HUNTSMAN

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EPOCAST® 1619 A US

| Version 1.0 | Revision Date: 02.03.2016 | SDS Number: 400001008109 | Date of last issue: - Date of first issue: 02.03.2016 | |
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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

| Product name | : EPOCAST® 1619 A US |
|--------------|----------------------|
| | |

Manufacturer or supplier's details

| Company Address | Huntsman Advanced Materials (Australia) Pty Ltd ACN:09162879 Gate 3, 765 Ballarat Road Deer Park, Victoria 3023 Australia |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Telephone | : +613 9933 6691 (CS: HAM), 1300 366 819 (Toll-free - AU), 0800 441 216 (Toll-free - NZ) |
| E-mail address | : Global_Product_EHS_AdMat@huntsman.com |
| Emergency telephone | : Australia: 1800 786 152 (ALL HOURS) International: +65 6336 6011 (ALL HOURS) |

Recommended use of the chemical and restrictions on use

| Recommended use | : Epoxy constituents |
|-----------------|----------------------|
| | |

SECTION 2. HAZARDS IDENTIFICATION

| GHS Classification Skin corrosion/irritation | : Category 2 |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Serious eye damage/eye irritation | : Category 1 |
| Skin sensitization | : Category 1 |
| Carcinogenicity | : Category 2 |
| Chronic aquatic toxicity | : Category 2 |
| GHS Label element Hazard pictograms | |
| Signal Word | : Danger |
| Hazard Statements | H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H351 Suspected of causing cancer. |

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| | | H411 Toxic to | aquatic life with long lasting effects. |
| Preca | autionary Statements | P202 Do not h and understoo P261 Avoid br P264 Wash sk P272 Contami the workplace P280 Wear ey P280 Wear pr P281 Use pers P273 Avoid re Response: P302 + P352 H P305 + P351 - water for seve and easy to do CENTER or do P308 + P313 H attention. P333 + P313 H advice/ attenti P362 Take off P391 Collect s Storage: P405 Store loo Disposal: | reathing dust/ fume/ gas/ mist/ vapours/ spray. reathing dust/ fume/ gas/ mist/ vapours/ spray. rinated work clothing must not be allowed out of . re protection/ face protection. otective gloves. sonal protective equipment as required. lease to the environment. IF ON SKIN: Wash with plenty of soap and water + P338 + P310 IF IN EYES: Rinse cautiously wit ral minutes. Remove contact lenses, if present b. Continue rinsing. Immediately call a POISON octor/ physician. IF exposed or concerned: Get medical advice/ If skin irritation or rash occurs: Get medical on. contaminated clothing and wash before reuse. spillage. of contents/ container to an approved waste |

Other hazards which do not result in classification

No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

| Chemical Name | CAS-No. | Concentration (%) |
|----------------------------------------------|------------|-------------------|
| Bisphenol A epoxy resin | 25068-38-6 | >= 30 - < 60 |
| Dibromo cresyl glycidyl ether | 75150-13-9 | < 10 |
| Butanedioldiglycidyl ether | 2425-79-8 | < 10 |
| diantimony trioxide | 1309-64-4 | < 10 |
| p-tert-butylphenyl 1-(2,3-epoxy)propyl ether | 3101-60-8 | < 10 |
| o-cresyl glycidyl ether | 2210-79-9 | < 10 |

SECTION 4. FIRST AID MEASURES

General advice

: Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.

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| If inhaled | | : If unconscious advice. | Do not leave the victim unattended. If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician. | | |
| In ca | se of skin contact | If on skin, rins | If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes. | | |
| In case of eye contact | | Remove conta Protect unharr Keep eye wide | Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist. | | |
| If swa | allowed | Keep respirato Do not give mi Never give any If symptoms p | ng immediately and call a physician. Dry tract clear. Ilk or alcoholic beverages. Ything by mouth to an unconscious person. ersist, call a physician. mediately to hospital. | | |
| Most important symptoms and effects, both acute and delayed | | : None known. | | | |
| Notes to physician | | severe exposu | : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours. | | |

SECTION 5. FIRE-FIGHTING MEASURES

| Suitable extinguishing media | : No data is available on the product itself. | |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Unsuitable extinguishing media | : High volume water jet | |
| Specific hazards during fire fighting | : Do not allow run-off from fire fighting to enter drains or water courses. | |
| Hazardous combustion products | : No data is available on the product itself. | |
| Specific extinguishing methods | : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. | |
| Special protective equipment for fire-fighters | : Wear self-contained breathing apparatus for firefighting if necessary. | |

SECTION 6. ACCIDENTAL RELEASE MEASURES



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| Personal precautions, protective equipment and emergency procedures | | : | : Use personal protective equipment. | | |
| Environmental precautions | | : | Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities. | | |
| Methods and materials for containment and cleaning up | | : | : Soak up with inert absorbent material (e.g. sand, silica g acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. | | |

SECTION 7. HANDLING AND STORAGE

| Advice on protection against fire and explosion | : | Normal measures for preventive fire protection. |
|-------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advice on safe handling | : | Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. |
| Hygiene measures | : | When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday. |
| Conditions for safe storage | : | Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards. |
| Materials to avoid | : | Strong acids Strong bases Strong oxidizing agents |

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : effective ventilation in all processing areas

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| Personal protective equipm | nt | |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Respiratory protection | In the case of vapor formation use a respirator with an approved filter. Refer to Australian/New Zealand Standard AS/NZS 1715 and AS/NZS 1716 for guidance on selection and use of respiratory devices. | |
| Hand protection | | |
| Material | : butyl-rubber | |
| Break through time | Ethyl Vinyl Alcohol Laminate (EVAL) : >8 h | |
| | Neoprene | |
| | Nitrile rubber 10 - 480 min | |
| Remarks | : The suitability for a specific workplace should be discussed with the producers of the protective gloves. | |
| Eye protection | Refer to Australian/New Zealand Standard AS/NZS 2161.1: 2000 for guidance on selection and use of protective gloves. Eye wash bottle with pure water Tightly fitting safety goggles. Wear face-shield and protective suit for abnormal processing problems. Refer to Australian/New Zealand Standard AS/NZS | |
| Skin and body protection | 1337:1992 for guidance on selection and use of protective eyeware.impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place. | |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| Appearance | : paste |
|------------------------------|-------------------------------------------------|
| Color | : off-white |
| Odor | : slight |
| Odor Threshold | : No data is available on the product itself. |
| рН | : No data is available on the product itself. |
| Melting point/freezing point | : No data available |
| Boiling point/boiling range | : No data available |
| Flash point | : > 200 °C Method: Pensky-Martens closed cup |

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| | | | |
| Evap | oration rate | : No data is av | ailable on the product itself. |
| Flam | mability (solid, gas) | : No data is av | ailable on the product itself. |
| Uppe | er explosion limit | : No data is av | ailable on the product itself. |
| Lowe | er explosion limit | : No data is av | ailable on the product itself. |
| Vapo | or pressure | : <1 hPa (20 ° | C) |
| Relat | tive vapor density | : No data is av | ailable on the product itself. |
| Relat | tive density | : 0.7 | |
| Dens | sity | : 0.6 g/cm3 (28 | 5 °C) |
| | bility(ies) ater solubility | : partly soluble | e (20 °C) |
| Sc | lubility in other solvents | : No data is av | ailable on the product itself. |
| | tion coefficient: n- nol/water | : No data is av | ailable on the product itself. |
| | ignition temperature | : No data is av | ailable on the product itself. |
| Ther | mal decomposition | : No data is av | ailable on the product itself. |
| Vis | scosity | : No data is av | ailable on the product itself. |
| deco | Accelerating mposition temperature | : No data is av | ailable on the product itself. |
| (SAD Mole |)T) cular weight | : No data avail | able |

SECTION 10. STABILITY AND REACTIVITY

| Reactivity Chemical stability Possibility of hazardous reactions | No decomposition if stored and applied as directed. No decomposition if stored and applied as directed. No decomposition if stored and applied as directed. |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conditions to avoid | : No data available |
| Incompatible materials | : Strong acids and strong bases Strong oxidizing agents |
| Hazardous decomposition | : Carbon oxides |
| products | Burning produces obnoxious and toxic fumes. |

SECTION 11. TOXICOLOGICAL INFORMATION



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| Routes | s of exposure | : No data is available on the product itself. |
| Acute | toxicity | |
| | oral toxicity - Product | : Acute toxicity estimate : > 2,000 mg/kg Method: Calculation method |
| Acute i Produc | inhalation toxicity - ct | : Acute toxicity estimate: > 20 mg/l Exposure time: 4 h Test atmosphere: vapor Method: Calculation method |
| Acute o Produc | dermal toxicity - ct | : Acute toxicity estimate : > 2,000 mg/kg Method: Calculation method |
| | toxicity (other routes of stration) | : No data available |
| Skin c | orrosion/irritation | |
| <u>Produ</u> Remar | ct: ˈks: May cause skin irrita | ation and/or dermatitis. |
| Seriou | ıs eye damage/eye irri | tation |
| Produ | | |
| Remar | ks: May cause irreversi | ble eye damage. |
| Respir | ratory or skin sensitiza | ation |
| Produ | <u>ct:</u> | |
| Remar | ks: Causes sensitizatio | ٦. |
| Assess | sment: | No data available |
| Chron | ic toxicity | |
| | cell mutagenicity | |
| Ingred | | |
| | enol A epoxy resin: | |
| | oxicity in vitro | : Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: positive |
| | | Concentration: 0 - 5000 ug/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: positive |
| | edioldiglycidyl ether: oxicity in vitro | : Concentration: 10 - 5000 ug/plate Metabolic activation: with and without metabolic activation |

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| | | Method: OECD Result: positive | Test Guideline 471 |
| | | | 1 - 100 μg/L ation: with and without metabolic activation Test Guideline 473 |
| | -butylphenyl 1-(2,3-ep toxicity in vitro | : Concentration: Metabolic active | |
| | | Concentration: Metabolic activa Method: OECD Result: positive | |
| | syl glycidyl ether: toxicity in vitro | | ation: with and without metabolic activation Test Guideline 471 |
| Inare | dients: | | |
| Bisph | enol A epoxy resin: toxicity in vivo | : Cell type: Germ Application Rou Method: OECD Result: negative | te: Oral Test Guideline 478 |
| | | Cell type: Soma Application Rou Dose: 0 - 5000 Method: OPPTS Result: negative | te: Oral mg/kg \$ 870.5395 |
| | nedioldiglycidyl ether: toxicity in vivo | Species: Mouse Cell type: Soma Application Rou Exposure time: Dose: 187.5 - 7 | tic te: Oral 4 d 50 mg/kg Test Guideline 474 |
| | | Species: Rat Cell type: Liver Application Rou | te: Oral Test Guideline 486 |
| 0.010 | syl alvoidyl ether | | |

o-cresyl glycidyl ether:

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|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Genc | Genotoxicity in vivo | | Application Ro Dose: 2000 mg Method: OECE Result: negativ | g/kg) Test Guideline 474 |
| | | | Application Ro Exposure time Dose: 500 mg/ Result: negativ | : 5 d kg |
| | | | Application Ro Exposure time Dose: 1.5 mg/ł Method: OECE Result: positive | : 8 Weeks ‹g) Test Guideline 478 |
| Inare | dients: | | | |
| Bisph Germ | nenol A epoxy resin: n cell mutagenicity- ssment | : | Weight of evide cell mutagen. | ence does not support classification as a germ |
| Germ | nedioldiglycidyl ether: n cell mutagenicity- ssment | : | Weight of evide cell mutagen. | ence does not support classification as a germ |
| Germ | syl glycidyl ether: a cell mutagenicity- ssment | : | | s from in vitro mammalian mutagenicity assays, ture activity relationship to known germ cell |
| | n cell mutagenicity- ssment | : | No data availa | ble |
| Carc | inogenicity | | | |
| Ingre Bisph Spec Appli Expo Dose Frequ Meth | edients: nenol A epoxy resin: ies: Rat, (male and femi cation Route: Oral sure time: 24 month(s) : 15 mg/kg uency of Treatment: 7 di od: OECD Test Guidelir It: negative | ays/v | | |
| Appli Expo Dose Frequ Meth | ies: Mouse, (male) cation Route: Dermal sure time: 24 month(s) : 0.1 mg/kg uency of Treatment: 3 da od: OECD Test Guidelir It: pogativo | | | |

Result: negative

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| Applica Exposu Dose: 7 Freque Method | s: Rat, (female) ttion Route: Dermal tre time: 24 month(s) 1 mg/kg ncy of Treatment: 5 da t: OECD Test Guideling negative | | | |
| Specie Applica Exposu Dose: 4 Freque Methoo Result: | ony trioxide: s: Rat, (female) ttion Route: Inhalation ure time: 12 month(s) 45 mg/m ³ ncy of Treatment: 7 ho bit OECD Test Guideline positive Organs: Lungs | | | |
| Carcino Assess | ogenicity - ment | : No data availabl | e | |
| Repro | ductive toxicity | | | |
| Ingred | ients: | | | |
| | nol A epoxy resin: on fertility | General Toxicity body weight General Toxicity body weight Symptoms: No a Method: OECD | ale and female gram per kilogram Parent: No-observed-effect level: 540 mg/l F1: No-observed-effect level: 540 mg/kg adverse effects. Test Guideline 416 ts on fertility and early embryonic | 'ng |
| diantim | ony trioxide: | | e: Oral Test Guideline 408 ts on fertility and early embryonic | |
| • | ients: nol A epoxy resin: | · Spacios: Dabbit | fomalo | |

SDS Number:

| Effects on fetal development | : Species: Rabbit, female |
|------------------------------|-------------------------------------------------------|
| | Application Route: Dermal |
| | General Toxicity Maternal: NOAEL (No observed adverse |
| | effect level): 30 mg/kg body weight |
| | Method: Other guidelines |
| | Result: No teratogenic effects. |

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| | | effect level): Method: OEC | |
| | | effect level): Method: OEC | |
| dianti | mony trioxide: | General Toxi effect level): Method: OEC | oute: Inhalation city Maternal: LOAEL (Lowest observed adverse |
| | oductive toxicity - ssment | : No data avail | able |
| No da STO | T-single exposure ata available T-repeated exposure | | |
| No da | ata available | | |
| - | ated dose toxicity | | |
| Bisph Spec NOA Appli Expo Numl | edients: nenol A epoxy resin: ies: Rat, male and fema EL (No observed adver cation Route: Ingestion sure time: 14 Weeks per of exposures: 7 d od: Subchronic toxicity | se effect level): 50 i | ng/kg |
| No-ol Appli Expo Numl | ies: Rat, male and fema bserved-effect level: 10 cation Route: Skin cont sure time: 13 Weeks ber of exposures: 5 d od: Subchronic toxicity | mg/kg | |
| NOA Appli Expo | ies: Mouse, male EL (No observed adver cation Route: Skin cont sure time: 13 Weeks | | mg/kg |

Number of exposures: 3 d

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Method: Subchronic toxicity

Butanedioldiglycidyl ether: Species: Rat, male and female NOAEL (No observed adverse effect level): 200 mg/kg Application Route: Ingestion Exposure time: 28 d Number of exposures: 7 d Method: Subacute toxicity

diantimony trioxide: Species: Rat, male and female NOEC: 1686 - 1879 mg/kg, >= 0.51 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 2,160 h Number of exposures: 6 h Method: OECD Test Guideline 452

o-cresyl glycidyl ether: Species: Rat, male and female NOEC: > 4 ppm Test atmosphere: vapor Exposure time: 4 Weeks Number of exposures: 6 h Method: OECD Test Guideline 412

Repeated dose toxicity - : No data available Assessment

Aspiration toxicity

No data available

Experience with human exposure

| General Information: | No data available |
|----------------------|-------------------|
| Inhalation: | No data available |
| Skin contact: | No data available |
| Eye contact: | No data available |
| Ingestion: | No data available |

Toxicology, Metabolism, Distribution No data available



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Neurological effects

No data available

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

| Bisphenol A epoxy resin: Toxicity to fish | LC50 (Oncorhynchus mykiss (rainbow trout)): 1.5 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 203 |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Butanedioldiglycidyl ether: Toxicity to fish | LC50 (Brachydanio rerio (zebrafish)): 24 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 203 |
| diantimony trioxide: | |
| Toxicity to fish | LC50 (Pimephales promelas (fathead minnow)): 14.4 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water |
| p-tert-butylphenyl 1-(2,3-epox Toxicity to fish | xy)propyl ether: : LC50: 7.5 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 203 |
| o-cresyl glycidyl ether: | |
| Toxicity to fish | LC50 (Oncorhynchus mykiss (rainbow trout)): 2.8 - 5.1 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water |
| | Method: OECD Test Guideline 203 |

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| Bisph Toxici | dients: enol A epoxy resin: ity to daphnia and other ic invertebrates | Exposure time: 48 h Test Type: static test |
| Toxici | edioldiglycidyl ether: ity to daphnia and other ic invertebrates | Test substance: Fresh water EC50 (Daphnia magna (Water flea)): 75 mg/l Exposure time: 24 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202 |
| Toxici | mony trioxide: ity to daphnia and other ic invertebrates | : LC50 (Other): 1.77 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water |
| Toxic | butylphenyl 1-(2,3-epox ity to daphnia and other ic invertebrates | y)propyl ether: EC50 (Daphnia magna (Water flea)): ca. 67.9 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202 |
| Toxic | syl glycidyl ether: ity to daphnia and other ic invertebrates | EC50 (Daphnia magna (Water flea)): ca. 3.3 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202 |
| Bisph | <u>dients:</u> enol A epoxy resin: ity to algae | : EC50 (Selenastrum capricornutum (green algae)): 9.4 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: EPA-660/3-75-009 |
| | edioldiglycidyl ether: ity to algae | : EL50: > 160 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 201 |
| | mony trioxide: ity to algae | EC50 (Other): > 36.6 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 201 |

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| | -butylphenyl 1-(2,3-epox ity to algae | : EbC50 Expose Test T Test st | her: 0 (Selenastrum capricornutum (green algae)): ca. 9 mg/l sure time: 72 h Type: static test substance: Fresh water od: OECD Test Guideline 201 |
| | syl glycidyl ether: ity to algae | Exposi Test Ty Test si | (Selenastrum capricornutum (green algae)): 5.1 mg/l sure time: 72 h Type: static test substance: Fresh water od: OECD Test Guideline 201 |
| M-Fa toxicit | ctor (Acute aquatic ty) | : No dat | ta available |
| dianti | <u>dients:</u> mony trioxide: ity to fish (Chronic ty) | Exposi Test T | C (Pimephales promelas (fathead minnow)): 1.13 mg/l sure time: 28 d Type: flow-through test substance: Fresh water |
| Bisph Toxic aquat | dients: enol A epoxy resin: ity to daphnia and other ic invertebrates nic toxicity) | Exposi Test T Test si | C (Daphnia magna (Water flea)): 0.3 mg/l sure time: 21 d Type: semi-static test substance: Fresh water od: OECD Test Guideline 211 |
| Toxic aquat | mony trioxide: ity to daphnia and other ic invertebrates nic toxicity) | Exposi Test T Test si | C (Daphnia magna (Water flea)): 1.74 mg/l sure time: 21 d Type: semi-static test substance: Fresh water od: OECD Test Guideline 211 |
| M-Fa toxicit | ctor (Chronic aquatic ty) | : No dat | ta available |
| Bisph | <u>dients:</u> enol A epoxy resin: ity to bacteria | Exposi Test T | (activated sludge): > 100 mg/l sure time: 3 h Fype: static test substance: Fresh water |
| | nedioldiglycidyl ether: ity to bacteria | | (activated sludge): > 100 mg/l |

Exposure time: 3 h Test Type: static test

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| | | | | Test substance: F Method: OECD Te | | |
| | | utylphenyl 1-(2,3-epox to bacteria | | opyl ether: EC50: > 1,000 mg Exposure time: 3 ł Test Type: static tu Test substance: F Method: OECD Te | n est resh water | |
| | | glycidyl ether: to bacteria | : | IC50: > 100 mg/l Exposure time: 3 l Test Type: static to Test substance: F Method: OECD Te | est resh water | |
| | Toxicity organisr | to soil dwelling ns | : | No data available | | |
| | Plant to | xicity | : | No data available | | |
| | Sedime | nt toxicity | : | No data available | | |
| | Toxicity organisr | to terrestrial ns | : | No data available | | |
| | | cology Assessment quatic toxicity | : | No data available | | |
| | Chronic | aquatic toxicity | : | No data available | | |
| | Toxicity | Data on Soil | : | No data available | | |
| | | rganisms relevant to ronment | : | No data available | | |
| | | information: available | | | | |
| | | ence and degradabil adability - Product | • | Result: Not readily | v biodegradable. | |
| | Biochen Demano | nical Oxygen d (BOD) | : | No data available | | |
| | Chemic (COD) | al Oxygen Demand | : | No data available | | |
| | BOD/CO | DD | : | No data available | | |
| | ThOD | | : | No data available | | |
| | BOD/Th | OD | : | No data available | | |

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| Version 1.0 | Revision Date: 02.03.2016 | | 9S Number: 0001008109 | Date of last issue: - Date of first issue: 02.03.2016 |
|--------------------------------|-------------------------------------------------------------------------------------------------|------|--------------------------------------------------|-------------------------------------------------------------|
| | | | | |
| Dissolv (DOC) | ved organic carbon | : | No data available | |
| Physic remova | o-chemical ability | : | No data available | |
| Stabilit | y in water | : | No data available | |
| Photoc | degradation | : | No data available | |
| Impact Treatm | t on Sewage nent | : | No data available | |
| Bioaco | cumulative potential | | | |
| | l ients: enol A epoxy resin : eumulation | : | Bioconcentration f Remarks: Does no | |
| Partitio | l ients: enol A epoxy resin: on coefficient: n- I/water | : | log Pow: 3.242 (2 pH: 7.1 Method: OECD Te | |
| Partitio | edioldiglycidyl ether: on coefficient: n- I/water | : | log Pow: -0.269 (2 pH: 6.7 Method: OECD Te | , |
| Partitio | outylphenyl 1-(2,3-epox on coefficient: n- I/water | | | |
| Partitio | yl glycidyl ether: on coefficient: n- I/water | : | log Pow: 2.5 (21 ° Method: OECD Te | |
| | ty in soil | | | |
| Mobilit | у | : | No data available | |
| Distribu | lients: enol A epoxy resin: ution among nmental compartments edioldiglycidyl ether: | : | Koc: 445. | |
| Distrib enviror p-tert-b | ution among nmental compartments outylphenyl 1-(2,3-epoxy ution among | y)pr | opyl ether: | od: OECD Test Guideline 121 nod: OECD Test Guideline 121 |



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| o-cr Dist env | ironmental compartments esyl glycidyl ether: ribution among ironmental compartments pility in soil | : | Koc: ca. 210. Met No data available | hod: OECD Test Guideline 121 |
| Env | er adverse effects ironmental fate and ways | : | No data available | |
| | ults of PBT and vPvB essment | : | No data available | |
| | ocrine disrupting | : | No data available | |
| | orbed organic bound ogens (AOX) | : | No data available | |
| | ardous to the ozone laye one-Depletion Potential | ər | Not applicable | |
| | itional ecological rmation - Product | : | unprofessional ha | hazard cannot be excluded in the event of Indling or disposal. fe with long lasting effects. |
| Glol (GV | bal warming potential /P) | : | No data available | |

SECTION 13. DISPOSAL CONSIDERATIONS

| Disposal methods | |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waste from residues | The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. |
| Contaminated packaging | : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. |

SECTION 14. TRANSPORT INFORMATION

International Regulation

IATA UN/ID No.

: UN 3082



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|----------------|----------------------|---------------------------------|---------------------------|------|----------------------------------------------------------|
| Pr | Proper shipping name | | | • | azardous substance, liquid, n.o.s. EPOXY RESIN) |
| CI | lass | | : 9 | | |
| Pa | acking | g group | : 111 | | |
| La | abels | | : Miscellan | eous | |
| | acking rcraft) | g instruction (cargo | : 964 | | |
| | | g instruction nger aircraft) | : 964 | | |
| IN | IDG | | | | |
| U | N nun | nber | : UN 3082 | | |
| Pr | roper | shipping name | N.O.S. | | LLY HAZARDOUS SUBSTANCE, LIQUID, |
| CI | lass | | : 9 | | |
| | | g group | : 111 | | |
| | abels | _ | : 9 | | |
| | mS Co | | : F-A, S-F | | |
| M | arine | pollutant | : yes | | |
| Tr | ransn | ort in bulk according | a to Annex II o | | OL 73/78 and the IBC Code |
| | - | blicable for product as | | | |
| INC | σιαμ | | supplieu. | | |

Domestic regulation

| ADG UN number Proper shipping name | : UN 3082 : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BISPHENOL A EPOXY RESIN) |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Class | : 9 |
| Packing group | : 111 |
| Labels | : 9 |
| Hazchem Code | : 3Z |

SECTION 15. REGULATORY INFORMATION

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

| Standard for the Uniform Scheduling of Medicines and Poisons | : | Schedule 5 | | |
|--------------------------------------------------------------------------------------------------|----|-----------------|---|------------|
| Australia Work Health and Saf Schedule 10 Prohibited carcin carcinogens and restricted haz | og | ens, restricted | : | Not listed |

Other international regulations

 The ingredients of this product are reported in the following inventories:

 CH INV
 : The mixture contains substances listed on the Swiss Inventory



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|------------------------------------------------------------|------------------------------|-----------------------------------------------------------|----------------------------------------------------------|--|
| | | | | |
| TSCA | | : On TSCA Inventory | | |
| DSL | | : All components of this product are on the Canadian DSL. | | |
| AICS | | : On the inventory, or in compliance with the inventory | | |
| NZIoC | | : not determined | | |
| ENCS | | : On the inventory, or in compliance with the inventory | | |
| KECI | | : On the inventory, or in compliance with the inventory | | |
| PICCS | | : On the inventory, or in compliance with the inventory | | |
| IECSC : On the inventory, or in compliance with the invent | | , or in compliance with the inventory | | |
| | | | | |

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information

| cc th or st cc re be | | The information provided in this Material 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. |
|--------------------------------------------------------------------|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sources of key data used to compile the Material Safety Data Sheet | : | Information taken from reference works and the literature., Information derived from practical experience. |
| Date format | : | dd.mm.yyyy |

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.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards,

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toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

| Product name | : EPOCAST® 1619 B US |
|--------------|----------------------|
| | |

Manufacturer or supplier's details

| Company Address | Huntsman Advanced Materials (Australia) Pty Ltd ACN:09162879 Gate 3, 765 Ballarat Road Deer Park, Victoria 3023 Australia |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Telephone | : +613 9933 6691 (CS: HAM), 1300 366 819 (Toll-free - AU), 0800 441 216 (Toll-free - NZ) |
| E-mail address | : Global_Product_EHS_AdMat@huntsman.com |
| Emergency telephone | : Australia: 1800 786 152 (ALL HOURS) International: +65 6336 6011 (ALL HOURS) |

Recommended use of the chemical and restrictions on use

| Recommended use | : Hardener |
|-----------------|------------|
| | |

SECTION 2. HAZARDS IDENTIFICATION

| GHS Classification | |
|-----------------------------------------------------------|-------------------------------------------------|
| Acute toxicity (Inhalation) | : Category 4 |
| Skin corrosion/irritation | : Category 1B |
| Serious eye damage/eye irritation | : Category 1 |
| Skin sensitization | : Category 1 |
| Reproductive toxicity | : Category 2 |
| Specific target organ systemic toxicity - single exposure | : Category 3 (Respiratory system) |
| GHS Label element | |
| Hazard pictograms | |
| Signal Word | : Danger |
| Hazard Statements | : H314 Causes severe skin burns and eye damage. |

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|----------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | H332 Harmful H335 May cau | use an allergic skin reaction. if inhaled. use respiratory irritation. ted of damaging fertility or the unborn child. |
| Preca | autionary Statements | P202 Do not h and understoo P261 Avoid br P264 Wash sk P271 Use only P272 Contam the workplace P280 Wear pr protection/ fac P281 Use per Response: P301 + P330 induce vomitir P303 + P361 immediately a shower. P304 + P340 and keep at re Immediately c P305 + P351 water for seve and easy to de CENTER or d P308 + P313 attention. P333 + P313 advice/ attenti P363 Wash co Storage: P403 + P233 tightly closed. P405 Store loo Disposal: | reathing dust/ fume/ gas/ mist/ vapours/ spray. kin thoroughly after handling. y outdoors or in a well-ventilated area. inated work clothing must not be allowed out of . otective gloves/ protective clothing/ eye be protection. sonal protective equipment as required. + P331 IF SWALLOWED: Rinse mouth. Do NOT ng. + P353 IF ON SKIN (or hair): Remove/ Take off II contaminated clothing. Rinse skin with water/ + P310 IF INHALED: Remove victim to fresh air cest in a position comfortable for breathing. all a POISON CENTER or doctor/ physician. + P338 + P310 IF IN EYES: Rinse cautiously with the read of the rest of the read of the rest o |

Other hazards which do not result in classification

No information available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous ingredients

| Chemical Name | CAS-No. | Concentration (%) |
|-----------------------------|----------|-------------------|
| Monoethanolamine | 141-43-5 | 7 - 13 |
| 4,4'-isopropylidenediphenol | 80-05-7 | >= 10 - <= 30 |

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|----------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------|----------------|
| Dieth | ylenetriamine | | 111-40-0 | >= 10 - <= 30 |
| amino | adecenoic acid (9Z)-, pethyl)-N'-[2-[(2-aminc thanediamine | | 70321-87-8 | >= 30 - <= 60 |
| | oethylpiperazine | | 140-31-8 | 7 - 13 |
| Mono | ethanolamine | | 141-43-5 | >= 0 - <= 10 |
| 4,4'-is | sopropylidenedipheno | | 80-05-7 | >= 10 - <= 30 |
| Dieth | ylenetriamine | | 111-40-0 | >= 10 - <= 30 |
| amino | adecenoic acid (9Z)-, pethyl)-N'-[2-[(2-aminc thanediamine | | 70321-87-8 | >= 60 - <= 100 |
| Amin | oethylpiperazine | | 140-31-8 | >= 0 - <= 10 |
| Mono | Monoethanolamine | | 141-43-5 | 7 - 13 |
| 4,4'-is | 4,4'-isopropylidenediphenol | | 80-05-7 | >= 10 - <= 30 |
| Dieth | Diethylenetriamine | | 111-40-0 | >= 10 - <= 30 |
| amino | 9-Octadecenoic acid (9Z)-, polymer with N-(2- aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]- 1,2-ethanediamine | | 70321-87-8 | >= 30 - <= 60 |
| amino | 9-Octadecenoic acid (9Z)-, polymer with N-(2- aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]- 1,2-ethanediamine | | 70321-87-8 | >= 60 - <= 100 |
| - | ylenetriamine | | 111-40-0 | >= 10 - < 30 |
| | sopropylidenedipheno | | 80-05-7 | >= 10 - < 30 |
| | Monoethanolamine | | 141-43-5 | < 10 |

SECTION 4. FIRST AID MEASURES

| General advice | Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance. Do not leave the victim unattended. |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If inhaled | : Consult a physician after significant exposure. If unconscious place in recovery position and seek medical advice. |
| In case of skin contact | Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. If on skin, rinse well with water. If on clothes, remove clothes. |
| In case of eye contact | Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist. |
| If swallowed | : Keep respiratory tract clear. |

fighting

products

methods

for fire-fighters

Hazardous combustion

Specific extinguishing

Special protective equipment

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| a | fost important symptoms nd effects, both acute and elayed | Never give any If symptoms pe | e vomiting. k or alcoholic beverages. thing by mouth to an unconscious person. rsist, call a physician. nediately to hospital. |
| SECT | ION 5. FIRE-FIGHTING MEA | ASURES | |
| S | uitable extinguishing media | 5 | ng measures that are appropriate to local and the surrounding environment. |
| | Insuitable extinguishing nedia | : High volume wa | ater jet |
| S | pecific hazards during fire | : Do not allow ru | n-off from fire fighting to enter drains or water |

: No data is available on the product itself.

must not be discharged into drains.

: Collect contaminated fire extinguishing water separately. This

be disposed of in accordance with local regulations.

: Wear self-contained breathing apparatus for firefighting if

Fire residues and contaminated fire extinguishing water must

courses.

necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

| Personal precautions, protective equipment and emergency procedures | : Use personal protective equipment. Ensure adequate ventilation. |
|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Environmental precautions | Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up | : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. |

SECTION 7. HANDLING AND STORAGE

| Advice on protection against | : | Normal measures for preventive fire protection. |
|------------------------------|---|-------------------------------------------------|
| fire and explosion | | |

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| Advice on safe handling | | Avoid formation of aerosol. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work room To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and nationa regulations. Persons susceptible to skin sensitization problems or asthm allergies, chronic or recurrent respiratory disease should no be employed in any process in which this mixture is being used. Do not breathe vapors or spray mist. | | | |
| Hyg | iene measures | : When using do When using do Wash hands be | | | |
| Con | ditions for safe storage | place. Containers which kept upright to p Observe label p Electrical install | tightly closed in a dry and well-ventilated ch are opened must be carefully resealed and prevent leakage. precautions. ations / working materials must comply with al safety standards. | | |
| Mate | erials to avoid | : Strong acids Strong bases Strong oxidizing | g agents | | |

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

| Ingredients | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|--------------------|---------------|-------------------------------------|---------------------------------------------------------|--------|
| Diethylenetriamine | 111-40-0 | TWA | 1 ppm 4.2 mg/m3 | AU OEL |
| | Further infor | mation: Sensitise | r, Skin absorption | |
| | | TWA | 1 ppm | ACGIH |
| Monoethanolamine | 141-43-5 | TWA | 3 ppm 7.5 mg/m3 | AU OEL |
| | | STEL | 6 ppm 15 mg/m3 | AU OEL |
| | | TWA | 3 ppm | ACGIH |
| | | STEL | 6 ppm | ACGIH |

Personal protective equipment

Respiratory protection

: In the case of vapor formation use a respirator with an approved filter.

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| Hand protection Material Break through time | | AS/NZS 17 respiratory | |
| | | Nitrile rubbe 10 - 480 mir | |
| Re | marks | | ity for a specific workplace should be discussed ducers of the protective gloves. |
| Eye protection | | 2000 for gu Eye wash b Tightly fittin Wear face-s problems. | stralian/New Zealand Standard AS/NZS 2161.1: idance on selection and use of protective gloves. ottle with pure water g safety goggles. shield and protective suit for abnormal processing stralian/New Zealand Standard AS/NZS |
| Skin | and body protection | 1337:1992 f eyeware. : impervious Choose boo | or guidance on selection and use of protective |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| Appearance | : liquid | |
|---------------------------|-----------------------------------------|--------|
| Color | : amber | |
| Odor | : ammoniacal | |
| Odor Threshold | : No data is available on the product i | tself. |
| рН | : No data is available on the product i | tself. |
| Flash point | : 171 °C Method: Cleveland open cup | |
| Evaporation rate | : No data is available on the product i | tself. |
| Flammability (solid, gas) | : No data is available on the product i | tself. |
| Upper explosion limit | : No data is available on the product i | tself. |
| Lower explosion limit | : No data is available on the product i | tself. |
| Vapor pressure | : > 1.333 hPa (20 °C) | |



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| Rela | ative vapor density | : 1 | | |
| Rela | ative density | : 0.98 | | |
| Der | sity | : No data is a | vailable on the product itself. | |
| | ubility(ies) Vater solubility | : slightly solu | ble | |
| S | olubility in other solvents | : No data is a | vailable on the product itself. | |
| | tition coefficient: n- anol/water | : No data is a | vailable on the product itself. | |
| Auto | pignition temperature | : No data is a | vailable on the product itself. | |
| The | rmal decomposition | : No data is a | vailable on the product itself. | |
| | cosity ′iscosity, dynamic | : 400 mPa.s | | |
| | -Accelerating omposition temperature DT) | : No data is a | vailable on the product itself. | |

SECTION 10. STABILITY AND REACTIVITY

| Reactivity Chemical stability Possibility of hazardous reactions | No decomposition if stored and applied as directed. No decomposition if stored and applied as directed. No decomposition if stored and applied as directed. |
|---------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conditions to avoid | : No data available |
| Hazardous decomposition products | : Carbon oxides |
| P. 0 4 4 0 0 | Burning produces obnoxious and toxic fumes. Nitrogen oxides (NOx) |

SECTION 11. TOXICOLOGICAL INFORMATION

| Routes of exposure | : No data is available on the product itself. |
|--------------------------------|--------------------------------------------------------|
| Acute toxicity Ingredients: | |
| Monoethanolamine: | : LD50 (Rat, male and female): 1,089 mg/kg |
| Acute oral toxicityIngredients | Method: OECD Test Guideline 401 |
| 4,4'-isopropylidenediphenol: | : LD50 (Rat, male and female): > 2,000 - < 5,000 mg/kg |
| Acute oral toxicityIngredients | Method: OECD Test Guideline 401 |



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| | | | | Assessment: The toxicity | substance or mixture has no acute oral |
| | | enetriamine: oral toxicityIngredients | : | LD50 (Rat, male): | : 1,620 mg/kg |
| | | ethylpiperazine: oral toxicityIngredients | : | LD50 (Rabbit, ma | le): 2,097 mg/kg |
| | | thanolamine: oral toxicityIngredients | : | LD50 (Rat, male a Method: OECD T | and female): 1,089 mg/kg est Guideline 401 |
| | | propylidenediphenol: oral toxicityIngredients | : | Method: OECD T | and female): > 2,000 - < 5,000 mg/kg est Guideline 401 substance or mixture has no acute oral |
| | | enetriamine: oral toxicityIngredients | : | LD50 (Rat, male): | : 1,620 mg/kg |
| | | ethylpiperazine: oral toxicityIngredients | : | LD50 (Rabbit, ma | ıle): 2,097 mg/kg |
| | | thanolamine: oral toxicityIngredients | : | LD50 (Rat, male a Method: OECD T | and female): 1,089 mg/kg est Guideline 401 |
| | | propylidenediphenol: oral toxicityIngredients | : | Method: OECD T | and female): > 2,000 - < 5,000 mg/kg est Guideline 401 substance or mixture has no acute oral |
| | | enetriamine: oral toxicityIngredients | : | LD50 (Rat, male): | : 1,620 mg/kg |
| | | enetriamine: oral toxicityIngredients | : | LD50 (Rat, male): | : 1,620 mg/kg |
| | | propylidenediphenol: oral toxicityIngredients | : | Method: OECD T | and female): > 2,000 - < 5,000 mg/kg est Guideline 401 substance or mixture has no acute oral |

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|----------------|-----------------------------------------------|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------|--|
| | | toxicity | | |
| | ethanolamine: oral toxicityIngredients | | ale and female): 1,089 mg/kg D Test Guideline 401 | |
| Acute Produ | inhalation toxicity - uct | Exposure time Test atmosph | | |
| Mono | dients: ethanolamine: e dermal toxicity | Method: OEC | male and female): 2,504 mg/kg D Test Guideline 402 The component/mixture is moderately toxic after with skin. | |
| | sopropylidenediphenol: e dermal toxicity | : LD50 (Rabbit, | male): ca. 6,400 mg/kg | |
| | ylenetriamine: dermal toxicity | : LD50 (Rabbit): 1,045 mg/kg GLP: no | | |
| | oethylpiperazine: e dermal toxicity | : LD50 (Rabbit) | : 866 mg/kg | |
| | ethanolamine: dermal toxicity | Method: OEC | male and female): 2,504 mg/kg D Test Guideline 402 The component/mixture is moderately toxic after with skin. | |
| | opropylidenediphenol: dermal toxicity | : LD50 (Rabbit, | male): ca. 6,400 mg/kg | |
| | ylenetriamine: e dermal toxicity | : LD50 (Rabbit) GLP: no | : 1,045 mg/kg | |
| | oethylpiperazine: e dermal toxicity | : LD50 (Rabbit) | : 866 mg/kg | |

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| PUCA | 421 @ 1013 B 02 | | | |
|--------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| ersion 0 | Revision Date: 04.03.2016 | | 0S Number: 0001012497 | Date of last issue: - Date of first issue: 04.03.2016 |
| Monoethanolamine: Acute dermal toxicity | | : LD50 (Rabbit, male and female): 2,504 mg/kg Method: OECD Test Guideline 402 Assessment: The component/mixture is moderately toxic after single contact with skin. | | |
| | sopropylidenediphenol: e dermal toxicity | : | LD50 (Rabbit, m | nale): ca. 6,400 mg/kg |
| | ylenetriamine: e dermal toxicity | : | LD50 (Rabbit): ² GLP: no | I,045 mg/kg |
| | ylenetriamine: e dermal toxicity | : | LD50 (Rabbit): ² GLP: no | I,045 mg/kg |
| | sopropylidenediphenol: e dermal toxicity | : | LD50 (Rabbit, m | nale): ca. 6,400 mg/kg |
| | pethanolamine: e dermal toxicity | : | Method: OECD | nale and female): 2,504 mg/kg Test Guideline 402 le component/mixture is moderately toxic after ith skin. |
| | e toxicity (other routes of nistration) | : | No data availab | le |
| Skin | corrosion/irritation | | | |
| <u>Prod</u> Rema | uct: arks: Extremely corrosive | e an | d destructive to ti | ssue. |
| Serio | ous eye damage/eye irri | tati | on | |
| <u>Prod</u> Rema | <u>uct:</u> arks: May cause irreversi | ble | eye damage. | |
| Resp | piratory or skin sensitiz | atio | n | |
| Prod | <u>uct:</u> arks: Causes sensitizatio | n | | |
| - | | | | |
| Asse | ssment: | N | o data available | |
| | | | | |



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| Germ | nic toxicity cell mutagenicity dients: | | | |
| Monoethanolamine: Genotoxicity in vitro | | : | Metabolic activati Method: OECD T Result: negative | on: with and without metabolic activation est Guideline 471 |
| | | | Metabolic activation Method: OECD To Result: negative | on: with and without metabolic activation est Guideline 476 |
| | | | Metabolic activati Result: negative | on: negative |
| | opropylidenediphenol: toxicity in vitro | : | Metabolic activati Result: negative | on: with and without metabolic activation |
| | bethylpiperazine: toxicity in vitro | : | Concentration: 50 Metabolic activation Method: OECD To Result: negative | on: with and without metabolic activation |
| | | | Metabolic activation Method: OECD To Result: negative | on: with and without metabolic activation est Guideline 476 |
| | | | Metabolic activation Method: OECD To Result: negative | |
| | ethanolamine: toxicity in vitro | : | Metabolic activati Method: OECD T Result: negative | on: with and without metabolic activation est Guideline 471 |
| | | | Metabolic activation Method: OECD To Result: negative | on: with and without metabolic activation est Guideline 476 |
| | | | Metabolic activation Result: negative | on: negative |
| | opropylidenediphenol: toxicity in vitro | : | Metabolic activati Result: negative | on: with and without metabolic activation |
| | bethylpiperazine: toxicity in vitro | : | Concentration: 50 Metabolic activati Method: OECD To Result: negative | on: with and without metabolic activation |

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| | | Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative |
| | | Metabolic activation: negative Method: OECD Test Guideline 482 Result: negative |
| | ethanolamine: toxicity in vitro | : Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative |
| | | Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative |
| | | Metabolic activation: negative Result: negative |
| | copropylidenediphenol: toxicity in vitro | : Metabolic activation: with and without metabolic activation Result: negative |
| | copropylidenediphenol: toxicity in vitro | : Metabolic activation: with and without metabolic activation Result: negative |
| | ethanolamine: toxicity in vitro | : Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative |
| | | Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative |
| | | Metabolic activation: negative Result: negative |
| | dients: | |
| | ethanolamine: toxicity in vivo | : Application Route: Oral Exposure time: 24 h Dose: 375 - 1500 mg/kg Method: OECD Test Guideline 474 Result: negative |
| | opropylidenediphenol: toxicity in vivo | : Method: OECD Test Guideline 474 Result: negative |
| | ylenetriamine: toxicity in vivo | : Cell type: Somatic Application Route: Oral |

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| | | Dose: 85 - 850 n Method: OECD Result: negative | Test Guideline 474 |
| | | Application Rout Result: negative | e: Oral |
| | ninoethylpiperazine: notoxicity in vivo | Dose: 175 - 560 | Test Guideline 474 |
| Monoethanolamine: Genotoxicity in vivo : Application Route: Oral Exposure time: 24 h Dose: 375 - 1500 mg/kg Method: OECD Test Guideline 474 Result: negative | | 24 h 0 mg/kg Test Guideline 474 | |
| | '-isopropylidenediphenol: notoxicity in vivo | : Method: OECD - Result: negative | Test Guideline 474 |
| | ethylenetriamine: notoxicity in vivo | : Cell type: Somat Application Rout Dose: 85 - 850 n Method: OECD | e: Oral ng/kg Test Guideline 474 |
| | | Application Rout Result: negative | e: Oral |
| | ninoethylpiperazine: notoxicity in vivo | Dose: 175 - 560 | Test Guideline 474 |
| | noethanolamine: notoxicity in vivo | : Application Rout Exposure time: 2 Dose: 375 - 150 Method: OECD Result: negative | 24 h 0 mg/kg Test Guideline 474 |
| | '-isopropylidenediphenol: notoxicity in vivo | : Method: OECD ⁻ Result: negative | |
| | ethylenetriamine: notoxicity in vivo | : Cell type: Somat Application Rout Dose: 85 - 850 n Method: OECD | e: Oral |



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| | | Result: negativ Application Rou Result: negativ | ute: Oral |
| | ylenetriamine: toxicity in vivo | : Cell type: Som Application Rou Dose: 85 - 850 Method: OECD Result: negativ | ute: Oral mg/kg 9 Test Guideline 474 |
| | opropylidenediphenol: | Application Rou Result: negativ | |
| Monoethanolamine: | | Result: negativ | e |
| | | : Application Rot Exposure time: Dose: 375 - 15 Method: OECD Result: negativ | 24 h 00 mg/kg 9 Test Guideline 474 |
| Carci | nogenicity | | |
| 4,4'-is Speci Applic Expos Frequ | dients: copropylidenediphenol: es: Rat, (male and fema cation Route: Oral sure time: 103 weeks ency of Treatment: 7 da t: negative | | |
| Speci Applic Dose: Frequ | /lenetriamine: es: Mouse, (male) cation Route: Dermal 56.3 mg/kg ency of Treatment: 3 da t: negative | aily | |
| Speci Applic Expos Frequ | opropylidenediphenol: es: Rat, (male and fema cation Route: Oral sure time: 103 weeks ency of Treatment: 7 da t: negative | | |
| Speci Applic Dose: Frequ Resul | vlenetriamine: es: Mouse, (male) cation Route: Dermal 56.3 mg/kg ency of Treatment: 3 da t: negative | | |

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4,4'-isopropylidenediphenol:

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Species: Rat, (male and female) Application Route: Oral Exposure time: 103 weeks Frequency of Treatment: 7 daily **Result:** negative Diethylenetriamine: Species: Mouse, (male) **Application Route: Dermal** Dose: 56.3 mg/kg Frequency of Treatment: 3 daily Result: negative Diethylenetriamine: Species: Mouse, (male) Application Route: Dermal Dose: 56.3 mg/kg Frequency of Treatment: 3 daily **Result:** negative 4,4'-isopropylidenediphenol: Species: Rat, (male and female) **Application Route: Oral** Exposure time: 103 weeks Frequency of Treatment: 7 daily **Result:** negative : No data available Carcinogenicity -Assessment **Reproductive toxicity** Ingredients: Monoethanolamine: Effects on fertility : Species: Rat, male and female **Application Route: Oral** Target Organs: Reproductive organs Method: OECD Test Guideline 416 Result: No effects on fertility and early embryonic development were detected. 4,4'-isopropylidenediphenol: Species: Rat, male and female **Application Route: Oral** Method: OECD Test Guideline 416 Result: Embryotoxic effects and adverse effects on the offspring were detected. Diethylenetriamine: Species: Rat, male and female **Application Route: Oral** General Toxicity Parent: NOAEL (No observed adverse effect level): 30 mg/kg wet weight Method: OECD Test Guideline 421
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| | | | |
| Amin | oethylpiperazine: | Application Rou Method: OECD | Test Guideline 422 cts on fertility and early embryonic |
| Mono | pethanolamine: | | |
| | | Application Rou Target Organs: Method: OECD | Reproductive organs Test Guideline 416 cts on fertility and early embryonic |
| 4,4'-i: | sopropylidenediphenol: | | |
| | | Application Rou Method: OECD | Test Guideline 416 toxic effects and adverse effects on the |
| Dieth | ylenetriamine: | | |
| | | Application Rou General Toxicit level): 30 mg/kg | y Parent: NOAEL (No observed adverse effect |
| Amin | oethylpiperazine: | | |
| | | Application Rou Method: OECD | Test Guideline 422 cts on fertility and early embryonic |
| Mono | pethanolamine: | | |
| | | Application Rou Target Organs: Method: OECD | Reproductive organs Test Guideline 416 cts on fertility and early embryonic |
| 4,4'-i: | sopropylidenediphenol: | | |
| | | Application Rou Method: OECD | Test Guideline 416 toxic effects and adverse effects on the |
| Dieth | ylenetriamine: | a . – | |
| | | Application Rou | nale and female ute: Oral y Parent: NOAEL (No observed adverse effect |

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| | | level): 30 mg/k Method: OECD | g wet weight Test Guideline 421 |
| Dieth | ylenetriamine: | Application Rou General Toxicit level): 30 mg/k | y Parent: NOAEL (No observed adverse effect |
| 4,4'-is | opropylidenediphenol: | Application Rom Method: OECD | Test Guideline 416 ptoxic effects and adverse effects on the |
| Mono | ethanolamine: | Application Ro Target Organs Method: OECD | Reproductive organs Test Guideline 416 cts on fertility and early embryonic |
| Mono | <u>dients:</u> ethanolamine: is on fetal development | effect level): 12 Method: OECD | ute: Oral y Maternal: NOAEL (No observed adverse 0 mg/kg body weight 7 Test Guideline 414 togenic effects. |
| | | effect level): 75 Method: OECD | ute: Dermal y Maternal: NOAEL (No observed adverse mg/kg body weight Test Guideline 414 togenic effects. |
| 4,4'-is | opropylidenediphenol: | effect level): < Method: OECD | |
| Dieth | ylenetriamine: | effect level): 10 | ute: Oral y Maternal: NOAEL (No observed adverse 0 mg/kg body weight Test Guideline 421 |

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| | | | |
| Amin | oethylpiperazine: | Application Rou General Toxicit effect level): 22 Method: OECD | nale and female ute: Oral ty Maternal: NOAEL (No observed adverse 24 - 285 mg/kg body weight 0 Test Guideline 422 togenic effects. |
| Mono | bethanolamine: | | |
| | | effect level): 12 Method: OECD | ute: Oral ty Maternal: NOAEL (No observed adverse 20 mg/kg body weight 9 Test Guideline 414 togenic effects. |
| | | effect level): 75 Method: OECD | ute: Dermal ty Maternal: NOAEL (No observed adverse 5 mg/kg body weight 9 Test Guideline 414 togenic effects. |
| 4,4'-i: | sopropylidenediphenol: | | |
| | | effect level): < Method: OECD | |
| Dieth | ylenetriamine: | | |
| | | effect level): 10 | ute: Oral ty Maternal: NOAEL (No observed adverse 00 mg/kg body weight 0 Test Guideline 421 |
| Amin | oethylpiperazine: | | |
| | | Application Rou General Toxicit effect level): 22 Method: OECD | nale and female ute: Oral ty Maternal: NOAEL (No observed adverse 24 - 285 mg/kg body weight 0 Test Guideline 422 togenic effects. |
| Mono | bethanolamine: | | |
| | | effect level): 12 Method: OECD | ute: Oral ty Maternal: NOAEL (No observed adverse 20 mg/kg body weight 9 Test Guideline 414 togenic effects. |
| | | Species: Rat | |
| | | | |

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| | | effect level): 75 | y Maternal: NOAEL (No observed adverse mg/kg body weight Test Guideline 414 |
| 4,4'-is | sopropylidenediphenol: | effect level): < | ute: Oral y Maternal: NOAEL (No observed adverse 160 mg/kg body weight r Test Guideline 416 |
| Dieth | ylenetriamine: | | |
| | , | effect level): 10 | ute: Oral y Maternal: NOAEL (No observed adverse 0 mg/kg body weight r Test Guideline 421 |
| Dieth | ylenetriamine: | effect level): 10 | ute: Oral y Maternal: NOAEL (No observed adverse 0 mg/kg body weight r Test Guideline 421 |
| 4,4'-is | sopropylidenediphenol: | effect level): < | ute: Oral y Maternal: NOAEL (No observed adverse 160 mg/kg body weight 9 Test Guideline 416 |
| Monc | bethanolamine: | effect level): 12 Method: OECD | ute: Oral y Maternal: NOAEL (No observed adverse 0 mg/kg body weight r Test Guideline 414 togenic effects. |
| | | effect level): 75 Method: OECD | ute: Dermal y Maternal: NOAEL (No observed adverse mg/kg body weight Test Guideline 414 togenic effects. |
| 4,4'-is Repre | edients: sopropylidenediphenol: oductive toxicity - ssment | | e of adverse effects on sexual function and on development, based on animal experiments. |

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| <i>4 4</i> '-isc | propylidepediphenol: | | |

| Assessment | : | Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments. |
|-----------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------|
| 4,4'-isopropylidenediphenol: Reproductive toxicity - Assessment | : | Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments. |
| 4,4'-isopropylidenediphenol: Reproductive toxicity - Assessment | : | Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments. |

STOT-single exposure

Ingredients:

Monoethanolamine: Routes of exposure: Inhalation Target Organs: Respiratory Tract Assessment: May cause respiratory irritation.

4,4'-isopropylidenediphenol: Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Diethylenetriamine: Target Organs: Respiratory Tract Assessment: May cause respiratory irritation.

Monoethanolamine: Routes of exposure: Inhalation Target Organs: Respiratory Tract Assessment: May cause respiratory irritation.

4,4'-isopropylidenediphenol:

Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Diethylenetriamine: Target Organs: Respiratory Tract Assessment: May cause respiratory irritation.

Monoethanolamine: Routes of exposure: Inhalation Target Organs: Respiratory Tract Assessment: May cause respiratory irritation.

4,4'-isopropylidenediphenol: Assessment: The substance or mixture is classified as specific target organ toxicant, single



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exposure, category 3 with respiratory tract irritation.

Diethylenetriamine: Target Organs: Respiratory Tract Assessment: May cause respiratory irritation.

Diethylenetriamine: Target Organs: Respiratory Tract Assessment: May cause respiratory irritation.

4,4'-isopropylidenediphenol: Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Monoethanolamine: Routes of exposure: Inhalation Target Organs: Respiratory Tract Assessment: May cause respiratory irritation.

STOT-repeated exposure

No data available

Repeated dose toxicity

Ingredients:

Monoethanolamine: Species: Rat, male and female NOEC: 300 mg/m3 Application Route: Ingestion Test atmosphere: vapor Exposure time: 672 h Number of exposures: 7 d Method: OECD Test Guideline 412

4,4'-isopropylidenediphenol: Species: Dog, male and female NOEC: 75 mg/kg, 10 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 2,160 h Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female LOAEL (Lowest observed adverse effect level): 600 mg/kg Application Route: Ingestion Exposure time: 672 h Number of exposures: 7 d Method: Subchronic toxicity

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Diethylenetriamine: Species: Rat, male and female NOEC: 70 - 80 mg/m3 Application Route: Ingestion Test atmosphere: vapor Exposure time: 360 h Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female NOAEL (No observed adverse effect level): 114 mg/kg/d Application Route: Skin contact Exposure time: 9,600 h Number of exposures: 6 d Method: Chronic toxicity

Aminoethylpiperazine: Species: Rat, male and female NOAEL (No observed adverse effect level): 151 - 285 mg/kg/d Application Route: Ingestion Exposure time: 672 h Method: Subacute toxicity

Species: Rat, male and female NOAEL (No observed adverse effect level): > 1000 mg/kg/d Application Route: Skin contact Exposure time: 696 h Number of exposures: 5 d Method: Subacute toxicity

Monoethanolamine: Species: Rat, male and female NOEC: 300 mg/m3 Application Route: Ingestion Test atmosphere: vapor Exposure time: 672 h Number of exposures: 7 d Method: OECD Test Guideline 412

4,4'-isopropylidenediphenol: Species: Dog, male and female NOEC: 75 mg/kg, 10 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 2,160 h Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female LOAEL (Lowest observed adverse effect level): 600 mg/kg Application Route: Ingestion

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Exposure time: 672 h Number of exposures: 7 d Method: Subchronic toxicity

Diethylenetriamine: Species: Rat, male and female NOEC: 70 - 80 mg/m3 Application Route: Ingestion Test atmosphere: vapor Exposure time: 360 h Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female NOAEL (No observed adverse effect level): 114 mg/kg/d Application Route: Skin contact Exposure time: 9,600 h Number of exposures: 6 d Method: Chronic toxicity

Aminoethylpiperazine: Species: Rat, male and female NOAEL (No observed adverse effect level): 151 - 285 mg/kg/d Application Route: Ingestion Exposure time: 672 h Method: Subacute toxicity

Species: Rat, male and female NOAEL (No observed adverse effect level): > 1000 mg/kg/d Application Route: Skin contact Exposure time: 696 h Number of exposures: 5 d Method: Subacute toxicity

Monoethanolamine: Species: Rat, male and female NOEC: 300 mg/m3 Application Route: Ingestion Test atmosphere: vapor Exposure time: 672 h Number of exposures: 7 d Method: OECD Test Guideline 412

4,4'-isopropylidenediphenol: Species: Dog, male and female NOEC: 75 mg/kg, 10 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 2,160 h Number of exposures: 7 d Method: Subchronic toxicity

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Species: Rat, male and female LOAEL (Lowest observed adverse effect level): 600 mg/kg Application Route: Ingestion Exposure time: 672 h Number of exposures: 7 d Method: Subchronic toxicity

Diethylenetriamine: Species: Rat, male and female NOEC: 70 - 80 mg/m3 Application Route: Ingestion Test atmosphere: vapor Exposure time: 360 h Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female NOAEL (No observed adverse effect level): 114 mg/kg/d Application Route: Skin contact Exposure time: 9,600 h Number of exposures: 6 d Method: Chronic toxicity

Diethylenetriamine: Species: Rat, male and female NOEC: 70 - 80 mg/m3 Application Route: Ingestion Test atmosphere: vapor Exposure time: 360 h Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female NOAEL (No observed adverse effect level): 114 mg/kg/d Application Route: Skin contact Exposure time: 9,600 h Number of exposures: 6 d Method: Chronic toxicity

4,4'-isopropylidenediphenol: Species: Dog, male and female NOEC: 75 mg/kg, 10 mg/m3 Application Route: Ingestion Test atmosphere: dust/mist Exposure time: 2,160 h Number of exposures: 7 d Method: Subchronic toxicity

Species: Rat, male and female LOAEL (Lowest observed adverse effect level): 600 mg/kg Application Route: Ingestion Exposure time: 672 h Number of exposures: 7 d

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Method: Subchronic toxicity

Monoethanolamine: Species: Rat, male and female NOEC: 300 mg/m3 Application Route: Ingestion Test atmosphere: vapor Exposure time: 672 h Number of exposures: 7 d Method: OECD Test Guideline 412

Repeated dose toxicity - : No data available Assessment

Aspiration toxicity

No data available

Experience with human exposure

| General Information: | No data available |
|----------------------|-------------------|
| Inhalation: | No data available |
| Skin contact: | No data available |
| Eye contact: | No data available |
| Ingestion: | No data available |

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Product:

Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients: Monoethanolamine: Toxicity to fish

: LC50 (Cyprinus carpio (Carp)): 349 mg/l

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| | | Exposure time: 9 Test Type: semi Test substance: | -static test |
| | sopropylidenediphenol: ity to fish | : LC50 (Oncorhyr Exposure time: 9 | nchus mykiss (rainbow trout)): 7.5 mg/l 96 h |
| | ylenetriamine: ity to fish | : LC50: 430 mg/l Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.1. | |
| | oethylpiperazine: ity to fish | : LC50: 2,190 mg Exposure time: 9 Test Type: static Test substance: | 96 h : test |
| | ethanolamine: ity to fish | : LC50 (Cyprinus Exposure time: S Test Type: semi Test substance: | -static test |
| | sopropylidenediphenol: ity to fish | : LC50 (Oncorhyr Exposure time: 9 | ichus mykiss (rainbow trout)): 7.5 mg/l 96 h |
| | ylenetriamine: ity to fish | : LC50: 430 mg/l Exposure time: 9 Test Type: semi Test substance: Method: Directiv | -static test |
| | oethylpiperazine: ity to fish | : LC50: 2,190 mg Exposure time: 9 Test Type: static Test substance: | 96 h : test |
| | ethanolamine: ity to fish | : LC50 (Cyprinus Exposure time: 9 Test Type: semi Test substance: | -static test |
| | sopropylidenediphenol: ity to fish | : LC50 (Oncorhyr Exposure time: S | nchus mykiss (rainbow trout)): 7.5 mg/l 96 h |
| | ylenetriamine: ity to fish | : LC50: 430 mg/l | |

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| | | Test Test | osure time: 9 Type: semi- substance: f od: Directive | static test | | | |
| | thylenetriamine: icity to fish | Expo Test Test | : LC50: 430 mg/l Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.1. | | | | |
| | -isopropylidenediphenol: icity to fish | | : LC50 (Oncorhynchus mykiss (rainbow trout)): 7.5 Exposure time: 96 h | | | | |
| | noethanolamine: icity to fish | Expo Test | 0 (Cyprinus c osure time: 9 Type: semi- substance: I | static test | | | |
| Mor Tox | redients: noethanolamine: noethanolamine: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note:: note::: note:: note::: note::: note::: note::: note::: note::: note:::: note:::::::::::::::::::::::::::::::::::: | Expo Test Test | sure time: 4 Type: static substance: I | test | | | |
| Тох | -isopropylidenediphenol: icity to daphnia and other atic invertebrates | Ехро | 0: 3.9 - 10.2 osure time: 4 | 8 h | | | |
| Тох | thylenetriamine: icity to daphnia and other atic invertebrates | EC5 Expo Test | | test | | | |
| Тох | inoethylpiperazine: icity to daphnia and other atic invertebrates | Expo Test Meth Rem | osure time: 4 Type: static od: OECD T arks: Harmfu | | | | |
| Тох | noethanolamine: icity to daphnia and other atic invertebrates | Expo Test | 0 (Daphnia n osure time: 4 Type: static substance: f | test | | | |

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|---------------|---------|---------------------------------------------------------------|---|----------------------------------------------------------------------------------|----------------------------------------------------------|
| | | | | Method: Directive | 67/548/EEC, Annex V, C.2. |
| Т | oxicity | propylidenediphenol: to daphnia and other invertebrates | : | EC50: 3.9 - 10.2 r Exposure time: 48 | 3 ĥ |
| | | | | (Ceriodaphnia du | bia (Water flea)): |
| Т | oxicity | enetriamine: to daphnia and other invertebrates | : | EC50 (Daphnia m Exposure time: 48 Test Type: static t Test substance: F | est |
| Т | oxicity | thylpiperazine: to daphnia and other invertebrates | : | Exposure time: 48 Test Type: static t Method: OECD Te Remarks: Harmfu | est |
| Т | oxicity | hanolamine: to daphnia and other invertebrates | : | Exposure time: 48 Test Type: static t Test substance: F | est |
| Т | oxicity | propylidenediphenol: to daphnia and other invertebrates | : | EC50: 3.9 - 10.2 r Exposure time: 48 | |
| | | | | (Ceriodaphnia du | bia (Water flea)): |
| Т | oxicity | enetriamine: to daphnia and other invertebrates | : | EC50 (Daphnia m Exposure time: 48 Test Type: static t Test substance: F | est |
| Т | oxicity | enetriamine: to daphnia and other invertebrates | : | EC50 (Daphnia m Exposure time: 48 Test Type: static t Test substance: F | est |
| Т | oxicity | propylidenediphenol: to daphnia and other invertebrates | : | EC50: 3.9 - 10.2 r Exposure time: 48 | |
| | | | | (Ceriodaphnia du | bia (Water flea)): |
| Т | oxicity | hanolamine: to daphnia and other invertebrates | : | EC50 (Daphnia m Exposure time: 48 | agna (Water flea)): 65 mg/l 3 h |

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| | | | static test ance: Fresh water rective 67/548/EEC, Annex V, C.2. | | |
| Mono | Ingredients: Monoethanolamine: Toxicity to algae | | lenastrum capricornutum (green algae)): 2.5 mg/l ime: 72 h ance: Fresh water ECD Test Guideline 201 | | |
| | sopropylidenediphenol: ity to algae | : EC50 (Sel mg/l Exposure t | enastrum capricornutum (green algae)): 2.5 - 3.1 ime: 96 h | | |
| | ylenetriamine: ity to algae | EbC50 (Selenastrum capricornutum (green algae)): 1,16 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 201 | | | |
| | oethylpiperazine: ity to algae | mg/l Exposure t Test subst | enastrum capricornutum (green algae)): > 1,000 ime: 72 h ance: Fresh water ECD Test Guideline 201 | | |
| | ethanolamine: ity to algae | Exposure t Test subst | lenastrum capricornutum (green algae)): 2.5 mg/l ime: 72 h ance: Fresh water ECD Test Guideline 201 | | |
| | sopropylidenediphenol: ity to algae | : EC50 (Sel mg/l Exposure t | enastrum capricornutum (green algae)): 2.5 - 3.1 ime: 96 h | | |
| | ylenetriamine: ity to algae | mg/l Exposure t Test Type: Test subst | | | |
| | oethylpiperazine: ity to algae | mg/l Exposure t | enastrum capricornutum (green algae)): > 1,000 ime: 72 h ance: Fresh water | | |

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| | | | Method: OECD To | est Guideline 201 | | | | |
| | Monoethanolamine: Toxicity to algae | | : ErC50 (Selenastrum capricornutum (green algae)): 2.5 mg Exposure time: 72 h Test substance: Fresh water Method: OECD Test Guideline 201 | | | | | |
| | opropylidenediphenol: ty to algae | : | EC50 (Selenastru mg/l Exposure time: 96 | m capricornutum (green algae)): 2.5 - 3.1 Sh | | | | |
| | rlenetriamine: ty to algae | : | EbC50 (Selenastr mg/l Exposure time: 72 Test Type: static t Test substance: F Method: OECD Te | est resh water | | | | |
| | lenetriamine: ty to algae | : | EbC50 (Selenastr mg/l Exposure time: 72 Test Type: static t Test substance: F Method: OECD Te | est resh water | | | | |
| | opropylidenediphenol: ty to algae | : | EC50 (Selenastru mg/l Exposure time: 96 | m capricornutum (green algae)): 2.5 - 3.1 3 h | | | | |
| | ethanolamine: ty to algae | : | ErC50 (Selenastre Exposure time: 72 Test substance: F Method: OECD Te | resh water | | | | |
| M-Fac toxicit | tor (Acute aquatic y) | : | No data available | | | | | |
| Monoe | dients: ethanolamine : ty to fish (Chronic y) | : | NOEC (Oryzias la Exposure time: 30 Test substance: F Method: OECD Te | resh water | | | | |
| | opropylidenediphenol: ty to fish (Chronic y) | : | NOEC (Pimephale Exposure time: 44 Test Type: flow-th Test substance: F | rough test | | | | |

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| | | | Method: Fish Life Remarks: Toxic to | Cycle Toxicity aquatic organisms. |
| То | thylenetriamine: kicity to fish (Chronic icity) | : | NOEC: 10 mg/l Exposure time: 28 Test Type: semi-s Test substance: F Method: OECD Te | tatic test resh water |
| То | noethanolamine: kicity to fish (Chronic icity) | : | NOEC (Oryzias la Exposure time: 30 Test substance: F Method: OECD Te | resh water |
| То | '-isopropylidenediphenol: kicity to fish (Chronic icity) | : | Exposure time: 44 Test Type: flow-th Test substance: F Method: Fish Life | rough test resh water |
| То | thylenetriamine: kicity to fish (Chronic icity) | : | NOEC: 10 mg/l Exposure time: 28 Test Type: semi-s Test substance: F Method: OECD Te | tatic test resh water |
| То | noethanolamine: kicity to fish (Chronic icity) | : | NOEC (Oryzias la Exposure time: 30 Test substance: F Method: OECD Te | resh water |
| То | '-isopropylidenediphenol: kicity to fish (Chronic icity) | : | Exposure time: 44 Test Type: flow-th Test substance: F Method: Fish Life | rough test resh water |
| То | thylenetriamine: kicity to fish (Chronic icity) | : | NOEC: 10 mg/l Exposure time: 28 Test Type: semi-s Test substance: F Method: OECD Te | tatic test resh water |
| То | thylenetriamine: kicity to fish (Chronic icity) | : | NOEC: 10 mg/l Exposure time: 28 Test Type: semi-s | |

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| | | | | Test substance: F Method: OECD Te | |
| Т | | propylidenediphenol: / to fish (Chronic | : | Exposure time: 44 Test Type: flow-th Test substance: F Method: Fish Life | rough test resh water |
| Т | | thanolamine: / to fish (Chronic) | : | NOEC (Oryzias la Exposure time: 30 Test substance: F Method: OECD Te | resh water |
| | ngredi | | | | |
| T a | Foxicity aquatic | thanolamine: to daphnia and other invertebrates to toxicity) | : | NOEC (Daphnia n Exposure time: 21 Test substance: F Method: OECD Te | resh water |
| T a | Foxicity aquatic | enetriamine: v to daphnia and other invertebrates ic toxicity) | : | Exposure time: 21 Test Type: semi-s Test substance: F | tatic test |
| T a | Foxicity aquatic | thanolamine: to daphnia and other invertebrates to toxicity) | : | NOEC (Daphnia n Exposure time: 21 Test substance: F Method: OECD Te | resh water |
| T a | Foxicity aquatic | enetriamine: to daphnia and other invertebrates ic toxicity) | : | Exposure time: 21 Test Type: semi-s Test substance: F | tatic test |
| T a | Foxicity aquatic | thanolamine: v to daphnia and other invertebrates ic toxicity) | : | NOEC (Daphnia n Exposure time: 21 Test substance: F Method: OECD Te | resh water |
| Т | Foxicity | enetriamine: / to daphnia and other invertebrates | : | NOEC (Daphnia n Exposure time: 21 | nagna (Water flea)): 5.6 mg/l d |

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| (Chronic | toxicity) | | Test Type: semi-s Test substance: F Method: Directive | |
| Toxicity f | netriamine: to daphnia and other nvertebrates toxicity) | : | Exposure time: 21 Test Type: semi-s Test substance: F | static test |
| Toxicity f | anolamine: to daphnia and other nvertebrates toxicity) | : | NOEC (Daphnia n Exposure time: 21 Test substance: F Method: OECD Te | resh water |
| M-Factor toxicity) | r (Chronic aquatic | : | No data available | |
| Toxicity 1 | to bacteria | : | No data available | |
| | netriamine: to soil dwelling | : | EC50 (Eisenia feti Exposure time: 56 Method: OECD Te | |
| | netriamine: to soil dwelling ns | : | EC50 (Eisenia feti Exposure time: 56 Method: OECD Te | |
| | netriamine: to soil dwelling ns | : | EC50 (Eisenia feti Exposure time: 56 Method: OECD Te | |
| | netriamine: to soil dwelling ns | : | EC50 (Eisenia feti Exposure time: 56 Method: OECD Te | |
| Plant tox | licity | : | No data available | |
| Sedimen | nt toxicity | : | No data available | |
| Toxicity to organism | to terrestrial ns | : | No data available | |
| Ingredie | ology Assessment • nts: •anolamine: | | | |

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| Ac | ute aquatic toxicity | : ⊦ | larmful to aquati | c life. |
| | ethylenetriamine: ute aquatic toxicity | : Т | his product has | no known ecotoxicological effects. |
| | pnoethanolamine: ute aquatic toxicity | : ⊢ | larmful to aquati | c life. |
| | ethylenetriamine: ute aquatic toxicity | : т | his product has | no known ecotoxicological effects. |
| | noethanolamine: ute aquatic toxicity | : F | larmful to aquati | c life. |
| | ethylenetriamine: ute aquatic toxicity | : Т | his product has | no known ecotoxicological effects. |
| | ethylenetriamine: ute aquatic toxicity | : Т | his product has | no known ecotoxicological effects. |
| | pnoethanolamine: ute aquatic toxicity | : ⊦ | larmful to aquati | c life. |
| 4,4 | redients: '-isopropylidenediphenol: ronic aquatic toxicity | : Т | oxic to aquatic li | fe with long lasting effects. |
| | '-isopropylidenediphenol: ronic aquatic toxicity | : Т | oxic to aquatic li | fe with long lasting effects. |
| | '-isopropylidenediphenol: ronic aquatic toxicity | : Т | oxic to aquatic li | fe with long lasting effects. |
| | '-isopropylidenediphenol: ronic aquatic toxicity | : Т | oxic to aquatic li | fe with long lasting effects. |
| То | xicity Data on Soil | : N | lo data available | |
| | her organisms relevant to e environment | : N | lo data available | |
| | rther information: data available | | | |
| Pe | rsistence and degradabil | ity | | |
| Mc | gredients: pnoethanolamine: pdegradability | C F B | noculum: activate Concentration: 20 Result: Readily bi Biodegradation: 3 Exposure to 500 2 |) mg/l odegradable. > 90 % |

Method: OECD Test Guideline 301A

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| | -isopropylidenediphenol: degradability | : Result: Not readily biodegradable. Biodegradation: 1 - 2 % Exposure time: 28 d | | | | | |
| | hylenetriamine: degradability | Inoculum: activated sludge Result: Readily biodegradable. Biodegradation: 87 % Exposure time: 21 d Method: OECD Test Guideline 301D | | | | | |
| | noethylpiperazine: degradability | Biodegradation Exposure time | adily biodegradable. n: 0 % | | | | |
| | noethanolamine: degradability | Biodegradation Exposure time | : 20 mg/l y biodegradable. n: > 90 % | | | | |
| | -isopropylidenediphenol: degradability | : Result: Not rea Biodegradation Exposure time | | | | | |
| | hylenetriamine: degradability | Biodegradation Exposure time | y biodegradable. n: 87 % | | | | |
| | noethylpiperazine: degradability | Biodegradation Exposure time | adily biodegradable. n: 0 % | | | | |
| | noethanolamine: degradability | Biodegradation Exposure time | : 20 mg/l y biodegradable. n: > 90 % | | | | |
| | -isopropylidenediphenol: degradability | : Result: Not rea | adily biodegradable. | | | | |



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| | | | | Biodegradation: 1 Exposure time: 28 | | | | |
| | Diethylenetriamine: Biodegradability | | Inoculum: activated sludge Result: Readily biodegradable. Biodegradation: 87 % Exposure time: 21 d Method: OECD Test Guideline 301D | | | | | |
| | | enetriamine: radability | : | Inoculum: activate Result: Readily bio Biodegradation: 8 Exposure time: 21 Method: OECD Te | odegradable. 37 % | | | |
| | | propylidenediphenol: radability | : | Result: Not readily Biodegradation: 1 Exposure time: 28 | - 2 % | | | |
| | | hanolamine: radability | : | Inoculum: activate Concentration: 20 Result: Readily bio Biodegradation: > Exposure time: 21 Method: OECD Te | mg/l odegradable. • 90 % | | | |
| | Biocher Deman Aminoe Biocher | ents: hthylpiperazine: mical Oxygen d (BOD) hthylpiperazine: mical Oxygen d (BOD) | | 5 mg/l Incubation time: 5 5 mg/l Incubation time: 5 | | | | |
| | Chemic (COD) Aminoe | thylpiperazine: al Oxygen Demand thylpiperazine: al Oxygen Demand | : | 560 mg/l 560 mg/l No data available | | | | |
| | ThOD | | : | No data available | | | | |
| | BOD/TH | nOD | : | No data available | | | | |
| | Dissolv (DOC) | ed organic carbon | : | No data available | | | | |



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| | | Rate constan Degradation | t: 35.844 (direct photolysis): 50 % |
| | pact on Sewage patment | : No data avail | able |
| Bic | accumulative potential | | |
| Die | redients: hylenetriamine: accumulation | Bioconcentra Exposure tim Test substan Method: flow | ce: Fresh water -through test |
| | inoethylpiperazine: accumulation | : Species: Fish | baccumulation is unlikely. n es not bioaccumulate. |
| | thylenetriamine: accumulation | Bioconcentra Exposure tim Test substan Method: flow | ce: Fresh water |
| | inoethylpiperazine: accumulation | : Species: Fish Remarks: Do | es not bioaccumulate. |
| | thylenetriamine: accumulation | Bioconcentra Exposure tim Test substan Method: flow | ce: Fresh water |
| | thylenetriamine: accumulation | Bioconcentra Exposure tim Test substan Method: flow | ce: Fresh water |
| Mo Pai | redients: noethanolamine: rtition coefficient: n- anol/water | : log Pow: -1.3 | 1 (25 °C) |



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Diethylenetriamine:

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| | artition coefficient: n- tanol/water | : | log Pow: -1.58 (20 pH: 7 |) °C) |
| Pa | ninoethylpiperazine: artition coefficient: n- tanol/water | : | log Pow: -1.48 (20 |) °C) |
| Pa | onoethanolamine: artition coefficient: n- tanol/water | : | log Pow: -1.31 (25 | °C) |
| Pa | ethylenetriamine: artition coefficient: n- tanol/water | : | log Pow: -1.58 (20 pH: 7 |) °C) |
| Pa | ninoethylpiperazine: artition coefficient: n- tanol/water | : | log Pow: -1.48 (20 |) °C) |
| Pa | onoethanolamine: artition coefficient: n- tanol/water | : | log Pow: -1.31 (25 | °℃) |
| Pa | ethylenetriamine: artition coefficient: n- tanol/water | : | log Pow: -1.58 (20 pH: 7 |) °C) |
| Pa | ethylenetriamine: artition coefficient: n- tanol/water | : | log Pow: -1.58 (20 pH: 7 |) °C) |
| Pa | onoethanolamine: artition coefficient: n- tanol/water | : | log Pow: -1.31 (25 | ́о°С) |
| | obility in soil obility | : | No data available | |
| lue. | ana dia mta . | | | |
| Me Di en | gredients: onoethanolamine: stribution among vironmental compartments | : | Koc: 1.167. | |
| Di en | ethylenetriamine: stribution among vironmental compartments ninoethylpiperazine: | : | Koc: 19111. | |
| Di en | vironmental compartments | : | Koc: ca. 37000. | |
| Di: en | stribution among vironmental compartments ethylenetriamine: | : | Koc: 1.167. | |
| Di en | stribution among vironmental compartments ninoethylpiperazine: | : | Koc: 19111. | |





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| envir | Distribution among environmental compartments Monoethanolamine: Distribution among environmental compartments Diethylenetriamine: Distribution among environmental compartments Diethylenetriamine: Distribution among environmental compartments Monoethanolamine: Distribution among environmental compartments Stability in soil | | Koc: ca. 37000. | |
| Distri envir | | | Koc: 1.167. | |
| Distri envir | | | Koc: 19111. | |
| Distri envir | | | Koc: 19111. | |
| Distri | | | Koc: 1.167. | |
| | | | No data available | |
| | r adverse effects | | | |
| Envir pathv | onmental fate and ways | : | No data available | |
| | llts of PBT and vPvB ssment | : | No data available | |
| Endo poter | ocrine disrupting ntial | : | No data available | |
| | rbed organic bound gens (AOX) | : | No data available | |
| | rdous to the ozone laye | er | | |
| Ozo | ne-Depletion Potential | | Not applicable | |
| | ional ecological nation - Product | : | unprofessional ha | hazard cannot be excluded in the event of ndling or disposal. c life with long lasting effects. |
| Glob (GW | al warming potential P) | : | No data available | |

SECTION 13. DISPOSAL CONSIDERATIONS

| Disposal methods | |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waste from residues | The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. |
| Contaminated packaging | : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. |

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SECTION 14. TRANSPORT INFORMATION

International Regulation

ΙΑΤΑ

| UN/ID No. | UN 2079 | |
|-------------------------------------------------------------|------------------------------|-------------|
| Proper shipping name | Diethylenetriamine SC | DLUTION |
| Class | 8 | |
| Packing group | II | |
| Labels | Corrosive | |
| Packing instruction (cargo aircraft) | 855 | |
| Packing instruction (passenger aircraft) | 851 | |
| | | |
| IMDG | | |
| IMDG UN number | UN 2079 | |
| | UN 2079 DIETHYLENETRIAMII | NE SOLUTION |
| UN number | | NE SOLUTION |
| UN number Proper shipping name | DIETHYLENETRIAMI | NE SOLUTION |
| UN number Proper shipping name Class | DIETHYLENETRIAMII | NE SOLUTION |
| UN number Proper shipping name Class Packing group | DIETHYLENETRIAMII 8 II | NE SOLUTION |

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

Not applicable for product as supplied.

Domestic regulation

| ADG | |
|----------------------|-------------------------------|
| UN number | : UN 2079 |
| Proper shipping name | : DIETHYLENETRIAMINE SOLUTION |
| Class | : 8 |
| Packing group | : 11 |
| Labels | : 8 |
| Hazchem Code | : 2X |
| | |

SECTION 15. REGULATORY INFORMATION

| Safety, health and enviro mixture | onmental regulations | /legislation specific for the substance or |
|--------------------------------------|----------------------|--------------------------------------------|
| R-phrase(s) | : R62 | Possible risk of impaired fertility. |
| | R26 | Very toxic by inhalation. |
| | R34 | Causes burns. |
| | R37 | Irritating to respiratory system. |
| | R43 | May cause sensitization by skin contact. |
| S-phrase(s) | : S26 | In case of contact with eyes, rinse |

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| | | | S28 S36/37/39 | immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of soap and water. Wear suitable protective clothing, gloves and eye/face protection. | |
| Sched | Standard for the Uniform : No poison schedule number allocated Scheduling of Medicines and Poisons | | | ile number allocated | |
| Sched | Australia Work Health and Safety Regulations - : Not listed Schedule 10 Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals. | | | | |
| Other | international regulation | ons | | | |
| The in | The ingredients of this product are reported in the following inventories: | | | | |
| CH IN | V | : | The mixture conta | ains substances listed on the Swiss Inventory | |
| TSCA | | : | On TSCA Invento | ry | |
| DSL | | : | | ains the following components listed on the All other components are on the Canadian | |
| AICS | | : | - | or in compliance with the inventory | |
| NZIoC | ; | : | not determined | | |
| ENCS | | : | On the inventory, | or in compliance with the inventory | |
| KECI | | : | On the inventory, | or in compliance with the inventory | |
| PICCS | 3 | : | Not in compliance | e with the inventory | |
| IECSC | 2 | : | On the inventory, | or in compliance with the inventory | |
| | | | | | |

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIOC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Date format

: dd.mm.yyyy

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