SAFETY DATA SHEET

1. Identification

Product identifier: RemOx® L ISCO Reagent
Other means of identification: Not available.
Recommended use: Liquid oxidant recommended for applications that require a concentrated permanganate solution.
Recommended restrictions: Use in accordance with supplier's recommendations.

Manufacturer / Importer / Supplier / Distributor information

Manufacturer/Supplier: CARUS CORPORATION
Address: 315 Fifth Street,
Peru, IL 61354, USA
Telephone: 815 223-1500 - All other non-emergency inquiries about the product should be directed to the company
E-mail: salesmkt@caruscorporation.com
Website: www.caruscorporation.com
Contact person: Dr. Chithambarathunu Pillai
Emergency Telephone: For Hazardous Materials [or Dangerous Goods] Incidents ONLY
(spill, leak, fire, exposure or accident), call CHEMTREC at CHEMTREC®, USA: 001 (800) 424-9300
CHEMTREC®, Mexico (Toll-Free - must be dialed from within country): 01-800-681-9531
CHEMTREC®, Other countries: 001 (703) 527-3887

2. Hazard(s) identification

Physical hazards: Oxidizing liquids (Category 2)
Health hazards: Acute toxicity, oral (Category 4)
Skin corrosion/irritation (Category 1B)
Serious eye damage/eye irritation (Category 1)
Specific target organ toxicity, single exposure (Category 3 respiratory tract irritation)

OSHA defined hazards: Not classified.

Label elements:

Signal word: Danger
Hazard statement: May intensify fire; oxidizer. Harmful if swallowed. Causes severe skin burns and eye damage. May cause respiratory irritation.

Precautionary statement:
Prevention: Keep away from heat. Take any precaution to avoid mixing with combustibles. Keep/Store away from clothing/combustible materials. Use only outdoors or in a well-ventilated area. Do not breathe mist or vapor. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.
Response: In case of fire: Use water for extinction. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If swallowed: Rinse mouth. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing.
Storage: Store locked up. Store in a well-ventilated place. Keep container tightly closed.
Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC): Not classified.

Environmental hazards:
- Hazardous to the aquatic environment, acute hazard (Category 1)
- Hazardous to the aquatic environment, long-term hazard (Category 1)
Supplemental information

Hazard symbol

Hazard statement
Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention
Avoid release to the environment.

Response
Collect spillage.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium permanganate</td>
<td>10101-50-5</td>
<td>36 - 40</td>
</tr>
</tbody>
</table>

Composition comments
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation
If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Move to fresh air. For breathing difficulties, oxygen may be necessary. Call a physician or poison control center immediately. Get medical attention immediately. Call a physician if symptoms develop or persist. Get medical attention if symptoms persist.

Skin contact
Take off immediately all contaminated clothing. (Caution: Solution may ignite certain textiles). Immediately flush skin with plenty of water. Get medical attention immediately. Wash contaminated clothing before reuse.

Eye contact
Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyelids wide apart. Continue rinsing. Get medical attention immediately.

Ingestion
Immediately rinse mouth and drink plenty of water. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention immediately.

Most important symptoms/effects, acute and delayed
Contact with this material will cause burns to the skin, eyes and mucous membranes. Corrosive effects. Irritation of eyes and mucous membranes. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause temporary blindness and severe eye damage. Permanent eye damage including blindness could result. Show this safety data sheet to the doctor in attendance.

Indication of immediate medical attention and special treatment needed
Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Decomposition products are alkaline. Brown stain is insoluble manganese dioxide.

General information
In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. For personal protection, see Section 8 of the MSDS. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media
Flood with water from a distance, water spray or fog.

Unsuitable extinguishing media
The following extinguishing media are ineffective: Dry chemical. Foam. Carbon dioxide (CO2). Halogenated materials.

Specific hazards arising from the chemical
May intensify fire; oxidizer. May ignite combustibles (wood, paper, oil, clothing, etc.). Contact with incompatible materials or heat (135 °C / 275 °F) could result in violent exothermic chemical reaction. Oxidizing agent, may cause spontaneous ignition of combustible materials. By heating and fire, corrosive vapors/gases may be formed.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Move container from fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Dike fire control water for later disposal. Water runoff can cause environmental damage.

6. Accidental release measures

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

Keep unnecessary personnel away. Keep upwind. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of vapors and contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet. Local authorities should be advised if significant spillages cannot be contained.

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

Keep combustibles (wood, paper, oil, etc.) away from spilled material. Should not be released into the environment. This product is miscible in water.

Large Spills: Stop leak if possible without any risk. Dike the spilled material, where this is possible. Proceed with either of the following two options depending upon the size of the spill and the availability of the neutralizing agents:

**Option # 1:** Dilute to approximately 6% with water, and then reduce with sodium thiosulfate, a bisulfite or ferrous salt solution. The bisulfite or ferrous salt may require some dilute sulfuric acid (10% w/w) to promote reduction. Neutralize with sodium carbonate to neutral pH, if acid was used. Decant or filter and deposit sludge in approved landfill. Where permitted, the sludge may be drained into sewer with large quantities of water.

**Option # 2:** Absorb with inert media like diatomaceous earth or inert floor dry, collect into a drum and dispose of properly. Do not use saw dust or other incompatible media. Disposal of all materials shall be in full and strict compliance with all federal, state, and local regulations pertaining to permanganates.

To clean contaminated floors, flush with abundant quantities of water into sewer, if permitted by federal, state, and local regulations. If not, collect water and treat as described above. Cover with reducing agent (e.g. sodium bisulphite/thiosulphate or a ferrous salt plus 2M H2SO4). Transfer to container with water and neutralize with soda ash. Otherwise, absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Following product recovery, flush area with water. Prevent product from entering drains.

Small Spills: Cover with reducing agent (e.g. sodium bisulphite/thiosulphate or a ferrous salt plus 2M H2SO4). Transfer to container with water and neutralize with soda ash. Clean surface thoroughly to remove residual contamination.

Never return spills in original containers for re-use. Never return spills in original containers for re-use.

**Environmental precautions**

Do not allow to enter drains, sewers or watercourses. Contact local authorities in case of spillage to drain/aquatic environment.

7. Handling and storage

**Precautions for safe handling**

Take any precaution to avoid mixing with combustibles. Keep away from clothing and other combustible materials. Do not get this material in your eyes, on your skin, or on your clothing. Do not breathe mist or vapor. If clothing becomes contaminated, remove and wash off immediately. Spontaneous ignition may occur in contact with cloth or paper. When using, do not eat, drink or smoke. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site. Avoid release to the environment.

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

Store locked up. Keep container tightly closed and in a well-ventilated place. Store in a cool, dry place. Store away from incompatible materials (See Section 10). Follow applicable local/national/international recommendations on storage of oxidizers. Store in accordance with NFPA 430 requirements for Class II oxidizers.

8. Exposure controls/personal protection

**Occupational exposure limits**

No exposure limits noted for ingredient(s).

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium permanganate</td>
<td>Ceiling</td>
<td>5 mg/m³</td>
</tr>
<tr>
<td>(CAS 10101-50-5)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**US. ACGIH Threshold Limit Values**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium permanganate</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>Inhalable fraction.</td>
</tr>
<tr>
<td>(CAS 10101-50-5)</td>
<td></td>
<td>0.02 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>
US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium permanganate</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td>(CAS 10101-50-5)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

US NIOSH Pocket Guide to Chemical Hazards: Short Term Exposure Limit (STEL)

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium permanganate</td>
<td>STEL</td>
<td>3 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td>(CAS 10101-50-5)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Biological limit values**
No biological exposure limits noted for the ingredient(s).

**Exposure guidelines**
Follow standard monitoring procedures.

**Appropriate engineering controls**
Provide adequate general and local exhaust ventilation. An eye wash and safety shower must be available in the immediate work area.

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

- **Eye/face protection**
  Wear safety glasses with side shields (or goggles). Wear face shield if there is risk of splashes.

- **Skin protection**
  - **Hand protection**
    Wear chemical-resistant, impervious gloves. Use protective gloves made of: Rubber or plastic. Suitable gloves can be recommended by the glove supplier.
  - **Other**
    Wear appropriate chemical resistant clothing. Rubber or plastic apron.

- **Respiratory protection**
  In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.

- **Thermal hazards**
  Wear appropriate thermal protective clothing, when necessary.

- **General hygiene considerations**
  When using, do not eat, drink or smoke. Keep from contact with clothing and other combustible materials. Remove and wash contaminated clothing promptly. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and chemical properties**

- **Appearance**
  Dark purple liquid.

- **Physical state**
  Liquid.

- **Form**
  Aqueous solution.

- **Color**
  Dark purple.

- **Odor**
  Odorless.

- **Odor threshold**
  Not available.

- **pH**
  5 - 8

- **Melting point/freezing point**
  < 24.8 °F (< -4 °C)

- **Initial boiling point and boiling range**
  > 213.8 °F (> 101 °C)

- **Flash point**
  Does not flash.

- **Evaporation rate**
  As water.

- **Flammability (solid, gas)**
  Not applicable.

- **Upper/lower flammability or explosive limits**
  - **Flammability limit - lower (%)**
    Not applicable.
  - **Flammability limit - upper (%)**
    Not applicable.

- **Vapor pressure**
  760 mm Hg (105 °C)

- **Vapor density**
  Not available.

- **Relative density**
  1.37 - 1.4 (20 °C) (Water = 1)

- **Solubility(ies)**
  Miscible with water.

- **Partition coefficient (n-octanol/water)**
  Not available.

- **Auto-ignition temperature**
  Not available.

- **Decomposition temperature**
  Not available.

- **Viscosity**
  Not available.
Other information
Explosive properties Not explosive. Can explode in contact with sulfuric acid, peroxides and metal powders.
Oxidizing properties Strong oxidizing agent.

10. Stability and reactivity
Reactivity The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability Stable at normal conditions.
Possibility of hazardous reactions Contact with combustible material may cause fire. Can explode in contact with sulfuric acid, peroxides and metal powders.
Conditions to avoid Contact with incompatible materials or heat (135 °C / 275 °F) could result in violent exothermic chemical reaction.
Hazardous decomposition products By heating and fire, corrosive vapors/gases may be formed. Contact with hydrochloric acid liberates chlorine gas.

11. Toxicological information
Information on likely routes of exposure
Ingestion Causes digestive tract burns. Harmful if swallowed. Ingestion causes burns of the upper digestive and respiratory tracts.
Inhalation May cause irritation to the respiratory system.
Skin contact Causes severe skin burns.
Eye contact Causes serious eye damage.
Symptoms related to the physical, chemical and toxicological characteristics Contact with this material will cause burns to the skin, eyes and mucous membranes. Permanent eye damage including blindness could result.

Information on toxicological effects
Acute toxicity Causes severe skin burns and eye damage. Causes burns. Harmful if swallowed. Health injuries are not known or expected under normal use. Harmful if swallowed.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium permanganate (CAS 7722-64-7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>Rat</td>
<td>2000 mg/kg</td>
</tr>
<tr>
<td>Oral LD50</td>
<td>Rat</td>
<td>2000 mg/kg</td>
</tr>
</tbody>
</table>

Toxicity data are not available for sodium permanganate. Toxicity is expected to be similar to that of potassium permanganate.

Skin corrosion/irritation Causes severe skin burns.
Serious eye damage/eye irritation Causes serious eye damage.
Respiratory sensitization Not classified.
Skin sensitization Not classified.
Germ cell mutagenicity Not classified.
Carcinogenicity Not classified.
Reproductive toxicity Not classified.
Specific target organ toxicity - single exposure May cause irritation of respiratory tract.
Specific target organ toxicity - repeated exposure Not classified.
Aspiration hazard Not classified.
Further information Chronic effects are not expected when this product is used as intended. Prolonged exposure, usually over many years, to manganese oxide fume/dust can lead to chronic manganese poisoning, chiefly affecting the central nervous system.

12. Ecological information
Ecotoxicity Very toxic to aquatic life with long lasting effects.
Potassium permanganate (CAS 7722-64-7)

<table>
<thead>
<tr>
<th>Aquatic Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fish</td>
<td>LC50</td>
</tr>
<tr>
<td>Bluegill (Lepomis macrochirus)</td>
<td>2.7 mg/l, 96 hours, static</td>
</tr>
<tr>
<td></td>
<td>2.3 mg/l, 96 hours, flow through</td>
</tr>
<tr>
<td></td>
<td>2.3 mg/l, 96 hours</td>
</tr>
<tr>
<td></td>
<td>1.8 - 5.6 mg/l</td>
</tr>
<tr>
<td>Carp (Cyprinus carpio)</td>
<td>3.16 - 3.77 mg/l, 96 hours</td>
</tr>
<tr>
<td>Goldfish (Carassius auratus)</td>
<td>3.3 - 3.93 mg/l, 96 hours, static</td>
</tr>
<tr>
<td>Milkfish, salmon-herring (Chanos chanos)</td>
<td>3.16 - 3.77 mg/l, 96 hours</td>
</tr>
<tr>
<td>Rainbow trout (Oncorhynchus mykiss)</td>
<td>1.8 mg/l, 96 hours</td>
</tr>
<tr>
<td></td>
<td>1.08 - 1.38 mg/l, 96 hours</td>
</tr>
<tr>
<td></td>
<td>0.77 - 1.27 mg/l, 96 hours</td>
</tr>
<tr>
<td>Rainbow trout, donaldson trout (Oncorhynchus mykiss)</td>
<td>0.275 - 0.339 mg/l, 96 hours</td>
</tr>
</tbody>
</table>

Toxicity data are not available for sodium permanganate. Toxicity is expected to be similar to that of potassium permanganate.

**Persistence and degradability**
Expected to be readily converted by oxidizable materials to insoluble manganese oxide.

**Bioaccumulative potential**
Potential to bioaccumulate is low.

**Mobility in soil**
The product is miscible with water. May spread in water systems.

**Mobility in general**
The product is miscible with water. May spread in water systems.

**Other adverse effects**
None known.

### 13. Disposal considerations

**Disposal instructions**
Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations**
Rinse container at least three times to an absence of pink color before disposing.

**Hazardous waste code**
D001: Ignitable waste
The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products**
Do not allow this material to drain into sewers/water supplies. Dispose of in accordance with local regulations.

**Contaminated packaging**
Since emptied containers may retain product residue, follow label warnings even after container is emptied. Rinse container at least three times to an absence of pink color before disposing. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

**DOT**

- **UN number**: UN3214
- **UN proper shipping name**: Permanganates, inorganic, aqueous solution, n.o.s. (Sodium permanganate)
- **Transport hazard class(es)**: 5.1
- **Subsidiary class(es)**: -
- **Packing group**: II
- **Environmental hazards**: Marine pollutant: Yes
- **Special precautions for user**: Read safety instructions, SDS and emergency procedures before handling.
- **Special provisions**: 26, 353, IB2, T4, TP1
- **Packaging exceptions**: 152
- **Packaging non bulk**: 202
- **Packaging bulk**: 242

**IATA**

- **UN number**: UN3214
- **UN proper shipping name**: Permanganates, inorganic, aqueous solution, n.o.s. (Sodium permanganate)
- **Transport hazard class(es)**: 5.1
- **Subsidiary class(es)**: -
- **Packing group**: II
- **Environmental hazards**: Marine pollutant: Yes
- **Labels required**: 5.1
- **ERG Code**: 5L
Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number
UN3214

UN proper shipping name
PERMANGANATES, INORGANIC, AQUEOUS SOLUTION, N.O.S. (Sodium permanganate)

Transport hazard class(es)
5.1

Subsidiary class(es)
-

Packaging group
II

Environmental hazards
Marine pollutant
Yes

Labels required
5.1

EmS
F-H, S-Q

Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
This substance/mixture is not intended to be transported in bulk.

15. Regulatory information

US federal regulations
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA Inventory List.

CERCLA/SARA Hazardous Substances - Not applicable.

Drug Enforcement Administration (DEA) (21 CFR 1310.02 (b) 8: List II chemical.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)
Sodium permanganate (CAS 10101-50-5) LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
No

SARA 311/312 Hazardous chemical
Yes

SARA 313 (TRI reporting)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium permanganate</td>
<td>10101-50-5</td>
<td>36 - 40</td>
</tr>
<tr>
<td>Potassium permanganate</td>
<td>7722-64-7</td>
<td>2</td>
</tr>
</tbody>
</table>

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Sodium permanganate (CAS 10101-50-5)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number
Sodium permanganate (CAS 10101-50-5) 6588

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))
Sodium permanganate (CAS 10101-50-5) 15 % wt

DEA Exempt Chemical Mixtures Code Number
Sodium permanganate (CAS 10101-50-5) 6588

Food and Drug Administration (FDA)
Not regulated.
US state regulations
This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List
Not regulated.

US. New Jersey Worker and Community Right-to-Know Act
Sodium permanganate (CAS 10101-50-5) 500 lbs

US. Pennsylvania RTK - Hazardous Substances
Not regulated.

US. Rhode Island RTK
Sodium permanganate (CAS 10101-50-5)

US. California Proposition 65
US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Not listed.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>No</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 27-November-2013
Revision date -
Version # 01

NFPA Ratings

References
HSDB® - Hazardous Substances Data Bank
Registry of Toxic Effects of Chemical Substances (RTECS)
EPA: AQUIRE database
NLM: Hazardous Substances Data Base
US. IARC Monographs on Occupational Exposures to Chemical Agents
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
Disclaimer

This safety data sheet was prepared in accordance with the Safety Data Sheet for Chemical Products (JIS Z 7250:2005). The information contained herein is accurate to the best of our knowledge. However, data, safety standards and government regulations are subject to change and, therefore, holders and users should satisfy themselves that they are aware of all current data and regulations relevant to their particular use of product. CARUS CORPORATION DISCLAIMS ALL LIABILITY FOR RELIANCE ON THE COMPLETENESS OR ACCURACY OR THE INFORMATION INCLUDED HEREIN. CARUS CORPORATION MAKES NO WARRANTY, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR USE OR PURPOSE OF THE PRODUCT DESCRIBED HEREIN. All conditions relating to storage, handling, and use of the product are beyond the control of Carus Corporation, and shall be the sole responsibility of the holder or user of the product.

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