No specific data.

Ingestion : Adverse symptoms may include the following:
stomach pains

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Conclusion/Summary : No additional information.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

| | | | | |
|-------------------------|--------------------|-------------------|-----|--------------|
| CER Hardener | | | | 12/16 |
| Date of printing | : 26 February 2013 | (M)SDS no. | : 1 | |
| Date of issue | : 26 February 2013 | Version | : 7 | |

SECTION 11: Toxicological information

Other information : Not available.

SECTION 12: Ecological information

12.1 Toxicity

| Product/ingredient name | Test | Endpoint | Exposure | Species | Result |
|--|--|---------------------------|-------------------|----------|-----------|
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | OECD 209 Activated Sludge, Respiration Inhibition Test | Acute EC50 | 30 minutes Static | Bacteria | 1000 mg/l |
| | OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test | Acute EC50 | 48 hours Static | Daphnia | 13 mg/l |
| | OECD 201 Alga, Growth Inhibition Test | Acute ErC50 (growth rate) | 72 hours Static | Algae | 4.4 mg/l |
| | OECD 203 Fish, Acute Toxicity Test | Acute LC50 | 96 hours Static | Fish | >100 mg/l |
| | OECD 201 Alga, Growth Inhibition Test | Chronic NOEC | 72 hours Static | Algae | 1 mg/l |

Conclusion/Summary : No additional information.

12.2 Persistence and degradability

| Product/ingredient name | Test | Period | Result |
|--|---|---------|--------|
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | OECD Derived from OECD 301F (Biodegradation Test) | 28 days | <5 % |

Conclusion/Summary : Propylidynetrimethanol, propoxylated, reaction products with ammonia Not readily biodegradable.

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|--|-----------------------|------------|------------------|
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | Fresh water >365 days | - | Not readily |

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|--|--------------------|-----|-----------|
| Propylidynetrimethanol, propoxylated, reaction products with ammonia | -1.13 | - | low |

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : PBT: No.
P: No. B: No. T: No.

| | | | | |
|-------------------------|--------------------|-------------------|-----|--------------|
| CER Hardener | | | | 13/16 |
| Date of printing | : 26 February 2013 | (M)SDS no. | : 1 | |
| Date of issue | : 26 February 2013 | Version | : 7 | |

SECTION 12: Ecological information

vPvB : vPvB: No.
vP: No. vB: No.

12.6 Other adverse effects : No known significant effects or critical hazards.

12.7 Other ecological information

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

| Waste code | Waste designation |
|------------|--|
| 07 01 99 | wastes not otherwise specified |
| 16 03 05* | organic wastes containing dangerous substances |

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

| | 14.1 UN number | 14.2 UN proper shipping name |
|----------------|----------------|--|
| ADR/RID | UN3082 | Environmentally hazardous substance, liquid, n.o.s. (TRIMETHYLOLPROPANE POLYOXYPROPYLENE TRIAMINE) |
| IMDG | UN3082 | Environmentally hazardous substance, liquid, n.o.s. (TRIMETHYLOLPROPANE POLYOXYPROPYLENE TRIAMINE). Marine pollutant |
| IATA | UN3082 | Environmentally hazardous substance, liquid, n.o.s. (TRIMETHYLOLPROPANE POLYOXYPROPYLENE TRIAMINE) |

CER Hardener

14/16

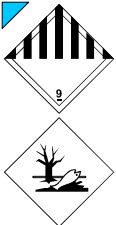
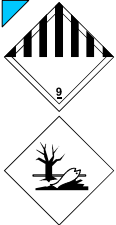
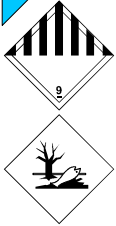
Date of printing : 26 February 2013

(M)SDS no. : 1

Date of issue : 26 February 2013

Version : 7

SECTION 14: Transport information

| | 14.3 Transport hazard class(es) | 14.4 Packing group | 14.5 Environmental hazards | 14.6 Special precautions for user | Additional information |
|----------------|---|--------------------|----------------------------|---|--|
| ADR/RID | 9  | III | Yes. | Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. | Hazard identification number 90 Special provisions 274, 335, 601 Tunnel code E |
| IMDG | 9  | III | Yes. | Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. | Emergency schedules (EmS) F-A, S-F |
| IATA | 9  | III | Yes. | Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage. | Passenger and Cargo Aircraft Quantity limitation: 450 L Packaging instructions: 964 Cargo Aircraft Only Quantity limitation: 450 L Packaging instructions: 964 |

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not applicable.

CER Hardener

15/16

| | | | |
|-------------------------|--------------------|-------------------|-----|
| Date of printing | : 26 February 2013 | (M)SDS no. | : 1 |
| Date of issue | : 26 February 2013 | Version | : 7 |

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

This product is compliant with the REACH Regulation EC 1907/2006. Huntsman has pre-registered and is registering all of the substances that it manufactures in or imports into the European Economic Area (EEA) that are subject to Title II of the REACH Regulation.

Annex XIV - List of substances subject to authorisation

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : All components are listed or exempted.
Black List Chemicals : Not listed
Priority List Chemicals : Not listed
Integrated pollution prevention and control list (IPPC) - Air : Not listed
Integrated pollution prevention and control list (IPPC) - Water : Not listed

National regulations

References : 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.

Australia inventory (AICS) : All components are listed or exempted.
Canada inventory : All components are listed or exempted.
China inventory (IECSC) : All components are listed or exempted.
Japan inventory : Listed or exempted in Japan Chemical Substance Control Law.
Korea inventory (KECI) : All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC) : All components are listed or exempted.
Philippines inventory (PICCS) : All components are listed or exempted.
United States inventory (TSCA 8b) : All components are listed or exempted.
Chemical Weapons Convention List Schedule I Chemicals : Not listed
Chemical Weapons Convention List Schedule II Chemicals : Not listed
Chemical Weapons Convention List Schedule III Chemicals : Not listed

| | | | | |
|-------------------------|--------------------|-------------------|-----|--------------|
| CER Hardener | | | | 16/16 |
| Date of printing | : 26 February 2013 | (M)SDS no. | : 1 | |
| Date of issue | : 26 February 2013 | Version | : 7 | |

SECTION 15: Regulatory information

15.2 Chemical Safety Assessment : Complete.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms :

- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

| Classification | Justification |
|-------------------------|-----------------|
| Acute Tox. 4, H302 | Expert judgment |
| Acute Tox. 4, H312 | Expert judgment |
| Eye Dam. 1, H318 | Expert judgment |
| Aquatic Chronic 2, H411 | Expert judgment |

Full text of abbreviated H statements :

- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H318 Causes serious eye damage.
- H411 Toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS] :

- Acute Tox. 4, H302 ACUTE TOXICITY: ORAL - Category 4
- Acute Tox. 4, H312 ACUTE TOXICITY: SKIN - Category 4
- Aquatic Chronic 2, H411 AQUATIC TOXICITY (CHRONIC) - Category 2
- Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1

Full text of abbreviated R phrases :

- R21/22- Harmful in contact with skin and if swallowed.
- R41- Risk of serious damage to eyes.
- R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications [DSD/DPD] :

- Xn - Harmful
- Xi - Irritant
- N - Dangerous for the environment

(M)SDS no. : 00010045
Date of printing : 2/26/2013.
Date of issue/ Date of revision : 2/26/2013.
Date of previous issue : 4/15/2011
Version : 7

Notice to reader

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.