Section 1. Identification

GHS product identifier : Epoxy Hardener
Other means of identification : Not available.
Product code : 5920550, 5920552, 5920555, 5920560, 5920565
Product type : Liquid.
Product use : Dental Products

Relevant identified uses of the substance or mixture and uses advised against
Not applicable.

Supplier's details : Keystone Industries
52 West King Street
Myerstown, PA 17067
(856) 663-4700

Emergency telephone number (with hours of operation) : (800) 535-5053

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 3
ACUTE TOXICITY (dermal) - Category 3
ACUTE TOXICITY (inhalation) - Category 3
SKIN CORROSION - Category 1B
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 2
CARCINOGENICITY - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 88%

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :
Toxic if swallowed, in contact with skin or if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause cancer.
Suspected of causing genetic defects.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
Section 2. Hazards identification

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response: Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF ON SKIN: Take off immediately all contaminated clothing and wash it before reuse. Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. 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 physician.

Storage: Store locked up.

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

Hazards not otherwise classified: 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.

May contain one or more of the following components in quantities considered hazardous:

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS number</th>
<th>EC number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>phenol</td>
<td>108-95-2</td>
<td>203-632-7</td>
<td>≥10 - ≤15</td>
</tr>
<tr>
<td>Formaldehyde, solution</td>
<td>50-00-0</td>
<td>200-001-8</td>
<td>≤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.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact: Get medical attention immediately. Call a poison center or physician. 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 10 minutes. Chemical burns must be treated promptly by a physician.

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. Loosen tight clothing such as a collar, tie, belt or waistband. 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**

Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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

**Potential acute health effects**

- **Eye contact**: Causes serious eye damage.
- **Inhalation**: Toxic if inhaled.
- **Skin contact**: Causes severe burns. Toxic in contact with skin. May cause an allergic skin reaction.
- **Ingestion**: Toxic if swallowed.

**Over-exposure signs/symptoms**

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

- **Inhalation**: No specific data.

- **Skin contact**: Adverse symptoms may include the following:
  - pain or irritation
  - redness
  - blistering may occur
  - irritation

- **Ingestion**: Adverse symptoms may include the following:
  - stomach pains

**Indication of immediate medical attention and special treatment needed, if necessary**

- **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

**Extinguishing media**

**Suitable extinguishing media**: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**: None known.

**Specific hazards arising from the chemical**

**Hazardous thermal decomposition products**: In a fire or if heated, a pressure increase will occur and the container may burst. Decomposition products may include the following materials:
- Carbon dioxide
- Carbon monoxide
- Nitrogen oxides

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**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. Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**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".

**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).

**Methods and materials for containment and cleaning up**

**Small spill**: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large 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. 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. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
| phenol          | ACGIH TLV (United States, 3/2015). Absorbed through skin.  
|                 | TWA: 5 ppm 8 hours.  
|                 | TWA: 19 mg/m³ 8 hours.  
|                 | TWA: 5 ppm 8 hours.  
|                 | TWA: 19 mg/m³ 8 hours.  
|                 | NIOSH REL (United States, 10/2013). Absorbed through skin.  
|                 | TWA: 5 ppm 10 hours.  
|                 | TWA: 19 mg/m³ 10 hours.  
|                 | CEIL: 15.6 ppm 15 minutes.  
|                 | CEIL: 60 mg/m³ 15 minutes.  
|                 | OSHA PEL (United States, 2/2013). Absorbed through skin.  
|                 | TWA: 5 ppm 8 hours.  
|                 | TWA: 19 mg/m³ 8 hours.  
| formaldehyde    | ACGIH TLV (United States, 3/2015). Skin sensitizer. Inhalation sensitizer.  
|                 | C: 0.3 ppm  
|                 | C: 0.37 mg/m³  
|                 | TWA: 0.75 ppm 8 hours.  
|                 | STEL: 2 ppm 15 minutes.  
|                 | OSHA PEL Z2 (United States, 2/2013).  
|                 | TWA: 0.75 ppm 8 hours.  
|                 | STEL: 2 ppm 15 minutes.  
|                 | NIOSH REL (United States, 10/2013).  

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Section 8. Exposure controls/personal protection

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.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

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.

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.

Respiratory protection: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state: Liquid.
Color: Straw [Light]
Odor: Amine-like.
\[pH\]: Not available.
Melting point: Not available.
Boiling point: Not available.
Flash point: Closed cup: >93°C (>199.4°F) [Setaflash.]
Section 9. Physical and chemical properties

- **Evaporation rate**: <1 (butyl acetate = 1)
- **Lower and upper explosive (flammable) limits**: Not available.
- **Vapor pressure**: Not available.
- **Vapor density**: >1 [Air = 1]
- **Relative density**: 1.0788
- **Solubility**: Insoluble in the following materials: cold water and hot water.
- **Solubility in water**: Not available.
- **Partition coefficient: n-octanol/water**: Not available.
- **Auto-ignition temperature**: Not available.
- **Viscosity**: Dynamic (room temperature): 4500 mPa·s (4500 cP)

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**: No specific data.
- **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></td>
<td>LC50 Inhalation Gas.</td>
<td>Rat</td>
<td>250 ppm</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>270 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>100 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>formaldehyde</td>
<td></td>
<td></td>
<td></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 - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>0.5 minutes 5 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>5 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Pig</td>
<td>-</td>
<td>0.5 minutes 400 microliters</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>535</td>
<td>-</td>
</tr>
</tbody>
</table>

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## Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Formaldehyde</th>
<th>Eyes - Mild irritant</th>
<th>Human</th>
<th>-</th>
<th>milligrams</th>
<th>6 minutes 1 parts per million</th>
<th>-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 750 Micrograms 750</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>Micrograms 72 hours 150</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin - Mild irritant</td>
<td>Human</td>
<td>-</td>
<td>0.01 Percent</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin - Severe irritant</td>
<td>Human</td>
<td>-</td>
<td>540 milligrams</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>50 milligrams</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>2 milligrams</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>phenol</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>formaldehyde</td>
<td>+</td>
<td>1</td>
<td>Known to be a human carcinogen.</td>
</tr>
</tbody>
</table>

### Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>formaldehyde</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

### 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>

### Information on the likely routes of exposure

Potential acute health effects

- **Eye contact**: Causes serious eye damage.
- **Inhalation**: Toxic if inhaled.
- **Skin contact**: Causes severe burns. Toxic in contact with skin. May cause an allergic skin reaction.
- **Ingestion**: Toxic if swallowed.

### Symptoms related to the physical, chemical and toxicological characteristics

- **Eye contact**: Adverse symptoms may include the following: pain, watering, redness
- **Inhalation**: No specific data.
- **Skin contact**: Adverse symptoms may include the following: pain or irritation, redness, blistering may occur, irritation

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**Ingestion**
Adverse symptoms may include the following:
- stomach pains

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

**Short term exposure**
- Potential immediate effects: Not available.
- Potential delayed effects: Not available.

**Long term exposure**
- Potential immediate effects: Not available.
- Potential delayed effects: Not available.

**Potential chronic health effects**
Not available.

**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**
May cause cancer. Risk of cancer depends on duration and level of exposure.

**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>109.1 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>613 mg/kg</td>
</tr>
<tr>
<td>Inhalation (gases)</td>
<td>8400 ppm</td>
</tr>
<tr>
<td>Inhalation (vapors)</td>
<td>3.6 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 - Pseudokirchneriella 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 94 mg/l Fresh water</td>
<td>Aquatic plants - Lemna aequinoctialis</td>
<td>96 hours</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 - Pseudokirchneriella subcapitata - Exponential growth phase</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 1.5 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>21 days</td>
</tr>
</tbody>
</table>
Section 12. Ecological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogPow</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>
</tbody>
</table>

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogPow</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>
</tbody>
</table>

Mobility in soil

Soil/water partition coefficient (Koc): Not 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 at all times 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 emptied 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>
<tr>
<td>Formaldehyde</td>
<td></td>
<td>Listed</td>
<td>U122</td>
</tr>
</tbody>
</table>

Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN2922</td>
<td>UN2922</td>
<td>UN2922</td>
<td>UN2922</td>
<td>UN2922</td>
<td>UN2922</td>
<td>UN2922</td>
</tr>
</tbody>
</table>

UN proper shipping name: Corrosive liquid, toxic, n.o.s. (phenol, Formaldehyde, solution)
Section 14. Transport information

<table>
<thead>
<tr>
<th>Transport hazard class(es)</th>
<th>II</th>
<th>II</th>
<th>II</th>
<th>II</th>
<th>II</th>
<th>II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental hazards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional information</td>
<td>10000 lbs / 4540 kg [1112.6 gal / 4211.5 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</td>
<td>Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8), 2.26-2.36 (Class 6), 2.7 (Marine pollutant mark).</td>
<td>-</td>
<td>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</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>Special precautions for user</td>
<td>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.</td>
<td>Transport in bulk according to Annex II of MARPOL and the IBC Code: Not available.</td>
<td>U.S. Federal regulations: TSCA 8(a) CDR Exempt/Partial exemption: Not determined United States inventory (TSCA 8b): All components are listed or exempted. Clean Water Act (CWA) 307: phenol Clean Water Act (CWA) 311: phenol; Formaldehyde Clean Air Act (CAA) 112 regulated toxic substances: Formaldehyde</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Section 15. Regulatory information

Clean Air Act Section 112: Listed
(b) Hazardous Air Pollutants (HAPs)
Clean Air Act Section 602: Not listed
Class I Substances
Clean Air Act Section 602: Not listed
Class II Substances
DEA List I Chemicals (Precursor Chemicals): Not listed
DEA List II Chemicals (Essential 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 - ≤15</td>
<td>Yes.</td>
<td>500 / 10000</td>
<td>500</td>
<td>1000</td>
<td>14.8</td>
</tr>
<tr>
<td>formaldehyde</td>
<td>≤2</td>
<td>Yes.</td>
<td>-</td>
<td>73.9</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

SARA 304 RQ: 10000 lbs / 4540 kg [1112.6 gal / 4211.5 L]

SARA 311/312

Classification: Immediate (acute) health hazard
Delayed (chronic) health hazard

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>
</table>

SARA 313

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements</td>
<td>phenol</td>
<td>108-95-2</td>
</tr>
<tr>
<td></td>
<td>Formaldehyde, solution</td>
<td>50-00-0</td>
</tr>
<tr>
<td></td>
<td>≤2</td>
<td></td>
</tr>
<tr>
<td>Supplier notification</td>
<td>phenol</td>
<td>108-95-2</td>
</tr>
<tr>
<td></td>
<td>Formaldehyde, solution</td>
<td>50-00-0</td>
</tr>
<tr>
<td></td>
<td>≤2</td>
<td></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; FORMALDEHYDE
New York: The following components are listed: Phenol; Carbolic acid; Formaldehyde
New Jersey: The following components are listed: PHENOL; CARBOLIC ACID; FORMALDEHYDE; FORMALIN
Pennsylvania: The following components are listed: PHENOL; FORMALDEHYDE
California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.
Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde, solution</td>
<td>Yes.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

**Canada inventory**: All components are listed or exempted.

**International regulations**

**International lists**
- **Australia inventory (AICS)**: All components are listed or exempted.
- **China inventory (IECSC)**: All components are listed or exempted.
- **Japan inventory (ENCS)**: Not determined.
- **Japan inventory (ISHL)**: Not determined.
- **Korea inventory**: All components are listed or exempted.
- **Malaysia Inventory (EHS Register)**: Not determined.
- **New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
- **Philippines inventory (PICCS)**: All components are listed or exempted.
- **Taiwan Chemical Substances Inventory (TCSI)**: All components are listed or exempted.
- **Turkey inventory**: Not determined.

**Chemical Weapons Convention List Schedule I Chemicals**: Not listed

**Chemical Weapons Convention List Schedule II Chemicals**: Not listed

**Chemical Weapons Convention List Schedule III Chemicals**: Not listed

Section 16. Other information

**Hazardous Material Information System (U.S.A.)**

- **Health**: 3
- **Flammability**: 1
- **Physical hazards**: 0
- **Personal protection**

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

**National Fire Protection Association (U.S.A.)**

- **Health**: 3
- **Flammability**: 0
- **Instability/Reactivity**: Special

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Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing : 5/4/2016
Date of issue/Date of revision : 5/4/2016
Date of previous issue : No previous validation
Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations

References : Not available.

Indicates information that has changed from previously issued version.

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.

Information contained within this SDS is only to be distributed as required by law.