

Issue Date 30-Jun-2015

Revision Date 20-Jul-2018

Version 1

## 1. IDENTIFICATION

### Product identifier

**Product Name** Tuffbond 318A

### Other means of identification

**Product Code** MS-318A

**UN/ID no.** UN 3082

**Synonyms** None

### Recommended use of the chemical and restrictions on use

**Recommended Use** Epoxy Adhesive.

**Uses advised against** None known

### Details of the supplier of the safety data sheet

#### **Manufacturer Address**

Hernon Manufacturing Inc.  
121 Tech Drive  
Sanford, FL 32771  
800-527-0004

### Emergency telephone number

**Company Phone Number** 407-322-4000

**Emergency Telephone** Chemtel 800-255-3924

## 2. HAZARDS IDENTIFICATION

### Classification

#### **OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                   |            |
|-----------------------------------|------------|
| Skin corrosion/irritation         | Category 2 |
| Serious eye damage/eye irritation | Category 2 |
| Skin sensitization                | Category 1 |
| Carcinogenicity                   | Category 2 |

### Label elements

#### **Emergency Overview**

##### **Warning**

##### **Hazard statements**

Causes skin irritation

Causes serious eye irritation

May cause an allergic skin reaction

Suspected of causing cancer

**Appearance** No information available**Physical state** Liquid**Odor** Mild**Precautionary Statements - Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required  
 Wash face, hands and any exposed skin thoroughly after handling  
 Avoid breathing dust/fume/gas/mist/vapors/spray  
 Contaminated work clothing should not be allowed out of the workplace  
 Wear protective gloves

**Precautionary Statements - Response**

IF exposed or concerned: Get medical advice/attention  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 If eye irritation persists: Get medical advice/attention  
 IF ON SKIN: Wash with plenty of soap and water  
 Take off contaminated clothing and wash before reuse  
 If skin irritation or rash occurs: Get medical advice/attention

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not applicable

**Other Information**

Toxic to aquatic life with long lasting effects.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance**

| Chemical Name           | CAS No.    | Weight-% | Trade Secret |
|-------------------------|------------|----------|--------------|
| BISPHENOL A EPOXY RESIN | 25068-38-6 | 60 - 100 | *            |
| CARBON BLACK            | 1333-86-4  | 0.1 - 1  | *            |

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

### 4. FIRST AID MEASURES

**Description of first aid measures****Eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin contact**

Wash with soap and water. Flush skin with water for several minutes. Remove contaminated clothing and shoes. If irritation develops, seek medical attention. Wash clothing before reuse.

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|                   |  |
|-------------------|--|
| <b>Inhalation</b> | Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately. |
| <b>Ingestion</b>  | Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a POISON CENTER or doctor/physician if you feel unwell.            |

**Most important symptoms and effects, both acute and delayed**

|                 |                           |
|-----------------|---------------------------|
| <b>Symptoms</b> | No information available. |
|-----------------|---------------------------|

**Indication of any immediate medical attention and special treatment needed**

|                           |                        |
|---------------------------|------------------------|
| <b>Note to physicians</b> | Treat symptomatically. |
|---------------------------|------------------------|

**5. FIRE-FIGHTING MEASURES****Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>). Extinguishing powder. Water spray (fog).

**Unsuitable extinguishing media** Water jet.

**Specific hazards arising from the chemical**

No information available.

**Hazardous combustion products** Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Nitrogen oxides (NO<sub>x</sub>).

**Explosion data**

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

|                             |   |
|-----------------------------|---|
| <b>Personal precautions</b> | Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. |
|-----------------------------|---|

**Environmental precautions**

|                                  |   |
|----------------------------------|---|
| <b>Environmental precautions</b> | Do not allow into any sewer, on the ground or into any body of water. See Section 12 for additional ecological information. |
|----------------------------------|---|

**Methods and material for containment and cleaning up**

|                                |  |
|--------------------------------|--|
| <b>Methods for containment</b> | Prevent further leakage or spillage if safe to do so.  |
| <b>Methods for cleaning up</b> | Soak up with inert absorbent material. Store in a closed container until ready for disposal. |

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Wash thoroughly after handling. Use only with adequate ventilation and in closed systems.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep at temperatures between 7° and 29 °C.

**Incompatible materials** Acids. Bases. Amines. Oxidizing agents.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Guidelines

| Chemical Name             | ACGIH TLV  | OSHA PEL   | NIOSH IDLH  |
|---------------------------|--|--|---|
| CARBON BLACK<br>1333-86-4 | TWA: 3 mg/m <sup>3</sup> inhalable<br>particulate matter | TWA: 3.5 mg/m <sup>3</sup><br>(vacated) TWA: 3.5 mg/m <sup>3</sup> | IDLH: 1750 mg/m <sup>3</sup><br>TWA: 3.5 mg/m <sup>3</sup><br>TWA: 0.1 mg/m <sup>3</sup> Carbon black in<br>presence of Polycyclic aromatic<br>hydrocarbons PAH |

### Appropriate engineering controls

**Engineering Controls** Showers  
Eyewash stations  
Ventilation systems.

### Individual protection measures, such as personal protective equipment

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Skin and body protection** Wear protective gloves and protective clothing.

**Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|                       |                          |                       |                          |
|-----------------------|--------------------------|-----------------------|--------------------------|
| <b>Physical state</b> | Liquid                   | <b>Odor</b>           | Mild                     |
| <b>Appearance</b>     | No information available | <b>Odor threshold</b> | No information available |
| <b>Color</b>          | Black                    |                       |                          |

#### Property

|                                       |                          |
|---------------------------------------|--------------------------|
| <b>pH</b>                             | Does not apply           |
| <b>Melting point / freezing point</b> | No information available |
| <b>Boiling point / boiling range</b>  | > 260 °C / 500 °F        |
| <b>Flash point</b>                    | > 252 °C / 486 °F        |
| <b>Evaporation rate</b>               | No information available |
| <b>Flammability (solid, gas)</b>      | No information available |
| <b>Flammability Limit in Air</b>      |                          |

#### Remarks • Method

|                                     |                           |
|-------------------------------------|---------------------------|
| <b>Upper flammability limit:</b>    | No information available  |
| <b>Lower flammability limit:</b>    | No information available  |
| <b>Vapor pressure</b>               | 0.03 hPa @ 77 °C / 171 °F |
| <b>Vapor density</b>                | No information available  |
| <b>Relative density</b>             | 1.17                      |
| <b>Water solubility</b>             | Insoluble                 |
| <b>Solubility in other solvents</b> | No information available  |
| <b>Partition coefficient</b>        | No information available  |
| <b>Autoignition temperature</b>     | No information available  |
| <b>Decomposition temperature</b>    | No information available  |
| <b>Kinematic viscosity</b>          | No information available  |
| <b>Dynamic viscosity</b>            | No information available  |
| <b>Explosive properties</b>         | No information available  |
| <b>Oxidizing properties</b>         | No information available  |

**Other Information**

|                         |                          |
|-------------------------|--------------------------|
| <b>Softening point</b>  | No information available |
| <b>Molecular weight</b> | No information available |
| <b>VOC Content (%)</b>  | No information available |
| <b>Density</b>          | No information available |
| <b>Bulk density</b>     | No information available |

## 10. STABILITY AND REACTIVITY

**Reactivity**

No data available

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Conditions to avoid**

Incompatible materials.

**Incompatible materials**

Acids. Bases. Amines. Oxidizing agents.

**Hazardous Decomposition Products**Carbon monoxide. Carbon dioxide (CO<sub>2</sub>).

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure****Product Information**

|                     |                    |
|---------------------|--------------------|
| <b>Inhalation</b>   | No data available. |
| <b>Eye contact</b>  | No data available. |
| <b>Skin contact</b> | No data available. |
| <b>Ingestion</b>    | No data available. |

| Chemical Name                         | Oral LD50             | Dermal LD50         | Inhalation LC50 |
|---------------------------------------|-----------------------|---------------------|-----------------|
| BISPHENOL A EPOXY RESIN<br>25068-38-6 | = 11400 mg/kg ( Rat ) | -                   | -               |
| CARBON BLACK<br>1333-86-4             | > 15400 mg/kg ( Rat ) | > 3 g/kg ( Rabbit ) | -               |

**Information on toxicological effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization** No information available.

**Germ cell mutagenicity** No information available.

**Carcinogenicity**

| Chemical Name             | ACGIH | IARC     | NTP | OSHA |
|---------------------------|-------|----------|-----|------|
| CARBON BLACK<br>1333-86-4 | A3    | Group 2B | -   | X    |

**Reproductive toxicity** No information available.

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

**Numerical measures of toxicity - Product Information**

The following values are calculated based on chapter 3.1 of the GHS document.

ATEmix (oral) 11,422.80 mg/kg

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

Toxic to aquatic life with long lasting effects.

| Chemical Name             | Algae/aquatic plants | Fish | Crustacea                             |
|---------------------------|----------------------|------|---------------------------------------|
| CARBON BLACK<br>1333-86-4 | -                    | -    | 5600: 24 h Daphnia magna mg/L<br>EC50 |

**Persistence and degradability**

No information available.

**Bioaccumulation**

No information available.

**Other adverse effects**

No information available.

## 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Disposal of wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated packaging** Do not reuse container.

## 14. TRANSPORT INFORMATION

**DOT**

|                             |   |
|-----------------------------|---|
| <b>UN/ID no.</b>            | UN 3082   |
| <b>Proper shipping name</b> | Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy Resin) |
| <b>Hazard Class</b>         | 9   |
| <b>Packing Group</b>        | III   |
| <b>Special Provisions</b>   | 8, 146, 173, 335, IB3, T4, TP1, TP29  |
| <b>Description</b>          | Note: Not regulated for ground transport                                      |

**IATA**

|                             |   |
|-----------------------------|---|
| <b>UN/ID no.</b>            | UN 3082   |
| <b>Proper shipping name</b> | Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy Resin) |
| <b>Hazard Class</b>         | 9   |
| <b>Packing Group</b>        | III   |
| <b>Special Provisions</b>   | A97, A158, A197   |
| <b>Description</b>          | Limited Quantities: 5L, 30 kg gross weight                                    |

**IMDG**

|                             |   |
|-----------------------------|---|
| <b>UN/ID no.</b>            | UN 3082   |
| <b>Proper shipping name</b> | Environmentally hazardous substance, liquid, n.o.s. (Bisphenol A Epoxy Resin) |
| <b>Hazard Class</b>         | 9   |
| <b>Packing Group</b>        | III   |
| <b>EmS-No.</b>              | F-A, S-F  |
| <b>Special Provisions</b>   | 274, 335, 969   |
| <b>Marine pollutant</b>     | Yes   |
| <b>Description</b>          | Limited Quantities: 5L, 30 kg gross weight                                    |

## 15. REGULATORY INFORMATION

**International Inventories**

|                      |          |
|----------------------|----------|
| <b>TSCA</b>          | Complies |
| <b>DSL/NDSL</b>      | Complies |
| <b>EINECS/ELINCS</b> | Complies |
| <b>ENCS</b>          | Complies |
| <b>IECSC</b>         | Complies |
| <b>KECL</b>          | Complies |
| <b>PICCS</b>         | Complies |
| <b>AICS</b>          | Complies |

All ingredients are on the inventory or are exempt from listing.

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

|                                   |    |
|-----------------------------------|----|
| Acute health hazard               | No |
| Chronic Health Hazard             | No |
| Fire hazard                       | No |
| Sudden release of pressure hazard | No |
| Reactive Hazard                   | No |

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

**US State Regulations****California Proposition 65**

This product contains the following Proposition 65 chemicals

| Chemical Name            | California Proposition 65 |
|--------------------------|---------------------------|
| CARBON BLACK - 1333-86-4 | Carcinogen                |

**U.S. State Right-to-Know Regulations**

| Chemical Name             | New Jersey | Massachusetts | Pennsylvania |
|---------------------------|------------|---------------|--------------|
| CARBON BLACK<br>1333-86-4 | X          | X             | X            |

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

|             |                  |                |                    |                                    |
|-------------|------------------|----------------|--------------------|------------------------------------|
| <b>NFPA</b> | Health hazards 1 | Flammability 1 | Instability 0      | Physical and Chemical Properties - |
| <b>HMIS</b> | Health hazards 1 | Flammability 1 | Physical hazards 0 | Personal protection -              |

|               |                          |
|---------------|--------------------------|
| Prepared By   | SDS coordinator          |
| Issue Date    | 30-Jun-2015              |
| Revision Date | 20-Jul-2018              |
| Revision Note | No information available |

**Disclaimer**

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.

**End of Safety Data Sheet**



Issue Date 30-Jun-2015

Revision Date 20-Jul-2018

Version 1

## 1. IDENTIFICATION

### Product identifier

**Product Name** Tuffbond 318B

### Other means of identification

**Product Code** MS-318B

**UN/ID no.** UN 1760

**Synonyms** None

### Recommended use of the chemical and restrictions on use

**Recommended Use** Hardener.

**Uses advised against** None known

### Details of the supplier of the safety data sheet

#### **Manufacturer Address**

Hernon Manufacturing Inc.  
121 Tech Drive  
Sanford, FL 32771  
800-527-0004

### Emergency telephone number

**Company Phone Number** 407-322-4000

**Emergency Telephone** Chemtel 800-255-3924

## 2. HAZARDS IDENTIFICATION

### Classification

#### **OSHA Regulatory Status**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                   |                           |
|-----------------------------------|---------------------------|
| Acute toxicity - Oral             | Category 4                |
| Acute toxicity - Dermal           | Category 4                |
| Skin corrosion/irritation         | Category 1 Sub-category B |
| Serious eye damage/eye irritation | Category 1                |
| Skin sensitization                | Category 1                |
| Reproductive toxicity             | Category 2                |

### Label elements

#### Emergency Overview

#### **Danger**

#### **Hazard statements**

Harmful if swallowed

Harmful in contact with skin

Causes severe skin burns and eye damage

May cause an allergic skin reaction

Suspected of damaging fertility or the unborn child



**Appearance** No information available      **Physical state** Liquid      **Odor** Fishy

**Precautionary Statements - Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Use personal protective equipment as required  
 Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Do not breathe dust/fume/gas/mist/vapors/spray  
 Contaminated work clothing should not be allowed out of the workplace  
 Wear protective gloves

**Precautionary Statements - Response**

Immediately call a POISON CENTER or doctor/physician  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 Immediately call a POISON CENTER or doctor/physician  
 Call a POISON CENTER or doctor/physician if you feel unwell  
 Wash contaminated clothing before reuse  
 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
 If skin irritation or rash occurs: Get medical advice/attention  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 Immediately call a POISON CENTER or doctor/physician  
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
 Rinse mouth  
 Do NOT induce vomiting

**Precautionary Statements - Storage**

Store locked up

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Not applicable

**Other Information**

Very toxic to aquatic life with long lasting effects

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Substance**

| Chemical Name               | CAS No.    | Weight-% | Trade Secret |
|-----------------------------|------------|----------|--------------|
| 1-(2-AMINOETHYL) PIPERAZINE | 140-31-8   | 30 - 60  | *            |
| NONYLPHENOL                 | 25154-52-3 | 15 - 40  | *            |

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

#### 4. FIRST AID MEASURES

##### Description of first aid measures

|                     |  |
|---------------------|--|
| <b>Eye contact</b>  | Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.   |
| <b>Skin contact</b> | Wash with soap and water. Flush skin with water for several minutes. Remove contaminated clothing and shoes. If irritation develops, seek medical attention. Wash clothing before reuse. |
| <b>Inhalation</b>   | Remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.                                   |
| <b>Ingestion</b>    | Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a POISON CENTER or doctor/physician if you feel unwell.  |

##### Most important symptoms and effects, both acute and delayed

**Symptoms** No information available.

##### Indication of any immediate medical attention and special treatment needed

**Note to physicians** Treat symptomatically.

#### 5. FIRE-FIGHTING MEASURES

##### Suitable extinguishing media

Alcohol-resistant foam, carbon dioxide, dry chemical, dry sand, limestone powder.

**Unsuitable extinguishing media** No information available.

##### Specific hazards arising from the chemical

No information available.

**Hazardous combustion products** May generate ammonia gas and toxic nitrogen oxide gases. Obnoxious and toxic fumes.

##### Explosion data

**Sensitivity to Mechanical Impact** None.

**Sensitivity to Static Discharge** None.

##### Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

#### 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions, protective equipment and emergency procedures

|                                 |   |
|---------------------------------|---|
| <b>Personal precautions</b>     | Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. |
| <b>For emergency responders</b> | Use personal protection recommended in Section 8.   |

##### Environmental precautions

**Environmental precautions** Do not allow into any sewer, on the ground or into any body of water. Collect spillage. See Section 12 for additional ecological information.

**Methods and material for containment and cleaning up**

|                                |  |
|--------------------------------|--|
| <b>Methods for containment</b> | Prevent further leakage or spillage if safe to do so.  |
| <b>Methods for cleaning up</b> | Soak up with inert absorbent material. Store in a closed container until ready for disposal. |

**7. HANDLING AND STORAGE****Precautions for safe handling**

**Advice on safe handling** Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Wash thoroughly after handling. Ensure adequate ventilation, especially in confined areas.

**Conditions for safe storage, including any incompatibilities**

|                               |   |
|-------------------------------|---|
| <b>Storage Conditions</b>     | Keep container tightly closed in a dry and well-ventilated place.   |
| <b>Incompatible materials</b> | Sodium hypochlorite. Organic acids. mineral acids. Metals. Oxidizing agents. Strong oxidizing agents. Strong organic acids. |

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters**

**Exposure Guidelines** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Appropriate engineering controls**

**Engineering Controls** Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment**

|                                 |   |
|---------------------------------|---|
| <b>Eye/face protection</b>      | Wear safety glasses with side shields (or goggles).   |
| <b>Skin and body protection</b> | Wear protective gloves and protective clothing. Use rubber or plastic gloves.   |
| <b>Respiratory protection</b>   | If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. |

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

|                       |                          |                       |                          |
|-----------------------|--------------------------|-----------------------|--------------------------|
| <b>Physical state</b> | Liquid                   | <b>Odor</b>           | fishy                    |
| <b>Appearance</b>     | No information available | <b>Odor threshold</b> | No information available |
| <b>Color</b>          | Amber - Yellow           |                       |                          |

| <b><u>Property</u></b>                | <b><u>Values</u></b>     | <b><u>Remarks • Method</u></b> |
|---------------------------------------|--------------------------|--------------------------------|
| <b>pH</b>                             | Alkaline                 |                                |
| <b>Melting point / freezing point</b> | No information available |                                |
| <b>Boiling point / boiling range</b>  | > 200 °C / 392 °F        |                                |
| <b>Flash point</b>                    | > 101 °C / 214 °F        |                                |
| <b>Evaporation rate</b>               | No information available |                                |

|                                     |                           |
|-------------------------------------|---------------------------|
| <b>Flammability (solid, gas)</b>    | No information available  |
| <b>Flammability Limit in Air</b>    |                           |
| <b>Upper flammability limit:</b>    | No information available  |
| <b>Lower flammability limit:</b>    | No information available  |
| <b>Vapor pressure</b>               | < 1 mm Hg @ 21 °C / 70 °F |
| <b>Vapor density</b>                | No information available  |
| <b>Relative density</b>             | 0.97                      |
| <b>Water solubility</b>             | Completely soluble        |
| <b>Solubility in other solvents</b> | No information available  |
| <b>Partition coefficient</b>        | No information available  |
| <b>Autoignition temperature</b>     | No information available  |
| <b>Decomposition temperature</b>    | No information available  |
| <b>Kinematic viscosity</b>          | No information available  |
| <b>Dynamic viscosity</b>            | No information available  |
| <b>Explosive properties</b>         | No information available  |
| <b>Oxidizing properties</b>         | No information available  |

**Other Information**

|                         |                          |
|-------------------------|--------------------------|
| <b>Softening point</b>  | No information available |
| <b>Molecular weight</b> | No information available |
| <b>VOC Content (%)</b>  | No information available |
| <b>Density</b>          | No information available |
| <b>Bulk density</b>     | No information available |

## 10. STABILITY AND REACTIVITY

**Reactivity**

No data available

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Conditions to avoid**

Incompatible materials.

**Incompatible materials**

sodium hypochlorite. Organic acids. mineral acids. Metals. Oxidizing agents. Strong oxidizing agents. Strong organic acids.

**Hazardous Decomposition Products**

Nitric acid. Ammonia. Nitrogen oxides (NOx).

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure****Product Information**

|                     |                    |
|---------------------|--------------------|
| <b>Inhalation</b>   | No data available. |
| <b>Eye contact</b>  | No data available. |
| <b>Skin contact</b> | No data available. |
| <b>Ingestion</b>    | No data available. |

| <b>Chemical Name</b>                    | <b>Oral LD50</b>     | <b>Dermal LD50</b>      | <b>Inhalation LC50</b> |
|---|----------------------|-------------------------|------------------------|
| 1-(2-AMINOETHYL) PIPERAZINE<br>140-31-8 | = 2140 µL/kg ( Rat ) | = 880 µL/kg ( Rabbit )  | -                      |
| NONYLPHENOL<br>25154-52-3               | = 580 mg/kg ( Rat )  | = 2031 mg/kg ( Rabbit ) | -                      |

**Information on toxicological effects**

**Symptoms** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Sensitization** No information available.  
**Germ cell mutagenicity** No information available.  
**Carcinogenicity** No information available.  
**Reproductive toxicity** No information available.  
**STOT - single exposure** No information available.  
**STOT - repeated exposure** No information available.  
**Aspiration hazard** No information available.

**Numerical measures of toxicity- Product Information**

The following values are calculated based on chapter 3.1 of the GHS document.

**ATEmix (oral)** 527.30 mg/kg  
**ATEmix (dermal)** 1,328.30 mg/kg

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Very toxic to aquatic life with long lasting effects

| Chemical Name                           | Algae/aquatic plants  | Fish  | Crustacea  |
|---|---|---|--|
| 1-(2-AMINOETHYL) PIPERAZINE<br>140-31-8 | 495: 72 h Pseudokirchneriella subcapitata mg/L EC50   | 1950 - 2460: 96 h Pimephales promelas mg/L LC50 flow-through<br>1000: 96 h Poecilia reticulata mg/L LC50 semi-static<br>100: 96 h Oncorhynchus mykiss mg/L LC50 semi-static | 32: 48 h Daphnia magna mg/L EC50   |
| NONYLPHENOL<br>25154-52-3               | 0.41: 96 h Pseudokirchneriella subcapitata mg/L EC50<br>1.3: 72 h Desmodesmus subspicatus mg/L EC50 | 0.135: 96 h Pimephales promelas mg/L LC50 flow-through  | 0.14: 48 h Daphnia magna mg/L EC50<br>0.17 - 0.21: 48 h Daphnia magna mg/L EC50 Static<br>0.0874 - 0.124: 48 h Daphnia magna mg/L EC50 semi-static |

**Persistence and degradability**

No information available.

**Bioaccumulation**

| Chemical Name                           | Partition coefficient |
|---|-----------------------|
| 1-(2-AMINOETHYL) PIPERAZINE<br>140-31-8 | -1.48                 |
| NONYLPHENOL<br>25154-52-3               | 3.28                  |

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods**

**Disposal of wastes** Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated packaging** Do not reuse container.

## 14. TRANSPORT INFORMATION

**DOT**

|                             |   |
|-----------------------------|---|
| <b>UN/ID no.</b>            | UN 1760   |
| <b>Proper shipping name</b> | Corrosive liquids, n.o.s. (Nonylphenol, Aminoethyl) piperazine, 1-(2-, (AEP)) |
| <b>Hazard Class</b>         | 8   |
| <b>Packing Group</b>        | II  |
| <b>Special Provisions</b>   | None  |
| <b>Marine pollutant</b>     | Yes.  |

**TDG**

|                             |   |
|-----------------------------|---|
| <b>UN/ID no.</b>            | UN1760  |
| <b>Proper shipping name</b> | Corrosive liquids, n.o.s. (Nonylphenol, Aminoethyl) piperazine, 1-(2-, (AEP)) |
| <b>Hazard Class</b>         | 8   |
| <b>Packing Group</b>        | II  |
| <b>Special Provisions</b>   | None  |
| <b>Marine pollutant</b>     | Yes   |

**IATA**

|                             |   |
|-----------------------------|---|
| <b>UN/ID no.</b>            | UN1760  |
| <b>Proper shipping name</b> | Corrosive liquids, n.o.s. (Nonylphenol, Aminoethyl) piperazine, 1-(2-, (AEP)) |
| <b>Hazard Class</b>         | 8   |
| <b>Packing Group</b>        | II  |
| <b>Special Provisions</b>   | None  |

**IMDG**

|                             |   |
|-----------------------------|---|
| <b>UN/ID no.</b>            | UN1760  |
| <b>Proper shipping name</b> | Corrosive liquids, n.o.s. (Nonylphenol, Aminoethyl) piperazine, 1-(2-, (AEP)) |
| <b>Hazard Class</b>         | 8   |
| <b>Packing Group</b>        | II  |
| <b>Special Provisions</b>   | None  |
| <b>Marine pollutant</b>     | Yes   |

## 15. REGULATORY INFORMATION

**International Inventories**

|                      |          |
|----------------------|----------|
| <b>TSCA</b>          | Complies |
| <b>DSL/NDSL</b>      | Complies |
| <b>EINECS/ELINCS</b> | Complies |
| <b>ENCS</b>          | Complies |
| <b>IECSC</b>         | Complies |
| <b>KECL</b>          | Complies |
| <b>PICCS</b>         | Complies |
| <b>AICS</b>          | Complies |

All ingredients are on the inventory or are exempt from listing.

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances  
**ENCS** - Japan Existing and New Chemical Substances  
**IECSC** - China Inventory of Existing Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**AICS** - Australian Inventory of Chemical Substances

**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

| Chemical Name            | SARA 313 - Threshold Values % |
|--------------------------|-------------------------------|
| NONYLPHENOL - 25154-52-3 | 1.0                           |

**SARA 311/312 Hazard Categories**

|                                   |     |
|-----------------------------------|-----|
| Acute health hazard               | Yes |
| Chronic Health Hazard             | No  |
| Fire hazard                       | No  |
| Sudden release of pressure hazard | No  |
| Reactive Hazard                   | No  |

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

**US State Regulations****California Proposition 65**

This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

| Chemical Name                           | New Jersey | Massachusetts | Pennsylvania |
|---|------------|---------------|--------------|
| 1-(2-AMINOETHYL) PIPERAZINE<br>140-31-8 | X          | X             | X            |
| NONYLPHENOL<br>25154-52-3               | -          | X             | X            |

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

|                    |                  |                |                    |                                    |
|--------------------|------------------|----------------|--------------------|------------------------------------|
| <b><u>NFPA</u></b> | Health hazards 0 | Flammability 0 | Instability 0      | Physical and Chemical Properties - |
| <b><u>HMIS</u></b> | Health hazards 3 | Flammability 1 | Physical hazards 0 | Personal protection X              |

|               |                          |
|---------------|--------------------------|
| Prepared By   | SDS coordinator          |
| Issue Date    | 30-Jun-2015              |
| Revision Date | 20-Jul-2018              |
| Revision Note | No information available |

**Disclaimer**

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.

**End of Safety Data Sheet**