SAFETY DATA SHEET

PHENOLPHTHALEIN INDICATOR SOLUTION

1. Product and Company Identification

Material name: PHENOLPHTHALEIN INDICATOR SOLUTION
Version #: 2.0
Revision date: Jan-05-2016
Supersedes date: Jan-23-2013
Prepared by: This SDS has been prepared by GE Water & Process Technologies Regulatory Department (1-215-355-3300).

CAS #: Mixture
L code: L212
Product application: Field test reagent.

Company/undertaking identification
GE Water & Process Technologies Canada
3239 Dundas Street West
Oakville, Ontario, L6M 4B2
T 905-465-3030

Emergency telephone
(800) 877-1940

2. Hazards Identification

Emergency overview
May cause slight irritation to the skin. May cause dermatitis. May cause moderate irritation to the eyes. Vapors, gases, mists or aerosols may cause irritation to the upper respiratory tract. Prolonged exposure may cause dizziness and headache.

Potential health effects

Eyes
Primary route of exposure May cause slight irritation to the skin. May cause dermatitis.

Skin
Primary route of exposure Vapors, gases, mists or aerosols may cause irritation to the upper respiratory tract. Prolonged exposure may cause dizziness and headache.

Inhalation
May cause gastrointestinal irritation with possible nausea, vomiting, headache, dizziness, unconsciousness, and injury to the kidneys and liver.

Ingestion
Prolonged or repeated exposures may cause CNS depression and/or defatting-type dermatitis. Prolonged or repeated exposure may cause toxicity to the kidney and/or nervous system.

Target organs
Excessive dermal exposure causes defatting or drying of skin. Excessive inhalation of vapors causes dizziness, headache and nausea.

Signs and symptoms
None known.

Medical conditions aggravated by exposure

3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS #</th>
<th>Percent (wt/wt)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>40 - 70</td>
</tr>
<tr>
<td>phenolphthalein</td>
<td>77-09-8</td>
<td>0.1 - 1</td>
</tr>
</tbody>
</table>
Information for specific product ingredients as required by the WHMIS Regulations is listed. Refer to additional sections of this MSDS for our assessment of the potential hazards of this formulation.

4. First Aid Measures

First aid procedures

**Inhalation**
Move to fresh air. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary. Get medical attention immediately.

**Skin contact**
Wash off with soap and water. Take off contaminated clothing and wash before reuse. Get medical attention if irritation develops and persists.

**Eye contact**
Immediately flush eyes with plenty of low-pressure water for at least 30 minutes while removing contact lenses. Keep eyelids apart. Get medical attention immediately.

**Ingestion**
If swallowed, rinse mouth with water (only if the person is conscious). Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting. Call a physician immediately. Dilute contents of stomach using 2-8 fluid ounces (60-240ml) of milk or water.

Notes to physician
No specific antidotes are recommended.

5. Fire Fighting Measures

**Extinguishing media**

**Suitable extinguishing media**
dry chemical, carbon dioxide or foam. Water spray should be used only to cool fire-exposed containers and disperse vapours.

**Unsuitable extinguishing media**
Not available.

**Protective equipment for firefighters**
Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

**Fire fighting equipment/instructions**
In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Cool containers / tanks with water spray. Fire fighters should wear positive pressure self-contained breathing apparatus (full face-piece type).

6. Accidental Release Measures

**Personal precautions**
Wear appropriate protective equipment and clothing during clean-up. Avoid contact with spilled material. See Section 8 of the MSDS for Personal Protective Equipment.

**Environmental precautions**
Avoid discharge into drains, water courses or onto the ground. Water contaminated with this product may be sent to a sanitary sewer treatment facility, or a permitted waste treatment facility, in accordance with any local agreements.

**Methods for cleaning up**
Ventilate area, use specified protective equipment. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Remove sources of ignition. Flush with plenty of water. Spread sand/grit.

7. Handling and Storage

**Handling**
Flammable. Store in explosive proof area where electrical equipment meets NFPA code.

**Storage**
Store containers closed when not in use. Keep away from heat, sparks and open flame. Earth containers during filling or discharge when performed at temperatures at or above product flash point.

8. Exposure Controls / Personal Protection

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol (CAS 64-17-5)</td>
<td>STEL</td>
<td>1000 ppm</td>
</tr>
<tr>
<td><strong>Canada. Alberta OELs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Components</td>
<td>Type</td>
<td>Value</td>
</tr>
<tr>
<td>Ethanol (CAS 64-17-5)</td>
<td>TWA</td>
<td>1880 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1000 ppm</td>
</tr>
</tbody>
</table>
### 9. Physical & Chemical Properties

**Appearance**
- **Physical state**: Liquid
- **Color**: Colorless
- **Odor**: Alcohol

**Chemical properties**
- **pH (concentrated product)**: 5.6
- **Vapor density**: 4.6 (Air = 1)
- **Boiling point**: 399 °F (204 °C)
- **Melting point/Freezing point**: Not available.
- **Solubility (water)**: Not available.
- **Specific gravity (70°F, 21°C)**: 0.93
- **Flash point**: 253 °F (123 °C) OPEN CUP

**Flammability**
- **Flammability limits in air, upper, % by volume**: Not available.
- **Flammability limits in air, lower, % by volume**: Not available.

**Evaporation rate**: < 1 (Ether = 1)

**Viscosity temperature**: 70 °F (21 °C)

### 10. Chemical Stability & Reactivity Information

**Reactivity**
The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability**
Material is stable under normal conditions.

**Conditions to avoid**
Not available.

**Incompatible materials**
Friction, heat or other sources of ignition may cause a violent reaction releasing heat and toxic fumes. Contact with oxidizers may cause fire or explosion.
11. Toxicological Information

Toxicological data

<table>
<thead>
<tr>
<th>Product Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHENOLPHTHALEIN INDICATOR SOLUTION (CAS Mixture)</td>
<td></td>
</tr>
<tr>
<td>Acute Dermal LD50 Rabbit</td>
<td>&gt; 5000 mg/kg, (Calculated according to GHS additivity formula)</td>
</tr>
<tr>
<td>Inhalation LC50 Rat</td>
<td>&gt; 20 mg/l, 4 Hours, (Calculated according to GHS additivity formula)</td>
</tr>
<tr>
<td>Oral LD50 Rat</td>
<td>&gt; 5000 mg/kg, (Calculated according to GHS additivity formula)</td>
</tr>
</tbody>
</table>

Components

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<thead>
<tr>
<th>Ethanol (CAS 64-17-5)</th>
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</table>

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

phenolphthalein (CAS 77-09-8) 2B Possibly carcinogenic to humans.

Mutagenicity Not available.

Reproductive effects Not available.

Teratogenicity Not available.

12. Ecological Information

Ecotoxicity No ecotoxicity data noted for the ingredient(s).

Partition coefficient

<table>
<thead>
<tr>
<th>Substance</th>
<th>Partition Coefficient</th>
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<tbody>
<tr>
<td>Ethanol</td>
<td>0.31</td>
</tr>
<tr>
<td>phenolphthalein</td>
<td>2.41</td>
</tr>
</tbody>
</table>

13. Disposal Considerations

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

Waste from residues / unused products Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

TDG

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN proper shipping name</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1987</td>
<td>ALCOHOLS, N.O.S. (ETHANOL, METHANOL)</td>
</tr>
</tbody>
</table>

Environmental hazards Not available.
### DOT

<table>
<thead>
<tr>
<th>UN number</th>
<th>UN1987</th>
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<tbody>
<tr>
<td>UN proper shipping name</td>
<td>ALCOHOLS, N.O.S. (ETHANOL RQ = 200 LBS, METHANOL)</td>
</tr>
<tr>
<td>Transport hazard classes</td>
<td>3</td>
</tr>
<tr>
<td>Class</td>
<td>III</td>
</tr>
<tr>
<td>Packing group</td>
<td>128</td>
</tr>
<tr>
<td>ERG number</td>
<td>Some containers may be exempt from Dangerous Goods/Hazmat Transport Regulations, please check BOL for exact container classification.</td>
</tr>
</tbody>
</table>

### IMDG

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</tr>
<tr>
<td>Transport hazard classes</td>
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</tr>
<tr>
<td>Class</td>
<td>III</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>No.</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Not available.</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Not available.</td>
</tr>
<tr>
<td>EmS</td>
<td>Not available.</td>
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<tr>
<td>Special precautions for user</td>
<td>Not available.</td>
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</tbody>
</table>

### IATA

<table>
<thead>
<tr>
<th>UN number</th>
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<tr>
<td>UN proper shipping name</td>
<td>ALCOHOLS, N.O.S. (ETHANOL, METHANOL)</td>
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<tr>
<td>Transport hazard classes</td>
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<td>No.</td>
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<tr>
<td>Environmental hazards</td>
<td>Not available.</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### 15. Regulatory Information

**WHMIS status**
- Controlled

**WHMIS classification**
- B2 - Flammable Liquids
- D2A - Other Toxic Effects-VERY TOXIC
- D2B - Other Toxic Effects-TOXIC
WHMIS labeling

Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</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 that all components of this product comply 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

List of abbreviations

- CAS: Chemical Abstract Service Registration Number
- TSRN: Trade Secret Registry Number
- ACGIH: American Conference of Governmental Industrial Hygienists
- TWA: Time Weighted Average
- STEL: Short Term Exposure Limit
- LD50: Lethal Dose, 50%
- LC50: Lethal Concentration, 50%
- NOEL: No Observed Effect Level
- COD: Chemical Oxygen Demand
- BOD: Biochemical Oxygen Demand
- TOC: Total Organic Carbon
- IATA: International Air Transport Association
- IMDG: International Maritime Dangerous Goods Code

HMIS® ratings

- Health: 1
- Physical hazard: 0
- Personal protection: B

NFPA ratings

- Health: 2
- Flammability: 3
- Instability: 0

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

This data sheet contains changes from the previous version in section(s):

- Product and Company Identification: Physical States
- Physical & Chemical Properties: Multiple Properties
- Toxicological Information: Toxicological Data
- HazReg Data: North America
- GHS: Classification