# Section 1. Identification

<table>
<thead>
<tr>
<th>GHS product identifier</th>
<th>KOCHKLEEN® KLD III MEMBRANE CLEANER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other means of identification</td>
<td>Not available.</td>
</tr>
<tr>
<td>Product type</td>
<td>Liquid.</td>
</tr>
</tbody>
</table>

**Relevant identified uses of the substance or mixture and uses advised against**

- **Product use**: Specialty cleaners.
- **Area of application**: Industrial applications.

**Supplier/Manufacturer**: John R. Hess & Company, Inc.
400 Station Street
Cranston, RI
02910

**E-mail address of person responsible for this SDS**: custserv@jrhess.com

**Emergency telephone number (with hours of operation)**
- Emergency Number Chemtrec 1-800-424-9300
- John R Hess & Company phone number (information) 1-800-828-4377

# 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
- SKIN CORROSION - Category 1
- SERIOUS EYE DAMAGE - Category 1
- SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 10%

**GHS label elements**

**Hazard pictograms**: ![Hazard pictogram](image)

**Signal word**: Danger

**Hazard statements**: Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause respiratory irritation.

**Precautionary statements**

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Section 2. Hazards identification

Prevention : Wear protective gloves. Wear eye or face protection. Wear protective clothing. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response : IF INHALED: Remove victim to fresh air and keep at rest in a position 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 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.

Supplemental label elements

Hazards not otherwise classified : Do not taste or swallow. Wash thoroughly after handling.

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.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Other names</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>tetrasodium ethylenediaminetetraacetate</td>
<td>tetrasodium ethylenediaminetetraacetate</td>
<td>10-30</td>
<td>64-02-8</td>
</tr>
<tr>
<td>Nonylphenol, ethoxylated</td>
<td>Nonylphenol, ethoxylated</td>
<td>5-10</td>
<td>9016-45-9</td>
</tr>
<tr>
<td>Phosphoric acid, sodium salt, hydrate (1:3:12)</td>
<td>Phosphoric acid, sodium salt, hydrate (1:3:12)</td>
<td>1-5</td>
<td>10101-89-0</td>
</tr>
<tr>
<td>sodium hydroxide</td>
<td>sodium hydroxide</td>
<td>0.1-1</td>
<td>1310-73-2</td>
</tr>
<tr>
<td>trisodium nitrilotriacetate</td>
<td>trisodium nitrilotriacetate</td>
<td>0.1-1</td>
<td>5064-31-3</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 and hence require reporting in this section.

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.

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Section 4. First aid measures

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. Flush contaminated skin with plenty of 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. 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. Maintenance 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: May cause respiratory irritation.
Skin contact: Causes severe burns.
Ingestion: Harmful if swallowed. Corrosive to the digestive tract. Causes burns.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following:
- pain
- watering
- redness
Inhalation: Adverse symptoms may include the following:
- respiratory tract irritation
- coughing
Skin contact: Adverse symptoms may include the following:
- pain or irritation
- redness
- blistering may occur
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.

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Section 4. First aid measures

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 : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides
- phosphorus oxides
- metal oxide/oxides
- hydrogen sulfide
- Ammonia.

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. 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".

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).

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Section 6. Accidental release measures

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). 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. Keep away from acids. 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 between the following temperatures: 7 to 43°C (44.6 to 109.4°F). 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. Separate from acids. 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>
<tbody>
<tr>
<td>sodium hydroxide</td>
<td>ACGIH TLV (United States, 4/2014). C: 2 mg/m³</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL 1989 (United States, 3/1989). CEIL: 2 mg/m³</td>
</tr>
<tr>
<td></td>
<td>NIOSH REL (United States, 10/2013). CEIL: 2 mg/m³</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 2/2013). TWA: 2 mg/m³ 8 hours</td>
</tr>
</tbody>
</table>

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Section 8. Exposure controls/personal protection

**Appropriate engineering controls**
Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, 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. 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**
Use a properly fitted, air-purifying or air-fed 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. [Clear.]

**Color**
Yellow. [Light]

**Odor**
Mild.

**Odor threshold**
Not available.

**pH**
12.9

**Melting point**
Not available.

**Boiling point**
Not available.

**Flash point**
Closed cup: >93.333°C (>200°F)

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Section 9. Physical and chemical properties

Evaporation rate: Not available.
Flammability (solid, gas): Not applicable.
Lower and upper explosive (flammable) limits: Not available.
Vapor pressure: Not available.
Vapor density: Not available.
Relative density: 1.13 [at 20°C / 68°F]
Solubility: Easily soluble 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.
Decomposition temperature: Not available.
SADT: Not available.
Viscosity: 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.
Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid: Keep away from heat, sparks and flame.
Incompatible materials: Can react with certain metals, such as aluminum, to produce flammable hydrogen gas.
Reactive or incompatible with the following materials: acids
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>tetrasodium ethylene diamine tetraacetate</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>10 g/kg</td>
<td>-</td>
</tr>
<tr>
<td>Nonylphenol, ethoxylated</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>2000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Phosphoric acid, sodium salt, hydrate (1:3:12)</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1310 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>trisodium nitrilotriacetate</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>7400 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>1100 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

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## Section 11. Toxicological information

### 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>tetr sodi um ethylene diamine tetraacetate</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500</td>
<td></td>
</tr>
<tr>
<td>Nonylphenol, ethoxylated</td>
<td>Eyes - Severe irritant</td>
<td>Guinea</td>
<td>-</td>
<td>20 milligrams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Mouse</td>
<td>-</td>
<td>20 milligrams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>20 milligrams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
<td></td>
</tr>
<tr>
<td>sodium hydroxide</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>400 Micrograms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>1 Percent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>0.5 minutes 1 milligrams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500</td>
<td></td>
</tr>
</tbody>
</table>

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>trisodium nitrilotriacetate</td>
<td>-</td>
<td>2B</td>
<td>-</td>
</tr>
</tbody>
</table>

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### 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>tetr sodi um ethylene diamine tetraacetate</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

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Section 11. Toxicological information

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Causes serious eye damage.
Inhalation : May cause respiratory irritation.
Skin contact : Causes severe burns.
Ingestion : Harmful if swallowed. Corrosive to the digestive tract. Causes burns.

Symptoms related to the physical, chemical and toxicological characteristics

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

Inhalation : Adverse symptoms may include the following:
- respiratory tract irritation
- coughing

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

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 : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
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

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## Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>1478.6 mg/kg</td>
</tr>
<tr>
<td>Dermal</td>
<td>20000 mg/kg</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>tetrasodium ethylene diamine tetraacetate</td>
<td>Acute LC50 1030000 µg/l Fresh water</td>
<td>Fish - Lepomis macrochirus</td>
<td>96 hours</td>
</tr>
<tr>
<td>Nonylphenol, ethoxylated</td>
<td>Acute EC50 12 mg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1.23 mg/l Marine water</td>
<td>Crustaceans - Americamysis bahia</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 0.148 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1300 µg/l Fresh water</td>
<td>Fish - Lepomis macrochirus</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 8 mg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td>sodium hydroxide</td>
<td>Chronic NOEC 35 µg/l Fresh water</td>
<td>Fish - Oryzias latipes - Fry</td>
<td>100 days</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 40.38 mg/l Fresh water</td>
<td>Crustaceans - Ceriodaphnia dubia - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td>trisodium nitrilotriacetate</td>
<td>Acute LC50 125 ppm Fresh water</td>
<td>Fish - Gambusia affinis - Adult</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 185000 µg/l Fresh water</td>
<td>Algae - Navicula seminulum</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 560000 to 1000000 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 98000 µg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 100000 µg/l Fresh water</td>
<td>Algae - Algae - Exponential growth phase</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

### Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>tetrasodium ethylene diamine tetraacetate</td>
<td>302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>1 to 15 % - 14 days</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>302B Inherent Biodegradability: Zahn-Wellens/EMPA Test</td>
<td>99 % - 28 days</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>trisodium nitrilotriacetate</td>
<td>301F Ready Biodegradability - Manometric Respirometry Test</td>
<td>92 % - 28 days</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
**Section 12. Ecological information**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>tetrasodium ethylene diamine tetraacetate</td>
<td>-</td>
<td>-</td>
<td>Not readily</td>
</tr>
<tr>
<td>trisodium nitrilotriacetate</td>
<td>-</td>
<td>-</td>
<td>Readily</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>tetrasodium ethylene diamine tetraacetate</td>
<td>5.01</td>
<td>1.8</td>
<td>low</td>
</tr>
<tr>
<td>trisodium nitrilotriacetate</td>
<td>-2.62</td>
<td>-</td>
<td>low</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.

**Section 14. Transport information**

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN3267</td>
<td>UN3267</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Corrosive liquid, basic, organic, n.o.s. (tetrasodium ethylene diamine tetraacetate)</td>
<td>CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (tetrasodium ethylene diamine tetraacetate). Marine pollutant (Nonylphenol, ethoxylated)</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
<td>III</td>
</tr>
</tbody>
</table>

**Date of issue/Date of revision**: 05/30/2017

**Version**: 2  11/14

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Section 14. Transport information

<table>
<thead>
<tr>
<th>Environmental hazards</th>
<th>Yes.</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited quantity</td>
<td>Yes.</td>
<td></td>
</tr>
<tr>
<td>Packaging instruction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger aircraft</td>
<td>Quantity limitation: 5 L</td>
<td></td>
</tr>
<tr>
<td>Cargo aircraft</td>
<td>Quantity limitation: 60 L</td>
<td></td>
</tr>
<tr>
<td>Special provisions</td>
<td>IB3, T7, TP1, TP28</td>
<td></td>
</tr>
<tr>
<td>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</td>
<td></td>
<td>The environmentally hazardous substance mark may appear if required by other transportation regulations.</td>
</tr>
<tr>
<td>Emergency schedules (EmS)</td>
<td>F-A, S-B</td>
<td></td>
</tr>
<tr>
<td>Special provisions</td>
<td>223, 274</td>
<td></td>
</tr>
<tr>
<td>Passenger and Cargo Aircraft</td>
<td>Quantity limitation: 5 L</td>
<td>852</td>
</tr>
<tr>
<td>Cargo Aircraft Only</td>
<td>Quantity limitation: 60 L</td>
<td>856</td>
</tr>
<tr>
<td>Limited Quantities - Passenger Aircraft</td>
<td>Quantity limitation: 1 L</td>
<td>Y841</td>
</tr>
<tr>
<td>Special provisions</td>
<td>A3, A803</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>U.S. Federal regulations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA 8(a) PAIR</td>
<td>Nonylphenol, ethoxylated</td>
</tr>
<tr>
<td>United States inventory (TSCA 8b)</td>
<td>All components are listed or exempted.</td>
</tr>
<tr>
<td>Clean Water Act (CWA) 311</td>
<td>Phosphoric acid, sodium salt, hydrate (1:3:12); sodium hydroxide</td>
</tr>
<tr>
<td>Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)</td>
<td>Not listed</td>
</tr>
<tr>
<td>Clean Air Act Section 602 Class I Substances</td>
<td>Not listed</td>
</tr>
<tr>
<td>Clean Air Act Section 602 Class II Substances</td>
<td>Not listed</td>
</tr>
<tr>
<td>DEA List I Chemicals (Precursor Chemicals)</td>
<td>Not listed</td>
</tr>
<tr>
<td>DEA List II Chemicals (Essential Chemicals)</td>
<td>Not listed</td>
</tr>
<tr>
<td>SARA 302/304</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Composition/information on ingredients: No products were found.

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Version: 2 12/14
Section 15. Regulatory information

SARA 304 RQ : Not applicable.
SARA 311/312
Classification : Immediate (acute) 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>
<tbody>
<tr>
<td>Nonylphenol, ethoxylated</td>
<td>5-10</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td>Phosphoric acid, sodium salt, hydrate (1:3:12)</td>
<td>1-5</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td>sodium hydroxide</td>
<td>0.1-1</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
<tr>
<td>trisodium nitrilotriacetate</td>
<td>0.1-1</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

SARA 313
Not applicable.

State regulations
Massachusetts : The following components are listed: PHOSPHORIC ACID TRISODIUM SALT, DODECAHYDRATE
New York : The following components are listed: Sodium phosphate, tribasic
New Jersey : None of the components are listed.
Pennsylvania : The following components are listed: PHOSPHORIC ACID, TRISODIUM SALT, DODECAHYDRATE

California Prop. 65
None of the components are listed.

Section 16. Other information

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

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>*3</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

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 1 Instability/Reactivity

Date of issue/Date of revision : 05/30/2017
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Section 16. Other information

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History

Date of issue/Date of revision : 05/30/2017
Date of previous issue : 05/14/2015
Version : 2
Prepared by : HSE Department
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 : HCS (U.S.A.)- Hazard Communication Standard
            International transport regulations

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