Material Safety Data Sheet
FOR INDUSTRIAL USE ONLY
Cascophen(TM) LT-5210Q

1. Product and company identification

<table>
<thead>
<tr>
<th>Product name</th>
<th>Cascophen(TM) LT-5210Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSDS Number</td>
<td>000000104568</td>
</tr>
<tr>
<td>Material uses</td>
<td>Wood Adhesives, Composites, Laminates or Related Board Products</td>
</tr>
<tr>
<td>Product type</td>
<td>Phenol Resorcinol Formaldehyde Resin</td>
</tr>
<tr>
<td>Validation date</td>
<td>01/19/2015</td>
</tr>
<tr>
<td>Print date</td>
<td>07/08/2015</td>
</tr>
</tbody>
</table>
| Manufacturer/Supplier/Impor
ter | Hexion Canada, Inc. 180 East Broad Street
                                      Columbus, Ohio 43215 USA                                                             |

Contact person : 4information@hexion.com

Telephone : For additional health and safety or regulatory information, call 1 888 443 9466.

Emergency telephone number : For Emergency Medical Assistance
Call Health & Safety Information Services 1-866-303-6949
For Emergency Transportation Information CHEMTREC US Domestic (800) 424-9300
CHEMTREC International (703) 527-3887
CANUTEC CA Domestic (613) 996-6666

Part of the CASCO® Brand of Adhesives and Resins from Hexion Inc.

2. Hazards identification

Emergency overview

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Clear, reddish-brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight alcoholic</td>
</tr>
</tbody>
</table>

Signal word : WARNING!

Hazard statements : COMBUSTIBLE LIQUID AND VAPOR. MAY FORM EXPLOSIVE MIXTURES WITH AIR. INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS AND NAUSEA AND MAY LEAD TO UNCONSCIOUSNESS. CAUSES EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE
Precautionary measures: Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not breathe vapor or mist. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep away from heat and flame. Keep container tightly closed. Use personal protective equipment as required. Wash thoroughly after handling.

Potential acute health effects:

**Inhalation**
Can cause central nervous system (CNS) depression. Slightly irritating to the respiratory system.

**Ingestion**
Can cause central nervous system (CNS) depression.

**Skin**
Slightly irritating to the skin.

**Eyes**
Severely irritating to eyes. Risk of serious damage to eyes.

Potential chronic health effects:

**Chronic effects**
Contains material that can cause target organ damage. Signs and symptoms of chronic phenol poisoning may include vomiting, difficulty in swallowing, diarrhea, lack of appetite, jaundice, fatigue, bleeding or easy bruising and sometimes pain and swelling in the upper right abdomen, changes in urine output or dark urine, pain upon urination or in the lower back, or general edema. Can also cause cardiac damage evidenced by shortness of breath and in severe cases cardiac arrest. Preexisting medical conditions of the heart, kidney, liver, lung, eyes and skin may be aggravated by exposure.

**Carcinogenicity**
Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

**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.

**Target organs**
Contains material which causes damage to the following organs:
- blood
- kidneys
- lungs
- the nervous system
- liver
- heart
- spleen
- gastrointestinal tract
- cardiovascular system
- upper respiratory tract
- immune system
- skin
- central nervous system (CNS)
- eye, lens or cornea
- pancreas
- thyroid

Over-exposure signs/symptoms:

**Inhalation**
Adverse symptoms may include the following:
- nausea or vomiting
respiratory tract irritation
coughing
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Ingestion  : No specific data.
Skin  : Adverse symptoms may include the following:
irritation
redness

Eyes  : Adverse symptoms may include the following:
pain or irritation
watering
redness

Medical conditions aggravated by over-exposure  : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (Section 11)

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>% by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resorcinol</td>
<td>108-46-3</td>
<td>&gt;=5 - &lt;10</td>
</tr>
<tr>
<td>Phenol</td>
<td>108-95-2</td>
<td>&gt;=5 - &lt;10</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>1310-73-2</td>
<td>&gt;=1 - &lt;5</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>&gt;=1 - &lt;5</td>
</tr>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>&gt;=0.1 - &lt;1</td>
</tr>
<tr>
<td>Ethyl Acetate</td>
<td>141-78-6</td>
<td>&gt;=0.1 - &lt;1</td>
</tr>
</tbody>
</table>

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.

4. First aid measures

Eye contact  : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact  : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation  : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion  : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first aid personnel  : 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.

Notes to physician

: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product

: Combustible liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

Extinguishing media

Suitable

: Use dry chemical, CO2, water spray (fog) or foam.

Not suitable

: Do not use water jet.

Special exposure hazards

: 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Hazardous thermal decomposition products

: Decomposition products may include the following materials:

- carbon dioxide
- carbon monoxide
- metal oxide/oxides

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.

6. Accidental release measures

Personal precautions

: 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8 of SDS).

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 for 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. Use spark-proof tools and explosion-proof equipment. 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 of SDS). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 of SDS for
emergency contact information and section 13 of SDS for waste disposal.

## 7. Handling and storage

**Handling**  
Put on appropriate personal protective equipment (see section 8 of SDS). 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. Avoid exposure - obtain special instructions before use. 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. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Follow US NFPA 30, "Flammable & Combustible Liquids Code", or other national, state and local codes on safe handling of flammable liquids. Train workers in the recognition and prevention of hazards associated with the storage, handling and transfer of flammable liquids in the plant. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Storage**  
Store in an area designated for storage of flammable liquids (See NFPA 30 and OSHA 29 CFR 1910.106). Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10 of SDS) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. 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.

## 8. Exposure controls/personal protection

### Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resorcinol</td>
<td><strong>ACGIH TLV (1996-05-18)</strong> Time Weighted Average (TWA) 45 mg/m³ , 10 ppm</td>
</tr>
<tr>
<td></td>
<td><strong>ACGIH TLV (1996-05-18)</strong> Short Term Exposure Limit (STEL) 90 mg/m³ , 20 ppm</td>
</tr>
<tr>
<td>Phenol</td>
<td><strong>ACGIH TLV (1996-05-18)</strong> Time Weighted Average (TWA) 19 mg/m³ , 5 ppm</td>
</tr>
<tr>
<td></td>
<td><strong>OSHA PEL (1993-06-30)</strong> Time Weighted Average (TWA) 19 mg/m³ , 5 ppm</td>
</tr>
<tr>
<td>Substance</td>
<td>ACGIH TLV (1994-09-01) Time Weighted Average (TWA)</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Sodium Hydroxide</td>
<td>Ceiling 2 mg/m³</td>
</tr>
<tr>
<td>Ethanol</td>
<td>ACGIH TLV (2008-01-01) Pollutant concentration that should not be exceeded during working hours and which workers are believed to be exposed during a period of 15 minutes maximum, without experiencing: a) irritation. b) chronic or irreversible tissue damage. c) dependent toxic effects of exposure rate. d) Narcosis of sufficient magnitude to increase susceptibility to accidents. e) The reduction of ability to get to safety by their own means. 1,880 mg/m³ , 1,000 ppm</td>
</tr>
<tr>
<td>Methanol</td>
<td>ACGIH TLV (1994-09-01) Time Weighted Average (TWA) 262 mg/m³ , 200 ppm</td>
</tr>
<tr>
<td>Ethyl Acetate</td>
<td>ACGIH TLV (1996-05-18) Time Weighted Average (TWA) 1,440 mg/m³ , 400 ppm</td>
</tr>
</tbody>
</table>

Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures**: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**Engineering measures**: 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. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**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.

**Personal protection**

**Respiratory**

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.

**Hands**

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.

**Eyes**

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 or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

**Skin**

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.

**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.

### 9. Physical and chemical properties

#### 9.1 Information on basic physical and chemical properties

**Appearance**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Clear, reddish-brown</td>
</tr>
<tr>
<td>Odor</td>
<td>Slight alcoholic</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>9.8 - 10.2</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>0 °C</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>102 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>Pensky-Martens Closed Cup: 65 °C (ASTM D 93)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>0.6 ((n-Butyl acetate=1))</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
</tbody>
</table>
Burning time : Not available
Burning rate : Not available
Upper/lower flammability or explosive limits:
  Lower: Not available
  Upper: Not available
Vapor pressure : 55 mm Hg @ 25 °C
Vapor density : Not available
Relative density : 1.1751
Solubility(ies): Not available
Solubility in water: Slightly
Partition coefficient: n-octanol/water: Not available
Auto-ignition temperature: Not available
Decomposition temperature: Not available
Viscosity:
  Dynamic: 1,450 - 1,650 cPs
  Kinematic: Not available

9.2 Other information
No additional information.

10. Stability and reactivity

Reactivity : Stable under normal conditions.
Chemical stability : The product is stable.
Conditions to avoid:
  Avoid all possible sources of ignition (spark or flame).
  Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials : Reactive or incompatible with the following materials:
  oxidizing materials
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

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>Resorcinol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>301 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>202 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>3,360 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Phenol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>317 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation</td>
<td>Rat</td>
<td>0.316 mg/l</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>630 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Ethanol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LD50 Oral Rat 7,000 mg/kg -
LC50 Inhalation Rat 125 mg/l 4 h

Methanol

LD50 Oral Rat 5,628 mg/kg -

Ethyl Acetate

LD50 Oral Rat 5,620 mg/kg -
LC50 Inhalation Rat > 6000 ppm 6 h
LC50 Inhalation Rat 33.5 mg/l 2 h
LD50 Dermal Rabbit > 18,000 mg/kg -

Cascophen(TM) LT-5210Q

LD50 Oral Rat > 2,001 mg/kg -
LC50 Inhalation Rat > 21 mg/l > 2501 ppm 4 h
LD50 Dermal Rabbit > 2,001 mg/kg -

Conclusion/Summary : Not available

Chronic toxicity

Conclusion/Summary : Not available

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>Resorcinol</td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td></td>
<td>24 hrs</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Severe irritant</td>
<td>Rabbit</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>eyes - Severe irritant</td>
<td>Rabbit</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Phenol</td>
<td>Skin -</td>
<td>Rat</td>
<td>&gt; 4</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>eyes - Cornea opacity</td>
<td>Rabbit</td>
<td>&gt; 3</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Ethanol</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Moderate irritant</td>
<td>Rabbit</td>
<td></td>
<td>24 hrs</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>eyes - Severe irritant</td>
<td>Rabbit</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>eyes - Mild irritant</td>
<td>Rabbit</td>
<td></td>
<td>24 hrs</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>eyes - Moderate irritant</td>
<td>Rabbit</td>
<td></td>
<td>0.001 hrs</td>
<td>-</td>
</tr>
</tbody>
</table>

Conclusion/Summary

Skin : 16 CFR Part 1500.41 Rabbit Slight Skin Irritant
Eyes : 16 CFR Part 1500.42 Rabbit Severe Eye Irritant
Respiratory : Not available
Sensitization

Conclusion/Summary

Skin: Not available
Respiratory: Not available

Carcinogenicity

Conclusion/Summary: Not available

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>EPA</th>
<th>NIOSH</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resorcinol</td>
<td>A4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phenol</td>
<td>A4</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethanol</td>
<td>A3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethyl Acetate</td>
<td>A4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mutagenicity

Conclusion/Summary: Not available

Teratogenicity

Conclusion/Summary: Not available

Reproductive toxicity

Conclusion/Summary: Not available

SECTION 12: Ecological information

12.1 Toxicity

Ecotoxicity: No known significant effects or critical hazards.

Aquatic ecotoxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resorcinol</td>
<td>Acute LC50 &gt; 100 mg/l Fresh water</td>
<td>Fish - Rainbow trout, donaldson trout</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 40,000 µg/l Fresh water</td>
<td>Fish - Fathead minnow</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 100,000 µg/l Fresh water</td>
<td>Aquatic invertebrates. Water flea</td>
<td>48 h</td>
</tr>
<tr>
<td>Phenol</td>
<td>Acute LC50 8.9 mg/l Fresh water</td>
<td>Fish - Rainbow trout, donaldson trout</td>
<td>96 h</td>
</tr>
<tr>
<td></td>
<td>Acute NOEC 0.077 mg/l Fresh water</td>
<td>Fish - Carp</td>
<td>60 d</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 3.1 mg/l Fresh water</td>
<td>Aquatic invertebrates. Water flea</td>
<td>48 h</td>
</tr>
<tr>
<td></td>
<td>Acute NOEC 0.16 mg/l Fresh water</td>
<td>Aquatic invertebrates. Water flea</td>
<td>16 d</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 61.1 mg/l Fresh water</td>
<td>Aquatic plants -</td>
<td>96 h</td>
</tr>
</tbody>
</table>
Microalgae

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>EC50 / LC50</th>
<th>Test Organism</th>
<th>Contact Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute EC50</td>
<td>21 mg/l</td>
<td>Fresh water</td>
<td>24 h</td>
</tr>
<tr>
<td>Chronic NOEC</td>
<td>2.2 mg/l</td>
<td>Fresh water</td>
<td>2 d</td>
</tr>
</tbody>
</table>

Ethanol

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>LC50 / EC50</th>
<th>Test Organism</th>
<th>Contact Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute LC50</td>
<td>42,000 µg/l</td>
<td>Fish - Rainbow trout/donaldson trout</td>
<td>96 h</td>
</tr>
<tr>
<td>Acute EC50</td>
<td>2,000 µg/l</td>
<td>Water flea</td>
<td>48 h</td>
</tr>
<tr>
<td>Acute LC50</td>
<td>100 mg/l</td>
<td>Aquatic invertebrates.</td>
<td>96 h</td>
</tr>
<tr>
<td>Chronic NOEC</td>
<td>0.375 mg/l</td>
<td>Aquatic plants - Green Flagellate</td>
<td>84 d</td>
</tr>
<tr>
<td>Chronic No observable effect concentration &lt; 6,300 mg/l</td>
<td>Aquatic invertebrates.</td>
<td>48 h</td>
<td></td>
</tr>
</tbody>
</table>

Methanol

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>EC50</th>
<th>Test Organism</th>
<th>Contact Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute EC50</td>
<td>13,000 mg/l</td>
<td>Fish - Rainbow trout/donaldson trout</td>
<td>4 d</td>
</tr>
</tbody>
</table>

Ethyl Acetate

<table>
<thead>
<tr>
<th>Test Endpoint</th>
<th>LC50</th>
<th>Test Organism</th>
<th>Contact Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute LC50</td>
<td>230 mg/l</td>
<td>Fish - Fathead minnow</td>
<td>96 h</td>
</tr>
</tbody>
</table>

Conclusion/Summary

12.2 Persistence and degradability

Conclusion/Summary : Not available

Partition coefficient: n-octanol/water : Not available

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

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. 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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSOAL PROTECTION for additional handling information and protection of employees.

14. Transport information

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

### International transport regulations

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN/NA number</th>
<th>Proper shipping name</th>
<th>Classes/*PG</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFR</td>
<td>1993</td>
<td>COMBUSTIBLE LIQUID, N.O.S. (Ethanol, Phenol)</td>
<td>Class CBL III</td>
<td>Phenol, Sodium Hydroxide</td>
</tr>
<tr>
<td>TDG</td>
<td></td>
<td></td>
<td></td>
<td>Non-regulated</td>
</tr>
<tr>
<td>IMO/IMDG</td>
<td></td>
<td></td>
<td></td>
<td>Non-regulated</td>
</tr>
<tr>
<td>IATA (Cargo)</td>
<td></td>
<td></td>
<td></td>
<td>Non-regulated</td>
</tr>
</tbody>
</table>

*PG : Packing group

15. Regulatory information

**United States**

**HCS Classification**

- Combustible liquid
- Irritating material
- Carcinogen
- Target organ effects

**U.S. Federal regulations**

- **United States - TSCA 12(b) - Chemical export notification:** None required.
- **United States - TSCA 5(a)2 - Final significant new use rules:** Not listed
- **United States - TSCA 5(a)2 - Proposed significant new use rules:** Listed 3(2H)-Isothiazolone, 5-chloro-2-methyl- 3(2H)-Isothiazolone, 2-methyl-
- **United States - TSCA 5(e) - Substances consent order:** Not listed
- **SARA 311/312 MSDS distribution - chemical inventory - hazard identification:** Immediate (acute) health hazard, Fire hazard, Delayed (chronic) health hazard

**SARA 302/304**
Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>EHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>Yes.</td>
</tr>
</tbody>
</table>
SARA 313

<table>
<thead>
<tr>
<th>Form R - Reporting requirements</th>
<th>Product name</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier notification</td>
<td>Phenol</td>
<td>108-95-2</td>
</tr>
</tbody>
</table>

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

United States inventory (TSCA 8b) : All components are listed or exempted.

Canada

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
                  Class D-2A: Material causing other toxic effects (Very toxic).
                  Class D-2B: Material causing other toxic effects (Toxic).
                  Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
                  Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
                  Class D-2A: Material causing other toxic effects (Very toxic).
                  Class D-2B: Material causing other toxic effects (Toxic).
                  Class E: Corrosive material

Canadian lists

Canadian NPRI : The following components are listed: Phenol Ethanol

CEPA Toxic substances : None required.

Canada inventory : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

International lists : Australia inventory (AICS): Not determined.
                      Japan inventory: Not determined.
                      China inventory (IECSC): Not determined.
                      Korea inventory: Not determined.
                      New Zealand Inventory (NZIoC): Not determined.
                      Philippines inventory (PICCS): Not determined.
                      United States inventory (TSCA 8b): All components are listed or exempted.
                      Taiwan inventory (CSNN): Not determined.

16. Other information

Label requirements : COMBUSTIBLE LIQUID AND VAPOR. MAY FORM EXPLOSIVE MIXTURES WITH AIR. INHALATION CAUSES HEADACHES, DIZZINESS, DROWSINESS AND NAUSEA AND MAY LEAD TO
UNCONSCIOUSNESS. CAUSES EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER.

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

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>*</td>
</tr>
<tr>
<td>Flammability</td>
<td>2</td>
</tr>
<tr>
<td>Physical hazards</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 MSDSs 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.

Other special considerations : Part of the CASCO® Brand of Adhesives and Resins from Hexion Inc.

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Version : 9.1
Prepared by : Product Safety Stewardship

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