

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : EP1112NC Clear B

1.2. Recommended use and restrictions on use

Recommended use : Epoxy hardener
Restrictions on use : Product for industrial use only

1.3. Supplier

ResinLab, LLC
N109 W13300 Ellsworth Drive
Germantown, WI 53022 - United States
T 1-877-259-1669
msds@resinlab.com - www.resinlab.com

1.4. Emergency telephone number

Emergency number : CHEMTREC:1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

| | | |
|---------------------------------------|------|---|
| Acute toxicity (oral) Category 4 | H302 | Harmful if swallowed |
| Skin corrosion/irritation Category 1B | H314 | Causes severe skin burns and eye damage |
| Skin sensitization, Category 1 | H317 | May cause an allergic skin reaction |
| Reproductive toxicity Category 2 | H361 | Suspected of damaging fertility or the unborn child |

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger

Hazard statements (GHS US) :
H302 - Harmful if swallowed
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H361 - Suspected of damaging fertility or the unborn child

Precautionary statements (GHS US) :
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.
P302+P352 - If on skin: Wash with plenty of water.
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P310 - Immediately call a poison center or doctor.
P330 - Rinse mouth.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

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P363 - Wash contaminated clothing before reuse.
P391 - Collect spillage.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | GHS US classification |
|--|----------------------|-----------|---|
| 4-Nonylphenol, branched | (CAS-No.) 84852-15-3 | 30 – 50 | Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Repr. 2, H361 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| Fatty acids, tall-oil, reaction products with tetraethylenepentamine | (CAS-No.) 68953-36-6 | 30 – 50 | Skin Corr. 1C, H314 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 |
| N-(2-Aminoethyl)piperazine | (CAS-No.) 140-31-8 | 10 – 30 | Acute Tox. 3 (Dermal), H311 Skin Corr. 1B, H314 Skin Sens. 1, H317 Repr. 2, H361 Aquatic Acute 3, H402 Aquatic Chronic 3, H412 |
| Tetraethylenepentamine | (CAS-No.) 112-57-2 | 5 – 10 | Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Acute 2, H401 Aquatic Chronic 2, H411 |
| triethylenetetramine | (CAS-No.) 112-24-3 | 0.1 – 0.5 | Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Acute 3, H402 Aquatic Chronic 3, H412 |
| Diethylenetriamine | (CAS-No.) 111-40-0 | 0.1 – 0.5 | Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1, H314 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Acute 3, H402 |

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.
First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact : Rinse immediately with plenty of water for 15 minutes. Remove/Take off immediately all contaminated clothing. Wash clothing before reuse. Get medical advice/attention.
First-aid measures after eye contact : Immediately rinse with plenty of water (for at least 15 minutes). Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.
First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after skin contact : Burns. May cause an allergic skin reaction.
Symptoms/effects after eye contact : Serious damage to eyes.

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Symptoms/effects after ingestion : Burns.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Toxic fumes may be released

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station, ventilate curing ovens to prevent emissions in the workplace. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool. Store locked up.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

4-Nonylphenol, branched (84852-15-3)

Not applicable

Fatty acids, tall-oil, reaction products with tetraethylenepentamine (68953-36-6)

Not applicable

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| | | |
|--|----------------------|--|
| N-(2-Aminoethyl)piperazine (140-31-8) | | |
| Not applicable | | |
| Tetraethylenepentamine (112-57-2) | | |
| AIHA | WEEL TWA | 5 mg/m ³ |
| triethylenetetramine (112-24-3) | | |
| AIHA | WEEL TWA [ppm] | 1 ppm Absorbed via skin |
| Diethylenetriamine (111-40-0) | | |
| ACGIH | Local name | Diethylenetriamine |
| ACGIH | ACGIH OEL TWA [ppm] | 1 ppm |
| ACGIH | Remark (ACGIH) | TLV® Basis: URT & eye irr. Notations: Skin |
| ACGIH | Regulatory reference | ACGIH 2020 |

8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station, ventilate curing ovens to prevent emissions in the workplace.
- Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses with side shields

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. In case of inadequate ventilation, wear respiratory protection.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---|---------------------|
| Physical state | : Liquid |
| Color | : Amber |
| Odor | : characteristic |
| Odor threshold | : No data available |
| pH | : No data available |
| Melting point | : Not applicable |
| Freezing point | : No data available |
| Boiling point | : > 170 °C |
| Flash point | : > 93 °C |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Flammability (solid, gas) | : Not applicable. |
| Vapor pressure | : No data available |
| Relative vapor density at 20 °C | : No data available |
| Relative density | : No data available |

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| | |
|---|--------------------------|
| Density | : 0.96 g/cm ³ |
| Solubility | : No data available |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Viscosity, dynamic | : No data available |
| Explosion limits | : No data available |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |
| VOC content | No data available |

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

Oxidizing agent. Bases (Alkalis). metals. Peroxides. Phenolic compounds.

10.6. Hazardous decomposition products

Carbon oxides (CO, CO₂). Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|-----------------------------|-------------------------|
| Acute toxicity (oral) | : Harmful if swallowed. |
| Acute toxicity (dermal) | : Not classified |
| Acute toxicity (inhalation) | : Not classified |

| | |
|---------------|----------------------------|
| ATE US (oral) | 1956.324 mg/kg body weight |
|---------------|----------------------------|

4-Nonylphenol, branched (84852-15-3)

| | |
|---------------|--|
| LD50 oral rat | 1412 mg/kg body weight (Rat, Male / female, Experimental value, Oral, 14 day(s)) |
| ATE US (oral) | 1412 mg/kg body weight |

N-(2-Aminoethyl)piperazine (140-31-8)

| | |
|--------------------|--|
| LD50 oral rat | 2097 mg/kg body weight (Rat, Male, Experimental value, Oral, 14 day(s)) |
| LD50 dermal rabbit | 866 mg/kg bw/day (24 h, Rabbit, Male, Experimental value, Dermal, 14 day(s)) |
| ATE US (oral) | 2097 mg/kg body weight |
| ATE US (dermal) | 866 mg/kg body weight |

Tetraethylenepentamine (112-57-2)

| | |
|-----------------------|---|
| LD50 oral rat | 3990 mg/kg |
| LD50 dermal rabbit | 660 mg/kg |
| LC50 Inhalation - Rat | > 9.9 mg/l air (8 h, Rat, Male, Literature study, Inhalation) |
| ATE US (oral) | 500 mg/kg body weight |
| ATE US (dermal) | 660 mg/kg body weight |

triethylenetetramine (112-24-3)

| | |
|--------------------|--|
| LD50 oral rat | 1716 mg/kg body weight (BASF test, Rat, Experimental value, Oral) |
| LD50 dermal rabbit | 1465 mg/kg body weight (BASF test, Rabbit, Experimental value, Dermal) |
| ATE US (oral) | 1716 mg/kg body weight |
| ATE US (dermal) | 1465 mg/kg body weight |

Diethylenetriamine (111-40-0)

| | |
|---------------|---|
| LD50 oral rat | 1553 mg/kg body weight (Rat, Male, Experimental value, Oral, 14 day(s)) |
|---------------|---|

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| Diethylenetriamine (111-40-0) | |
|-------------------------------|---|
| LD50 dermal rabbit | 1045 mg/kg body weight (Rabbit, Experimental value, Dermal) |
| LC50 Inhalation - Rat | 70 mg/m³ |
| LC50 Inhalation - Rat [ppm] | 16.4 ppm/4h |
| ATE US (oral) | 1553 mg/kg body weight |
| ATE US (dermal) | 1045 mg/kg body weight |
| ATE US (gases) | 16.4 ppmV/4h |
| ATE US (vapors) | 0.07 mg/l/4h |
| ATE US (dust, mist) | 0.07 mg/l/4h |

| | |
|-----------------------------------|--|
| Skin corrosion/irritation | : Causes severe skin burns. |
| Serious eye damage/irritation | : Assumed to cause serious eye damage |
| Respiratory or skin sensitization | : May cause an allergic skin reaction. |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Suspected of damaging fertility or the unborn child. |
| STOT-single exposure | : Not classified |

| Diethylenetriamine (111-40-0) | |
|-------------------------------|-----------------------------------|
| STOT-single exposure | May cause respiratory irritation. |

STOT-repeated exposure : Not classified

| Diethylenetriamine (111-40-0) | |
|-------------------------------|--|
| LOAEL (oral,rat,90 days) | 530 – 620 mg/kg body weight Animal: rat, Guideline: other:OECD Guideline for Testing of Chemicals, No. 451, May 12, 1981 |
| NOAEL (oral,rat,90 days) | 70 – 80 mg/kg body weight Animal: rat, Guideline: other:OECD Guideline for Testing of Chemicals, No. 451, May 12, 1981 |

| | |
|-------------------------------------|---|
| Aspiration hazard | : Not classified |
| Symptoms/effects after skin contact | : Burns. May cause an allergic skin reaction. |
| Symptoms/effects after eye contact | : Serious damage to eyes. |
| Symptoms/effects after ingestion | : Burns. |

SECTION 12: Ecological information

12.1. Toxicity

| | |
|-------------------|--|
| Ecology - general | : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. Very toxic to aquatic life with long lasting effects. |
|-------------------|--|

| 4-Nonylphenol, branched (84852-15-3) | |
|--------------------------------------|---|
| LC50 - Fish [1] | 0.08 mg/l (ASTM E729-96, 96 h, Hybopsis monacha, Static system, Fresh water, Experimental value) |
| EC50 - Crustacea [1] | 0.084 mg/l (ASTM E729-88, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, Lethal) |
| NOEC chronic fish | 0.006 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '91 d' |

| N-(2-Aminoethyl)piperazine (140-31-8) | |
|---------------------------------------|---|
| LC50 - Fish [1] | 2190 mg/l (96 h, Pimephales promelas, Static system, Fresh water, Experimental value) |
| EC50 - Crustacea [1] | 58 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Experimental value, GLP) |
| ErC50 algae | > 1000 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Fresh water, Experimental value, GLP) |

| Tetraethylenepentamine (112-57-2) | |
|-----------------------------------|---|
| LC50 - Fish [1] | 420 mg/l (EU Method C.1, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, GLP) |
| EC50 - Crustacea [1] | 24.1 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Experimental value, GLP) |

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| | |
|--|--|
| Tetraethylenepentamine (112-57-2) | |
| ErC50 algae | 6.8 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Selenastrum capricornutum, Experimental value) |
| triethylenetetramine (112-24-3) | |
| LC50 - Fish [1] | 495 mg/l (96 h, Pimephales promelas, Fresh water, Literature study) |
| EC50 - Crustacea [1] | 31.1 mg/l (Equivalent or similar to OECD 202, 48 h, Daphnia magna, Literature study) |
| Diethylenetriamine (111-40-0) | |
| LC50 - Fish [1] | 430 mg/l (EU Method C.1, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, GLP) |
| EC50 - Crustacea [1] | 64.6 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP) |
| EC50 - Crustacea [2] | 16 mg/l Test organisms (species): Daphnia magna |
| ErC50 algae | 1164 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Selenastrum capricornutum, Static system, Fresh water, Experimental value, GLP) |
| LOEC (chronic) | 11.3 mg/l Test organisms (species): Daphnia magna Duration: '21 d' |
| NOEC (chronic) | 5.6 mg/l Test organisms (species): Daphnia magna Duration: '21 d' |
| NOEC chronic fish | > 10 mg/l Test organisms (species): Gasterosteus aculeatus Duration: '28 d' |

12.2. Persistence and degradability

| | |
|--|--|
| 4-Nonylphenol, branched (84852-15-3) | |
| Persistence and degradability | Biodegradability in soil: no data available. Inherently biodegradable. |
| N-(2-Aminoethyl)piperazine (140-31-8) | |
| Persistence and degradability | Not readily biodegradable in water. |
| Chemical oxygen demand (COD) | 0.56 g O ₂ /g substance |
| Tetraethylenepentamine (112-57-2) | |
| Persistence and degradability | Not readily biodegradable in water. |
| triethylenetetramine (112-24-3) | |
| Persistence and degradability | Not readily biodegradable in water. |
| Diethylenetriamine (111-40-0) | |
| Persistence and degradability | Readily biodegradable in the soil. Readily biodegradable in water. |

12.3. Bioaccumulative potential

| | |
|---|--|
| 4-Nonylphenol, branched (84852-15-3) | |
| BCF - Fish [1] | 1200 – 1300 (Equivalent or similar to OECD 305, 16 day(s), Gasterosteus aculeatus, Flow-through system, Salt water, Experimental value, Fresh weight) |
| Partition coefficient n-octanol/water (Log Pow) | 5.4 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 23 °C) |
| Bioaccumulative potential | Potential for bioaccumulation (500 ≤ BCF ≤ 5000). |
| N-(2-Aminoethyl)piperazine (140-31-8) | |
| BCF - Fish [1] | 0.3 – 6.3 (OECD 305: Bioconcentration: Flow-Through Fish Test, 6 week(s), Cyprinus carpio, Flow-through system, Fresh water, Read-across) |
| Partition coefficient n-octanol/water (Log Pow) | -1.48 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |
| Tetraethylenepentamine (112-57-2) | |
| BCF - Other aquatic organisms [1] | 3.162 l/kg (BCFBAF v3.01, Estimated value, Fresh weight) |
| Partition coefficient n-octanol/water (Log Pow) | -3.16 (Estimated value, KOWWIN) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |
| triethylenetetramine (112-24-3) | |
| Partition coefficient n-octanol/water (Log Pow) | -2.65 (Estimated value, KOWWIN) |
| Bioaccumulative potential | Not bioaccumulative. |
| Diethylenetriamine (111-40-0) | |
| BCF - Fish [1] | 0.3 – 6.3 (OECD 305: Bioconcentration: Flow-Through Fish Test, 8 week(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value, Fresh weight) |
| Partition coefficient n-octanol/water (Log Pow) | -1.58 (Calculated, 20 °C) |

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Diethylenetriamine (111-40-0)

| | |
|---------------------------|----------------------|
| Bioaccumulative potential | Not bioaccumulative. |
|---------------------------|----------------------|

12.4. Mobility in soil

4-Nonylphenol, branched (84852-15-3)

| | |
|-----------------|---|
| Surface tension | 38.9 mN/m (20 °C, EU Method A.5: Surface tension) |
| Ecology - soil | Adsorbs into the soil. |

N-(2-Aminoethyl)piperazine (140-31-8)

| | |
|--|-------------------------------------|
| Surface tension | No data available in the literature |
| Organic Carbon Normalized Adsorption Coefficient (Log Koc) | 4.57 (log Koc, Read-across, GLP) |
| Ecology - soil | Low potential for mobility in soil. |

Tetraethylenepentamine (112-57-2)

| | |
|--|-------------------------------------|
| Organic Carbon Normalized Adsorption Coefficient (Log Koc) | 3.04 (log Koc, Calculated value) |
| Ecology - soil | Low potential for mobility in soil. |

triethylenetetramine (112-24-3)

| | |
|--|--|
| Surface tension | No data available in the literature |
| Organic Carbon Normalized Adsorption Coefficient (Log Koc) | 1.885 (log Koc, SRC PCKOCWIN v2.0, Calculated value) |
| Ecology - soil | Highly mobile in soil. |

Diethylenetriamine (111-40-0)

| | |
|--|--|
| Organic Carbon Normalized Adsorption Coefficient (Log Koc) | 3.4 – 4.6 (log Koc, Other, Experimental value, GLP) |
| Ecology - soil | Adsorbs into the soil. Low potential for mobility in soil. Soil contaminant. |

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

| | |
|--------------------------------------|---|
| Transport document description (DOT) | : UN3267 Corrosive liquid, basic, organic, n.o.s. (4-Nonylphenol, branched, N-Aminoethylpiperazine), 8, III |
| UN-No.(DOT) | : UN3267 |
| Proper Shipping Name (DOT) | : Corrosive liquid, basic, organic, n.o.s. 4-Nonylphenol, branched, N-Aminoethylpiperazine |
| Class (DOT) | : 8 - Class 8 - Corrosive material 49 CFR 173.136 |
| Packing group (DOT) | : III - Minor Danger |
| Hazard labels (DOT) | : 8 - Corrosive |



Dangerous for the environment : Yes

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Marine pollutant

: Yes



DOT Packaging Non Bulk (49 CFR 173.xxx)

: 203

DOT Packaging Bulk (49 CFR 173.xxx)

: 241

DOT Special Provisions (49 CFR 172.102)

: IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx)

: 154

DOT Quantity Limitations Passenger aircraft/rail
(49 CFR 173.27)

: 5 L

DOT Quantity Limitations Cargo aircraft only (49
CFR 175.75)

: 60 L

DOT Vessel Stowage Location

: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

DOT Vessel Stowage Other

: 40 - Stow "clear of living quarters", 52 - Stow "separated from" acids

Emergency Response Guide (ERG) Number

: 153

Other information

: No supplementary information available.

Transportation of Dangerous Goods

Not applicable

Transport by sea

Transport document description (IMDG)

: UN 3267 CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (4-Nonylphenol, branched ; N-(2-Aminoethyl)piperazine), 8, III

UN-No. (IMDG)

: 3267

CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.

4-Nonylphenol, branched ; N-(2-Aminoethyl)piperazine

Class (IMDG)

: 8 - Corrosive substances

Packing group (IMDG)

: III - substances presenting low danger

Limited quantities (IMDG)

: 5 L

Marine pollutant

: Yes



Air transport

Transport document description (IATA)

: UN 3267 Corrosive liquid, basic, organic, n.o.s. (4-Nonylphenol, branched ; N-(2-Aminoethyl)piperazine), 8, III

UN-No. (IATA)

: 3267

Proper Shipping Name (IATA)

: Corrosive liquid, basic, organic, n.o.s.

4-Nonylphenol, branched ; N-(2-Aminoethyl)piperazine

Class (IATA)

: 8 - Corrosives

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Packing group (IATA)

: III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

| | | |
|-------------------------|--------------------|----------|
| 4-Nonylphenol, branched | CAS-No. 84852-15-3 | 30 – 50% |
|-------------------------|--------------------|----------|

4-Nonylphenol, branched (84852-15-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Subject to reporting requirements of United States SARA Section 313

EPA TSCA Regulatory Flag SP - SP - indicates a substance that is identified in a proposed Significant New Use Rule.

Fatty acids, tall-oil, reaction products with tetraethylenepentamine (68953-36-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

N-(2-Aminoethyl)piperazine (140-31-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Tetraethylenepentamine (112-57-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

triethylenetetramine (112-24-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Diethylenetriamine (111-40-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

4-Nonylphenol, branched (84852-15-3)

Listed on the Canadian DSL (Domestic Substances List)

Fatty acids, tall-oil, reaction products with tetraethylenepentamine (68953-36-6)

Listed on the Canadian DSL (Domestic Substances List)

N-(2-Aminoethyl)piperazine (140-31-8)

Listed on the Canadian DSL (Domestic Substances List)

Tetraethylenepentamine (112-57-2)

Listed on the Canadian DSL (Domestic Substances List)

triethylenetetramine (112-24-3)

Listed on the Canadian DSL (Domestic Substances List)

Diethylenetriamine (111-40-0)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Contains the following REACH ingredient(s): 4-Nonylphenol, branched (EC 284-325-5, CAS 84852-15-3)

National regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

| Component | State or local regulations |
|----------------------------------|---|
| Tetraethylenepentamine(112-57-2) | U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List |
| triethylenetetramine(112-24-3) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List |

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| Component | State or local regulations |
|--------------------------------------|---|
| N-(2-Aminoethyl)piperazine(140-31-8) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List |
| Diethylenetriamine(111-40-0) | U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List |

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases:

| | |
|------|--|
| H302 | Harmful if swallowed |
| H311 | Toxic in contact with skin |
| H312 | Harmful in contact with skin |
| H314 | Causes severe skin burns and eye damage |
| H317 | May cause an allergic skin reaction |
| H332 | Harmful if inhaled |
| H335 | May cause respiratory irritation |
| H361 | Suspected of damaging fertility or the unborn child |
| H400 | Very toxic to aquatic life |
| H401 | Toxic to aquatic life |
| H402 | Harmful to aquatic life |
| H410 | Very toxic to aquatic life with long lasting effects |
| H411 | Toxic to aquatic life with long lasting effects |
| H412 | Harmful to aquatic life with long lasting effects |

SDS US - ResinLab

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.