SAFETY DATA SHEET
Polyguard epoxy Base- Part B

Section 1. Identification

GHS product identifier : Polyguard epoxy Base- Part B
Other means of identification : Not available.
Product type : Solid.

Identified uses
Protection of pipeline field joints, girth welds, valves, fittings and a holiday repair material on FBE coated pipe and for pipeline coating rehabilitation.

Manufacturer
Polyguard Products Inc.
3801 South Interstate 45
Ennis, TX 75119
Tel: (800)541-4994

Supplier's details
Crossroads & C&I
11104 180 Street NW
Edmonton, Alberta
Canada T5S 2X5

Emergency telephone number (with hours of operation) : CHEMTREC, U.S. : 1-800-424-9300 International: +1-703-527-3887 (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (inhalation) - Category 2
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements
Hazard pictograms : 

Signal word : Danger
Section 2. Hazards identification

Hazard statements:
- H330 - Fatal if inhaled.
- H302 - Harmful if swallowed.
- H319 - Causes serious eye irritation.
- H315 - Causes skin irritation.
- H317 - May cause an allergic skin reaction.
- H341 - Suspected of causing genetic defects.
- H373 - May cause damage to organs through prolonged or repeated exposure.
- H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements:

Prevention:
- P201 - Obtain special instructions before use.
- P202 - Do not handle until all safety precautions have been read and understood.
- P281 - Use personal protective equipment as required.
- P280 - Wear protective gloves. Wear eye or face protection.
- P284 - Wear respiratory protection.
- P271 - Use only outdoors or in a well-ventilated area.
- P273 - Avoid release to the environment.
- P260 - Do not breathe vapor.
- P270 - Do not eat, drink or smoke when using this product.
- P281 - Use personal protective equipment as required.
- P280 - Wear protective gloves. Wear eye or face protection.
- P273 - Avoid release to the environment.
- P260 - Do not breathe vapor.
- P270 - Do not eat, drink or smoke when using this product.
- P284 - Wear respiratory protection.
- P271 - Use only outdoors or in a well-ventilated area.
- P272 - Contaminated work clothing should not be allowed out of the workplace.

Response:
- P391 - Collect spillage.
- P314 - Get medical attention if you feel unwell.
- P308 + P313 - IF exposed or concerned: Get medical attention.
- P304 + P340 + P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.
- P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.
- P302 + P352 + P362-2 + P363 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse.
- P333 + P313 - If skin irritation or rash occurs: Get medical attention.
- P305 + P351 + P336 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313 - If eye irritation persists: Get medical attention.

Storage:
- P405 - Store locked up.

Disposal:
- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified (HNOC):
- Physical hazards not otherwise classified (PHNOC): None known.
- Health hazards not otherwise classified (HHNOC): None known.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture
Other means of identification: Not available.

CAS number/other identifiers:
- CAS number: Not applicable.
- Product code: Not available.
**Section 3. Composition/information on ingredients**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde, oligomeric reaction products with phenol and m-phenylenebis(methylamine)</td>
<td>60 - 100</td>
<td>57214-10-5</td>
</tr>
<tr>
<td>Phenol</td>
<td>10 - 30</td>
<td>108-95-2</td>
</tr>
<tr>
<td>M-phenylenebis(methylamine)</td>
<td>10 - 30</td>
<td>1477-55-0</td>
</tr>
<tr>
<td>29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32 copper</td>
<td>5 - 10</td>
<td>147-14-8</td>
</tr>
<tr>
<td>3-Aminopropyltriethoxysilane</td>
<td>1 - 5</td>
<td>919-30-2</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

**Section 4. First aid measures**

**Description of necessary first aid measures**

**Eye contact**: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.

**Inhalation**: Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Skin contact**: Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**: Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.

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

**Potential acute health effects**

**Eye contact**: Causes serious eye irritation.

**Inhalation**: Fatal if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Skin contact**: Causes skin irritation. May cause an allergic skin reaction.

**Ingestion**: Harmful if swallowed. Irritating to mouth, throat and stomach.

**Over-exposure signs/symptoms**

**Eye contact**: Adverse symptoms may include the following: pain or irritation, watering, redness.

**Inhalation**: No known significant effects or critical hazards.
Section 4. First aid measures

<table>
<thead>
<tr>
<th>Protection of first-aiders</th>
<th>Ingestion</th>
<th>Skin contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.</td>
<td>No known significant effects or critical hazards.</td>
<td>Adverse symptoms may include the following: irritation redness</td>
</tr>
</tbody>
</table>

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

| Suitable extinguishing media | Use an extinguishing agent suitable for the surrounding fire. |
| Unsuitable extinguishing media | None known. |

Specific hazards arising from the chemical: This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

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

Special protective actions for fire-fighters: No special measures are required.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

| Personal precautions, protective equipment and emergency procedures |
|---------------------------|---------------------------------|
| For non-emergency personnel | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. |
| For emergency responders | If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
Section 6. Accidental release measures

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

Methods and materials for containment and cleaning up

Spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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

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

Section 8. Exposure controls/personal protection

Control parameters

United States

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>ACGIH TLV (United States, 4/2014). Absorbed through skin. TWA: 19 mg/m³ 8 hours. TWA: 5 ppm 8 hours. NIOSH REL (United States, 10/2013). Absorbed through skin. CEIL: 60 mg/m³ 15 minutes. CEIL: 15.6 ppm 15 minutes. TWA: 19 mg/m³ 10 hours. TWA: 5 ppm 10 hours. OSHA PEL (United States, 2/2013). Absorbed through skin. TWA: 19 mg/m³ 8 hours.</td>
</tr>
</tbody>
</table>
Section 8. Exposure controls/personal protection

M-phenylenebis(methylamine)

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Body protection
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

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

Skin protection
Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Appropriate engineering controls
Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>List name</th>
<th>TWA (8 hours)</th>
<th>STEL (15 mins)</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>US ACGIH 4/2014</td>
<td>5 ppm</td>
<td>19 mg/m³</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>AB 4/2009</td>
<td>5 ppm</td>
<td>19 mg/m³</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>BC 7/2013</td>
<td>5 ppm</td>
<td>19 mg/m³</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>ON 1/2013</td>
<td>5 ppm</td>
<td>19 mg/m³</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>QC 1/2014</td>
<td>5 ppm</td>
<td>19 mg/m³</td>
<td>Other</td>
</tr>
<tr>
<td>M-phenylenebis(methylamine)</td>
<td>US ACGIH 4/2014</td>
<td>5 ppm</td>
<td>19 mg/m³</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>AB 4/2009</td>
<td>5 ppm</td>
<td>19 mg/m³</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>BC 7/2013</td>
<td>5 ppm</td>
<td>19 mg/m³</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>ON 1/2013</td>
<td>5 ppm</td>
<td>19 mg/m³</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>QC 1/2014</td>
<td>5 ppm</td>
<td>19 mg/m³</td>
<td>Other</td>
</tr>
</tbody>
</table>


TWA: 5 ppm 8 hours. ACGIH TLV (United States, 4/2014). Absorbed through skin.
C: 0.1 mg/m³ NIOSH REL (United States, 10/2013). Absorbed through skin.
CEIL: 0.1 mg/m³ OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.

Canada

Tel: +1-888-GHS-7769 (447-7769) / +1-450-GHS-7767 (447-7767)
Section 8. Exposure controls/personal protection

Respiratory protection: Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state: Liquid. [Paste.]
Color: Blue.
Odor: Amine-like.
Odor threshold: Not available.

pH: 10.7
Melting point: Not available.
Boiling point: Not available.
Flash point: Closed cup: 104°C (219.2°F) [Pensky-Martens.]
Evaporation rate: Not available.
Flammability (solid, gas): Not available.
Lower and upper explosive (flammable) limits: Not available.

Vapor pressure: Not available.
Vapor density: Not available.
Relative density: 1.05
Solubility: Not soluble in water.
Partition coefficient: n-octanol/water: Not available.

Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
Viscosity: Dynamic (room temperature): 11000 to 12000 mPa·s (11000 to 12000 cP)
Volatility: Not available.

Section 10. Stability and reactivity

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

Chemical stability: The product is stable.

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

Conditions to avoid: No specific data.

Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>316 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>630 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rat</td>
<td>669 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>317 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>M-phenylenebis(methylamine)</td>
<td>LC50 Inhalation Gas.</td>
<td>Rat</td>
<td>700 ppm</td>
<td>1 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>2 g/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>930 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>3-Aminopropyltriethoxysilane</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>4.29 g/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1.57 g/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>5 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>535 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>0.5 minutes 5 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Pig</td>
<td>-</td>
<td>0.5 minutes 400 µL</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 mg</td>
<td>-</td>
</tr>
<tr>
<td>M-phenylenebis(methylamine)</td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 50 µg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 750 µg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 mg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 750 µg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 5 mg</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Sensitization

There is no data available.

#### Carcinogenicity

**Classification**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>EPA</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>A4</td>
<td>-</td>
<td>None.</td>
</tr>
</tbody>
</table>

#### Specific target organ toxicity (single exposure)

There is no data available.

#### Specific target organ toxicity (repeated exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>Category 2</td>
<td>Not determined</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

**Aspiration hazard**

There is no data available.

**Information on the likely routes of exposure**

- Dermal contact. Eye contact. Inhalation. Ingestion.

**Potential acute health effects**

- **Eye contact**: Causes serious eye irritation.
- **Inhalation**: Fatal if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- **Skin contact**: Causes skin irritation. May cause an allergic skin reaction.
- **Ingestion**: Harmful if swallowed. Irritating to mouth, throat and stomach.

**Symptoms related to the physical, chemical and toxicological characteristics**
Section 11. Toxicological information

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

Inhalation: No known significant effects or critical hazards.

Skin contact: Adverse symptoms may include the following:
- irritation
- redness

Ingestion: No known significant effects or critical hazards.

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

**Short term exposure**

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

**Long term exposure**

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

**Potential chronic health effects**

General: May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: Suspected of causing genetic defects.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>513.2 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>3556.9 mg/kg</td>
</tr>
<tr>
<td>Inhalation (gases)</td>
<td>25687.5 ppm</td>
</tr>
<tr>
<td>Inhalation (vapors)</td>
<td>1.804 mg/L</td>
</tr>
</tbody>
</table>

Section 12. Ecological information

**Toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>Acute EC50 61.1 µg/L Fresh water</td>
<td>Algae - Pseudokirchnerielia subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 36 mg/L Marine water</td>
<td>Algae - Hormosira banksii - Gamete</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 12000 µg/L Fresh water</td>
<td>Aquatic plants - Lemna minor</td>
<td>4 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 4200 µg/L Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 800 µg/L Marine water</td>
<td>Crustaceans - Archaeomysis kokuboi - Juvenile (Fledgling, Hatchling, Weanling)</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1.75 µg/L Fresh water</td>
<td>Fish - Cyprinus carpio - Larvae</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic EC10 969 µg/L Fresh water</td>
<td>Algae - Pseudokirchnerielia subcapitata - Exponential growth phase</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic IC10 2.38 ng/L Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>21 days</td>
</tr>
</tbody>
</table>
Section 12. Ecological information

Persistence and degradability
There is no data available.

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>1.47</td>
<td>647</td>
<td>high</td>
</tr>
<tr>
<td>M-phenylenebis(methylamine)</td>
<td>0.18</td>
<td>2.69</td>
<td>low</td>
</tr>
<tr>
<td>29H,31H-phthalocyaninato(2-)-N29, N30,N31,N32 copper</td>
<td>6.6</td>
<td>-</td>
<td>high</td>
</tr>
<tr>
<td>3-Aminopropyltriethoxysilane</td>
<td>1.7</td>
<td>3.4</td>
<td>low</td>
</tr>
</tbody>
</table>

Mobility in soil

- Soil/water partition coefficient (K<sub>oc</sub>)
  - There is no data available.

Other adverse effects
- No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods
- The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS #</th>
<th>Status</th>
<th>Reference number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>Listed</td>
<td>U188</td>
</tr>
</tbody>
</table>

Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT</th>
<th>TDG</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN2811</td>
<td>UN2811</td>
<td>UN2811</td>
<td>UN2811</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UN proper shipping name</th>
<th>DOT</th>
<th>TDG</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOXIC SOLID, ORGANIC, N.O.S. (Phenol), RQ (Phenol)</td>
<td>6.1</td>
<td>6.1</td>
<td>6.1</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Section 14. Transport information

<table>
<thead>
<tr>
<th>Packing group</th>
<th>II</th>
<th>II</th>
<th>II</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td>Additional information</td>
<td>Reportable quantity</td>
<td>The marine pollutant mark is not required when transported by road or rail.</td>
<td>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</td>
<td>The environmentally hazardous substance mark may appear if required by other transportation regulations.</td>
</tr>
<tr>
<td>Reportable quantity</td>
<td>4432.6 lbs / 2012.4 kg [506.31 gal / 1916.6 L]</td>
<td></td>
<td>Emergency schedules (EmS)</td>
<td>F-A, S-A</td>
</tr>
<tr>
<td>Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DOT-RQ Details
- Phenol
- 1000 lbs / 454 kg
- AERG : 154

Special precautions for user
- Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Not available.

Section 15. Regulatory information

U.S. Federal regulations
- United States inventory (TSCA 8b): Not determined.
- Clean Water Act (CWA) 311: Phenol
- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Listed
- Clean Air Act Section 602 Class I Substances: Not listed
- Clean Air Act Section 602 Class II Substances: Not listed
- DEA List I Chemicals (Precursor Chemicals): Not listed
- DEA List I Chemicals (Precursor Chemicals): Not listed
- SARA 302/304

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>EHS</th>
<th>SARA 302 TPQ (lbs)</th>
<th>SARA 302 TPQ (gallons)</th>
<th>SARA 304 RQ (lbs)</th>
<th>SARA 304 RQ (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>10 - 30</td>
<td>Yes.</td>
<td>500 / 10000</td>
<td>-</td>
<td>1000</td>
<td>-</td>
</tr>
</tbody>
</table>

SARA 304 RQ: 4432.6 lbs / 2012.4 kg [506.3 gal / 1916.6 L]
SARA 311/312
- Classification: Immediate (acute) health hazard
- Delayed (chronic) health hazard
Section 15. Regulatory information

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Aminopropyltriethoxysilane</td>
<td>1 - 5</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

SARA 313

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>10 - 30</td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts: The following components are listed: Phenol; M-phenylenebis(methylamine)
New York: The following components are listed: Phenol
New Jersey: The following components are listed: Phenol; M-phenylenebis(methylamine); 29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32 copper
Pennsylvania: The following components are listed: Phenol; M-phenylenebis(methylamine); 29H,31H-phthalocyaninato(2-)-N29,N30,N31,N32 copper

California Prop. 65
No products were found.

Canada

Canadian lists

Canadian NPRI: The following components are listed: Phenol; 29H,31H-phthalocyaninato(2-)-N29,N30, N31,N32 copper

CEPA Toxic substances: None of the components are listed.

Canada inventory: Not determined.

International lists

National inventory

Australia: Not determined.
China: Not determined.
Europe: Not determined.
Japan: Not determined.
Malaysia: Not determined.
New Zealand: Not determined.
Philippines: Not determined.
Republic of Korea: Not determined.
Taiwan: Not determined.
Section 16. Other information

History

Date of issue mm/dd/yyyy : 06/15/2015
Version : 1
Prepared by : KMK Regulatory Services Inc.

Notice to reader
To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.