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C-SYSTEMS 10 10 CFS comp. B Standard - SAFETY DATA SHEET - may 2020 - n° batch 142-B0 - rev.1/18



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

1.1 Product identifier

Trade name : C-10 10 CFS B Standard

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

Use of the Substance/Mixture : Epoxy Hardener

1.3 Details of the supplier of the safety data sheet

Company Cecchi Gustavo & C. srl - Via M. Coppino 253,
55049 Viareggio (LU) ITALY www.cecchi.it - info@cecchi.it

Information in case of emergency: +39 0584 383694 - info@cecchi.it

From monday to friday office hours 8:30 – 12:30, 14:00 – 18:30

1.1 Emergency telephone number

+39 0584 383694

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

| | |
|---------------------------------------|----------------------------------------------------------|
| Acute toxicity , Category 4 | H302: Harmful if swallowed. |
| Skin corrosion , Category 1B | H314: Causes severe skin burns and eye damage. |
| Serious eye damage , Category 1 | H318: Causes serious eye damage. |
| Skin sensitisation , Category 1 | H317: May cause an allergic skin reaction. |
| Chronic aquatic toxicity , Category 3 | H412: Harmful to aquatic life with long lasting effects. |

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 Harmful if swallowed.



H314 Causes severe skin burns and eye damage.
 H317 May cause an allergic skin reaction.
 H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
 P273 Avoid release to the environment.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
 P305 + P351 + P338 + P310 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/doctor.

Hazardous components which must be listed on the label:

benzyl alcohol

4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5

3,6,9-triazaundecamethylenediamine

m-phenylenebis(methylamine)

2-piperazin-1-ylethylamine

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Cycloaliphatic amine based mixture

Hazardous components

| Chemical name | CAS-No. EC-No. Registration number | Classification (REGULATION (EC) No 1272/2008) | Concentration (%) |
|----------------|------------------------------------------|--------------------------------------------------------|----------------------|
| benzyl alcohol | 100-51-6 | Acute Tox.4; H302 | >= 25 - < 30 |

| | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------|
| | 202-859-9 01-2119492630-38 | Acute Tox.4; H332 Eye Irrit.2; H319 | |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1- chloro-2,3-epoxypropane, reaction products with 3-aminomethyl-3,5,5 | 38294-64-3 | Acute Tox.4; H302 Acute Tox.4; H312 Skin Corr.1B; H314 Skin Sens.1; H317 Aquatic Chronic3; H412 | >= 20 - < 25 |
| Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)- .omega.-(2-aminomethylethoxy)- | 9046-10-0 | Skin Corr.1C; H314 Eye Dam.1; H318 Aquatic Chronic3; H412 | >= 20 - < 25 |
| 3,6,9- trizaundecamethylenediamine | 112-57-2 203-986-2 / | Acute Tox.4; H312 Acute Tox.4; H302 Skin Corr.1B; H314 Skin Sens.1; H317 Aquatic Chronic2; H411 | >= 12,5 - < 20 |
| m-phenylenebis(methylamine) | 1477-55-0 216-032-5 01-2119480150-50 | Acute Tox.4; H302 Acute Tox.4; H332 Skin Corr.1B; H314 Skin Sens.1B; H317 Aquatic Chronic3; H412 | >= 3 - < 5 |
| 2-piperazin-1-ylethylamine | 140-31-8 205-411-0 01-2119471486-30 | Acute Tox.4; H302 Skin Corr.1B; H314 Skin Sens.1; H317 Aquatic Chronic3; H412 Acute Tox.3; H311 1; H318 | >= 1 - < 2,5 |
| Toluene-4-sulphonic acid, monohydrate | 6192-52-5 | Skin Irrit.2; H315 Eye Irrit.2; H319 STOT SE3; H335 | >= 1 - < 5 |

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Show this safety data sheet to the doctor in attendance.
Keep warm and in a quiet place.
Take off all contaminated clothing immediately.
- If inhaled : Move to fresh air.
Keep patient warm and at rest.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
If breathing is irregular or stopped, administer artificial respiration.



- In case of skin contact : Wash off immediately with soap and plenty of water.
Do NOT use solvents or thinners.
If on clothes, remove clothes.
Burns must be treated by a physician.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids,
for at least 15 minutes.
If eye irritation persists, consult a specialist.
If easy to do, remove contact lens, if worn.
- If swallowed : Do NOT induce vomiting.
If a person vomits when lying on his back, place him in the
recovery position.
Call a physician immediately.
Give small amounts of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : Burn
superficial burning sensation
Redness
Severe irritation

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : The first aid procedure should be established in consultation
with the doctor responsible for industrial medicine.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Carbon dioxide (CO₂)
Foam
Dry powder
Water mist

- Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting : The pressure in sealed containers can increase under the
influence of heat.
Cool closed containers exposed to fire with water spray.
Hazardous decomposition products formed under fire
conditions.

5.3 Advice for firefighters

- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.
- Further information : In the event of fire and/or explosion do not breathe fumes.



Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Immediately evacuate personnel to safe areas.
Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Refer to protective measures listed in sections 7 and 8.
Evacuate personnel to safe areas.
Use personal protective equipment.
Ensure adequate ventilation.
Inform the responsible authorities in case of gas leakage, or of entry into waterways, soil or drains.

6.2 Environmental precautions

Environmental precautions : Do not allow uncontrolled discharge of product into the environment.
Try to prevent the material from entering drains or water courses.
Local authorities should be advised if significant spillages cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Pick up and transfer to properly labelled containers.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms.
Do not breathe vapours or spray mist.
Avoid inhalation, ingestion and contact with skin and eyes.
Wear personal protective equipment.
Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition.



Hygiene measures : Provide adequate ventilation. Wash hands and face before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers. To maintain product quality, do not store in heat or direct sunlight.

Further information on storage conditions : Protect from moisture.

Advice on common storage : Keep away from isocyanates.
Do not store near acids.
Keep away from oxidizing agents.

Other data : Stable at normal ambient temperature and pressure.

7.3 Specific end use(s)

Specific use(s) : Consult the technical guidelines for the use of this substance/mixture.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

benzyl alcohol : End Use: Workers
Exposure routes: Inhalation
Potential health effects: Short-term exposure, Systemic effects
Value: 450 mg/m³
End Use: Workers
Exposure routes: Inhalation
Potential health effects: Long-term exposure, Systemic effects
Value: 90 mg/m³
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Short-term exposure, Systemic effects
Value: 47 mg/kg
End Use: Workers
Exposure routes: Skin contact
Potential health effects: Long-term exposure, Systemic effects
Value: 9,5 mg/kg
End Use: Consumers
Exposure routes: Ingestion
Potential health effects: Short-term exposure, Systemic effects
Value: 25 mg/kg
End Use: Consumers
Exposure routes: Ingestion
Potential health effects: Long-term exposure, Systemic effects
Value: 5 mg/kg



| | |
|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| | End Use: Consumers |
| | Exposure routes: Inhalation |
| | Potential health effects: Short-term exposure, Systemic effects |
| | Value: 40,55 mg/m ³ |
| | End Use: Consumers |
| | Exposure routes: Inhalation |
| | Potential health effects: Long-term exposure, Systemic effects |
| | Value: 8,11 mg/m ³ |
| | End Use: Consumers |
| | Exposure routes: Skin contact |
| | Potential health effects: Short-term exposure, Systemic effects |
| | Value: 28,5 mg/kg |
| | End Use: Consumers |
| | Exposure routes: Skin contact |
| | Potential health effects: Long-term exposure, Systemic effects |
| | Value: 5,7 mg/kg |
| Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)- | : End Use: Workers |
| | Exposure routes: Skin contact |
| | Potential health effects: Long-term systemic effects |
| | Value: 2,5 mg/kg |
| | End Use: Workers |
| | Exposure routes: Skin contact |
| | Potential health effects: Long-term local effects |
| | Value: 0,623 mg/cm ² |
| | End Use: Consumers |
| | Exposure routes: Skin contact |
| | Potential health effects: Long-term systemic effects |
| | Value: 1,25 mg/kg |
| | End Use: Consumers |
| | Exposure routes: Skin contact |
| | Potential health effects: Long-term local effects |
| | Value: 0,311 mg/cm ² |
| | End Use: Consumers |
| | Exposure routes: Ingestion |
| | Potential health effects: Long-term systemic effects |
| | Value: 0,04 mg/kg |
| 2-piperazin-1-ylethylamine | : End Use: Workers |
| | Exposure routes: Skin contact |
| | Potential health effects: Short-term exposure, Systemic effects |
| | Value: 20 mg/kg |
| | End Use: Workers |
| | Exposure routes: Skin contact |
| | Potential health effects: Short-term exposure, Local effects |
| | Value: 0,04 mg/cm ² |
| | End Use: Workers |
| | Exposure routes: Skin contact |
| | Potential health effects: Long-term systemic effects |
| | Value: 3,3 mg/kg |
| | End Use: Workers |
| | Exposure routes: Inhalation |
| | Potential health effects: Long-term systemic effects |
| | Value: 3,6 mg/m ³ |
| | End Use: Workers |
| | Exposure routes: Skin contact |
| | Potential health effects: Long-term local effects |
| | Value: 0,006 mg/cm ² |



End Use: Consumers
 Exposure routes: Skin contact
 Potential health effects: Short-term exposure, Systemic effects
 Value: 10 mg/kg

End Use: Consumers
 Exposure routes: Inhalation
 Potential health effects: Short-term exposure, Systemic effects
 Value: 5,3 mg/m³

End Use: Consumers
 Exposure routes: Ingestion
 Potential health effects: Short-term exposure, Systemic effects
 Value: 1,5 mg/kg

End Use: Workers
 Exposure routes: Inhalation
 Potential health effects: Short-term exposure, Systemic effects
 Value: 21,4 mg/m³

End Use: Consumers
 Exposure routes: Skin contact
 Potential health effects: Short-term exposure, Local effects
 Value: 0,02 mg/cm²

End Use: Consumers
 Exposure routes: Skin contact
 Potential health effects: Long-term systemic effects
 Value: 1,7 mg/kg

End Use: Consumers
 Exposure routes: Inhalation
 Potential health effects: Long-term systemic effects
 Value: 0,9 mg/m³

End Use: Consumers
 Exposure routes: Ingestion
 Potential health effects: Long-term systemic effects
 Value: 0,3 mg/kg

End Use: Consumers
 Exposure routes: Skin contact
 Potential health effects: Long-term local effects
 Value: 0,003 mg/cm²

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

| | |
|-----------------------------------------------------------------------------------------------|------------------------|
| benzyl alcohol | : Fresh water |
| | Value: 1 mg/l |
| | Marine water |
| | Value: 0,1 mg/l |
| | Fresh water sediment |
| | Value: 5,27 mg/kg |
| | Marine sediment |
| | Value: 0,527 mg/kg |
| | Soil |
| | Value: 0,456 mg/kg |
| | Sewage treatment plant |
| | Value: 39 mg/l |
| | Intermittent releases |
| | Value: 2,3 mg/l |
| Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)- | : Fresh water |
| | Value: 0,015 mg/l |



| | | |
|----------------------------|------------------------|---------------------|
| | Marine water | Value: 0,0143 mg/l |
| | Fresh water sediment | Value: 0,132 mg/kg |
| | Marine sediment | Value: 0,125 mg/kg |
| | Soil | Value: 0,0176 mg/kg |
| | Intermittent releases | Value: 0,15 mg/l |
| | Sewage treatment plant | Value: 7,5 mg/l |
| 2-piperazin-1-ylethylamine | : Fresh water | Value: 0,058 mg/l |
| | Marine water | Value: 0,0058 mg/l |
| | Intermittent releases | Value: 0,58 mg/l |
| | Fresh water sediment | Value: 215 mg/kg |
| | Marine sediment | Value: 21,5 mg/kg |
| | Soil | Value: 42,9 mg/kg |
| | Sewage treatment plant | Value: 250 mg/l |

8.2 Exposure controls

Engineering measures

Effective exhaust ventilation system
effective ventilation in all processing areas

Personal protective equipment

Eye protection : Safety glasses with side-shields conforming to EN166
Do not wear contact lenses.
Ensure that eyewash stations and safety showers are close to the workstation location.

Hand protection

Material : Protective gloves complying with EN 374.

Skin and body protection : Protective suit

Respiratory protection : Use respirator when performing operations involving potential exposure to vapour of the product.
The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Respirator with a vapour filter (EN 141)

Protective measures : Avoid contact with skin.
Wear suitable protective equipment.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|----------------------------------------|-----------------------------------|
| Appearance | : liquid |
| Colour | : amber |
| Odour | : ammoniacal |
| Odour Threshold | : not determined |
| pH | : not determined |
| Melting point/freezing point | : Not applicable |
| Boiling point/boiling range | : > 150 °C |
| Flash point | : 100 °C |
| Evaporation rate | : not determined |
| Upper explosion limit | : Not applicable |
| Lower explosion limit | : Not applicable |
| Vapour pressure | : Not applicable |
| Relative vapour density | : not determined |
| Density | : 1,015 g/cm ³ (25 °C) |
| Bulk density | : not determined |
| Solubility(ies) | |
| Solubility in other solvents | : not determined |
| Partition coefficient: n-octanol/water | : No data available |
| Auto-ignition temperature | : Not applicable |
| Thermal decomposition | : Method: No data available |
| Viscosity | |
| Viscosity, dynamic | : 350 - 550 mPa.s (25 °C) |
| Viscosity, kinematic | : not determined |
| Explosive properties | : Not applicable |



Oxidizing properties : Not applicable

9.2 Other information

Surface tension : not determined

Sublimation point : Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with the following substances:
Acids
Strong oxidizing agents

10.4 Conditions to avoid

Conditions to avoid : No decomposition if used as directed.

10.5 Incompatible materials

Materials to avoid : Strong acids
Strong oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition products : This product may release the following:
Nitrogen oxides (NO_x)
Carbon monoxide
Carbon dioxide (CO₂)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate : 728,13 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate : > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate : > 2.000 mg/kg

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Method: Calculation method

Components:

benzyl alcohol:

Acute inhalation toxicity : LC50 (Rat, male and female): > 4.178 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: yes

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:

Acute oral toxicity : LD50 (Rat, male and female): 2.885,3 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute dermal toxicity : LD50 (Rabbit, male and female): 2.979,7 mg/kg
Method: OECD Test Guideline 402
GLP: yes

3,6,9-triazaundecamethylenediamine:

Acute oral toxicity : Acute toxicity estimate : 500 mg/kg
Method: Converted acute toxicity point estimate

Acute dermal toxicity : Acute toxicity estimate : 1.100 mg/kg
Method: Converted acute toxicity point estimate

2-piperazin-1-ylethylamine:

Acute oral toxicity : LD50 (Rat, male): 2.097 mg/kg

Acute dermal toxicity : LD50 (Rabbit, male): 866 mg/kg

Skin corrosion/irritation

Product:

Remarks: No data available

Components:

benzyl alcohol:

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation
GLP: yes

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:

Species: Rabbit
Method: OECD Test Guideline 404
Result: Corrosive

2-piperazin-1-ylethylamine:

Species: Rabbit
Result: Corrosive



Serious eye damage/eye irritation

Product:

Remarks: No data available

Components:

benzyl alcohol:

Species: Rabbit

Method: OECD Test Guideline 405

Result: Eye irritation

GLP: yes

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:

Method: OECD Test Guideline 405

Result: Risk of serious damage to eyes.

2-piperazin-1-ylethylamine:

Species: Rabbit

Result: Risk of serious damage to eyes.

Respiratory or skin sensitisation

Product:

Remarks: No data available

Components:

2-piperazin-1-ylethylamine:

Test Type: Maximisation Test

Exposure routes: Dermal

Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

Germ cell mutagenicity

Carcinogenicity

Reproductive toxicity

STOT - single exposure

STOT - repeated exposure

Repeated dose toxicity

Product:

Remarks: No data available

Aspiration toxicity**Further information****Product:**

Remarks: No data available

SECTION 12: Ecological information**12.1 Toxicity****Product:**

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Components:**benzyl alcohol:**Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 230 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yesToxicity to algae : ErC50 (Pseudokirchneriella subcapitata (green algae)): 770 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes**Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:**Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 15 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yesToxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 80 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yesToxicity to algae : NOEC (Pseudokirchneriella subcapitata (green algae)): 0,32 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

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2-piperazin-1-ylethylamine:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2.190 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 58 mg/l
aquatic invertebrates : Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): > 1.000
mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

12.2 Persistence and degradability.

Product:

Biodegradability : Remarks: No data available

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:

Biodegradability : Test Type: aerobic
Result: Not readily biodegradable.
Method: OECD Test Guideline 301B
GLP: yes

2-piperazin-1-ylethylamine:

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301F
GLP: yes

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-(2-aminomethylethyl)-.omega.-(2-aminomethylethoxy)-:

Partition coefficient: n- : log Pow: 1,34 (25 °C)
octanol/water : Method: OECD Test Guideline 117
GLP: yes

2-piperazin-1-ylethylamine:

Partition coefficient: n- : log Pow: -1,48 (20 °C)
octanol/water

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12.4 Mobility in soil

Components:

2-piperazin-1-ylethylamine:

Distribution among : Medium:Soil
environmental compartments Koc: 37000

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological : Remarks: An environmental hazard cannot be excluded in the
information event of unprofessional handling or disposal.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : In accordance with local and national regulations.
Container hazardous when empty.
Do not dispose of with domestic refuse.
Do not mix waste streams during collection.

Contaminated packaging : Empty containers should be taken to an approved waste
handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

ADR/RID/ADN : UN 2735
IMDG : UN 2735
IATA : UN 2735

14.2 UN proper shipping name

ADR/RID/ADN : AMINES, LIQUID, CORROSIVE, N.O.S.
(Polyoxypropylene Diamine)
IMDG : AMINES, LIQUID, CORROSIVE, N.O.S.
(Polyoxypropylene Diamine)
IATA : Amines, liquid, corrosive, n.o.s.
(Polyoxypropylene Diamine)

14.3 Transport hazard class(es)

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ADR/RID/ADN : 8

IMDG : 8

IATA : 8

14.4 Packing group

ADR/RID/ADN

Packing group : III

Classification Code : C7

Hazard Identification Number : 80

Labels : 8

IMDG

Packing group : III

Labels : 8

EmS Code : F-A, S-B

Remarks : IMDG Code segregation group 18 - Alkalis

IATA

Packing instruction (cargo aircraft) : 856

Packing instruction (passenger aircraft) : 852

Packing group : III

Labels : 8

14.5 Environmental hazards

ADR/RID/ADN

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

Not applicable

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

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Not applicable

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

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REACH - List of substances subject to authorisation : Not applicable
(Annex XIV)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

15.2 Chemical safety assessment

Not applicable

SECTION 16: Other information

Full text of H-Statements

| | |
|------|------------------------------------------------------|
| H302 | : Harmful if swallowed. |
| H311 | : Toxic in contact with skin. |
| H312 | : Harmful in contact with skin. |
| H314 | : Causes severe skin burns and eye damage. |
| H315 | : Causes skin irritation. |
| H317 | : May cause an allergic skin reaction. |
| H318 | : Causes serious eye damage. |
| H319 | : Causes serious eye irritation. |
| H332 | : Harmful if inhaled. |
| H335 | : May cause respiratory irritation. |
| H411 | : Toxic to aquatic life with long lasting effects. |
| H412 | : Harmful to aquatic life with long lasting effects. |

Full text of other abbreviations

| | |
|-----------------|----------------------------------------------------|
| Acute Tox. | : Acute toxicity |
| Aquatic Chronic | : Chronic aquatic toxicity |
| Eye Dam. | : Serious eye damage |
| Eye Irrit. | : Eye irritation |
| Skin Corr. | : Skin corrosion |
| Skin Irrit. | : Skin irritation |
| Skin Sens. | : Skin sensitisation |
| STOT SE | : Specific target organ toxicity - single exposure |

Further information

Training advice : Provide adequate information, instruction and training for operators.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.