SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label
: **Heatsavr™**

Product Code(s)
: HS480, HS560, HS140

Recommended use of the chemical and restrictions on use
: Liquid swimming pool cover, that when added to your pool, creates a liquid barrier between the water and the air for reducing the rate of evaporation. No restrictions on use known.

Chemical family
: Mixture of: Alcohols; Water

Name, address, and telephone number of the supplier:
**Flexible Solutions International**
#206 - 920 Hillside Avenue
Victoria, B.C., Canada
V8T 1Z8
[(250) 477-9969](tel:2504779969); [(800) 661-3560](tel:8006613560) (Toll Free)
(Monday to Friday, 8 am to 4 pm, Pacific Time)

24 Hr. Emergency Tel #
: [(613) 996-6666](tel:6139966666) (CANUTEC)

Name, address, and telephone number of the manufacturer:
Refer to supplier

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical
Light blue liquid. Solvent/alcohol odor.

Most important hazards:
Highly flammable liquid and vapor. This material may be ignited by heat, sparks and direct flame. Vapors are heavier than air and may spread along floors.
Causes eye irritation. Inhalation may cause central nervous system depression. Occupational exposure to the substance or mixture may cause adverse effects. For further information, please refer to section 11 of the SDS.

This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Hazardous classification:
- Flammable liquid - Category 2
- Eye damage/irritation - Category 2B
- Specific target organ toxicity, single exposure - Category 3 (Narcotic effects)

Label elements

Hazard pictogram(s)

| ![Flammable](image) | ![Eye](image) |

Signal Word
DANGER!

Hazard statement(s)
- Highly flammable liquid and vapor.
- Causes eye irritation.
- May cause drowsiness or dizziness.
SAFETY DATA SHEET

Precautionary statement(s)

Keep away from heat, sparks and open flame. - No smoking.
Keep container tightly closed.
Ground/Bond container and receiving equipment.
Use explosion-proof electrical and ventilating equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing vapors.
Wash hands and face thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves and eye/face protection.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

In case of fire, use dry chemical, CO2, or alcohol foam to extinguish.

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Dispose of contents/container in accordance with local regulation.

Other hazards

Other hazards which do not result in classification:
Toxic fumes may be released during a fire. May be mildly irritating to skin and respiratory system. May cause gastrointestinal irritation. Prolonged or repeated overexposure could cause adverse liver effects.

Environmental precautions:
Avoid release to the environment. See ECOLOGICAL INFORMATION, Section 12.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS #</th>
<th>Concentration (% by weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>Ethyl alcohol Ethyl hydrate</td>
<td>64-17-5</td>
<td>82.19</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>Isopropyl alcohol 2-Propanol</td>
<td>67-63-0</td>
<td>4.11</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical advice/attention.
Inhalation: If inhaled: Remove person to fresh air and keep comfortable for breathing. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If irritation or symptoms develop, seek medical attention.
Eye contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Flush eyes with water for at least 15 minutes. If eye irritation persists: get medical advice/attention.
SAFETY DATA SHEET

Most important symptoms and effects, both acute and delayed

- Causes eye irritation. Symptoms may include stinging, tearing, redness and swelling. Inhalation of high concentrations may cause central nervous system depression, with effects ranging from dizziness and headache to unconsciousness. May be mildly irritating to skin and respiratory system. May cause coughing and breathing difficulties. Direct skin contact may cause temporary redness. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Prolonged or repeated overexposure could cause adverse liver effects. Long-term ingestion may result in liver damage with symptoms such as jaundice, swelling of the legs, ankles and feet, weight loss and weakness. However, these effects and symptoms are primarily associated with the consumption of alcoholic beverages.

Indication of any immediate medical attention and special treatment needed

- Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media
- Dry chemical, carbon dioxide and foam.

Unsuitable extinguishing media
- Water may be ineffective because it may not cool product below the flashpoint.

Special hazards arising from the substance or mixture / Conditions of flammability

- Highly flammable liquid and vapor. Will ignite when exposed to heat, flame and other sources of ignition. Vapors are heavier than air and collect in confined and low-lying areas. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)
- Flammable liquid - Category 2

Hazardous combustion products
- Carbon oxides; formaldehyde; unburned alcohols.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters
- Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures
- Move containers from fire area if safe to do so. Water spray may be useful in cooling equipment exposed to heat and flame. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Keep all other personnel upwind and away from the spill/release. Restrict access to area until completion of clean-up. Refer to protective measures listed in sections 7 and 8.

Environmental precautions
- Ensure spilled product does not enter drains, sewers, waterways, or confined spaces.

Methods and material for containment and cleaning up

- Ventilate the area. Prevent further leakage or spillage if safe to do so. Eliminate all ignition sources. Use only non-sparking tools and equipment in the clean-up process. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand). Pick up and transfer to properly labeled containers. Do not use combustible absorbents, such as sawdust. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.
SAFETY DATA SHEET

Special spill response procedures:

- If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
- US CERCLA Reportable quantity (RQ): None known.

In Canada: Contact appropriate local and provincial environmental authorities for assistance and/or reporting requirements.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:

- Use only outdoors or in a well-ventilated area. Wear protective equipment during handling. Wear protective gloves and eye/face protection. Avoid breathing vapors. Avoid contact with skin, eyes and clothing. Keep away from heat, sparks and open flame. - No smoking.
- Ground/Bond container and receiving equipment. Use explosion-proof electrical and ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep a way from incompatibles. Keep container tightly closed when not in use. Wash thoroughly after handling. Empty containers retain residue (liquid and/or vapour) and can be dangerous.

Conditions for safe storage:

- Store in a cool, dry, well-ventilated area. Store away from incompatibles and out of direct sunlight. Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks.

Incompatible materials:

- Strong oxidizing agents (e.g. hydrogen peroxide, nitric acid); Strong acids; Alkali metals (e.g. Sodium; Potassium)

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA</td>
<td>STEL</td>
</tr>
<tr>
<td>Ethanol</td>
<td>N/Av</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>200 ppm</td>
<td>400 ppm</td>
</tr>
</tbody>
</table>

Exposure controls

Ventilation and engineering measures:

- Use only outdoors or in a well-ventilated area. Use with adequate local or mechanical ventilation to meet TLV requirements. Use explosion-proof electrical and ventilating equipment.

Respiratory protection:

- If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection:

- Wear protective gloves. Wear as appropriate: Butyl rubber; Viton; Neoprene. The following glove material(s) are not recommended: Natural Rubber; polyvinyl alcohol; PVC. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear sufficient clothing to prevent skin contact.

Eye / face protection:

- Wear eye/face protection. Wear as appropriate: Safety glasses with side shields; Tightly fitting safety goggles.

Other protective equipment:

- An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.
General hygiene considerations:

Avoid breathing vapors. Avoid contact with skin, eyes and clothing. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse. Handle in accordance with good industrial hygiene and safety practice.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**
Light blue liquid.

**Odor**
Solvent/alcohol odor.

**Odor threshold**
0.1 - 5100 ppm (Ethanol)
40 - 200 ppm (Isopropanol)

**pH**
N/Av

**Melting/Freezing point**
- 100°C (-148°F) (approximately)

**Initial boiling point and boiling range**
78 - 83°C (172 - 181°F)

**Flash point**
13°C (55.4°F)

**Flashpoint (Method)**
Tag closed cup

**Evaporation rate (BuAe = 1)**
1.7 (butyl acetate = 1)

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

**Lower flammable limit (% by vol.)**
3.3% (Ethanol)
2.5% (Isopropanol)

**Upper flammable limit (% by vol.)**
19% (Ethanol)
12% (Isopropanol)

**Oxidizing properties**
None known.

**Explosive properties**
Not explosive

**Flame projection length**
N/Ap

**Auto-ignition temperature**
370°C (752°F)

**Decomposition temperature**
N/Av

**Viscosity**
1.35 cP @ 20°C (68°F) (approximately)

**Volatile (% by weight)**
100%

**Absolute organic Compounds (VOC’s)**
715 g/L

**Solubility in water**
Complete

**Other solubility(ies)**
Soluble in all proportions with diethyl ether, acetone, benzene, chloroform, methanol and some other organic solvents.

**Partition coefficient: n-octanol/water or Coefficient of water/oil distribution**
N/Av

**Relative density / Specific gravity**
0.7882 @ 20°C (68°F)

**Vapor pressure**
5.9 kPa (44.25 mm Hg) @ 20°C (68°F) (Ethanol)
4.41 kPa (33.1 mm Hg) @ 20°C (68°F) (Isopropanol)

**Vapor density**
1.61 (Air = 1)

**Vapor pressure**
1.61 (Air = 1)

**Viscosity**
1.35 cP @ 20°C (68°F) (approximately)

**Volatiles (% by weight)**
100%

**Volatile organic Compounds (VOC’s)**
598 g/L

**Absolute pressure of container**
N/Av

**Flame projection length**
N/Ap

**Other physical/chemical comments**
No additional information.

### SECTION 10. STABILITY AND REACTIVITY

**Reactivity**
Not normally reactive.
SAFETY DATA SHEET

Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Hazardous polymerization does not occur.
Conditions to avoid : Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials. Avoid heat and open flame.
Incompatible materials : Strong oxidizing agents (e.g. hydrogen peroxide, nitric acid); Strong acids; Alkali metals (e.g. Sodium; Potassium)
Hazardous decomposition products : None known, refer to hazardous combustion products in Section 5.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES
Routes of exposure skin absorption : YES

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation : Mild respiratory irritant. May cause coughing and breathing difficulties. Inhalation may cause headache, nausea and central nervous effects such as dizziness, coordination difficulties and unconsciousness.

Sign and symptoms ingestion : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin : Direct skin contact may cause slight or mild, transient irritation. Direct skin contact may cause temporary redness.

Sign and symptoms eyes : Causes eye irritation. Symptoms may include stinging, tearing, redness and swelling.

Potential Chronic Health Effects : Excessive over-exposure may cause slight liver effects. Long-term ingestion may result in liver damage with symptoms such as jaundice, swelling of the legs, ankles and feet, weight loss and weakness. However, these effects and symptoms are primarily associated with the consumption of alcoholic beverages.

Mutagenicity : No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Contains: Ethanol. Ethanol has been shown to cause mutagenic effects but at extremely high oral doses, which are not applicable in an occupational setting.

Carcinogenicity : Not expected to have carcinogenic effects. No components are listed as carcinogens by ACGIH, IARC, OSHA or NTP.

Note that this product contains ethanol, a confirmed animal carcinogen (A3) by the ACGIH and human carcinogen (Group 1) by the IARC; however, this is only applicable when the chemical is present in alcoholic beverages.

Reproductive effects & Teratogenicity : This product is not expected to cause reproductive or developmental effects.

Contains: Ethanol. Ethanol has been shown to cause effects on reproductive organs (e.g. decreased testicular weight, decreased numbers of motile sperm, decreased ovarian functions, irregular fertility cycles) but at extremely high oral doses, which are not applicable in an occupational setting. Ethanol has been shown to cause developmental / teratogenic effects, but only in the presence of maternal toxicity.
SAFETY DATA SHEET

Sensitization to material
- Not expected to be a skin or respiratory sensitizer.

Specific target organ effects
- This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification: Specific target organ toxicity, single exposure - Category 3. May cause drowsiness or dizziness.

Medical conditions aggravated by overexposure
- Pre-existing skin, eye and respiratory disorders.

Synergistic materials
- Ethanol has been associated with an increase in the toxicity of many chemicals including other alcohols, ketones (e.g. acetone and methyl ethyl ketone), benzene, toluene, halogenated hydrocarbons (e.g. carbon tetrachloride, trichloroethylene, chloroform, and methylene chloride), aromatic amines and nitrosamines. In particular, it enhances the activity of many chemicals which are harmful to the liver (hepatotoxic agents). There is also a synergistic effect between ethanol and certain metals (e.g. cobalt, manganese and mercury) or compounds containing these metals.

Toxicological data
- Not classified for acute toxicity based on available data. The calculated ATE values for this mixture are:
  - ATE oral = 114,842 mg/kg

See below for individual ingredient acute toxicity data.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>LC50(4hr) inh, rat (vapor)</th>
<th>LD50 (Oral, rat)</th>
<th>LD50 (Rabbit, dermal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>&gt; 32 380 ppm (61 mg/L)</td>
<td>7060 mg/kg</td>
<td>&gt; 15 800 mg/kg</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>17 000 ppm (41.8 mg/L)</td>
<td>4720 mg/kg</td>
<td>12 890 mg/kg</td>
</tr>
</tbody>
</table>

Other important toxicological hazards
- None known or reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
- The product is not classified as environmentally hazardous.
  No data is available on the product itself. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters.

See the following tables for individual ingredient ecotoxicity data.

Ecotoxicity data:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS No</th>
<th>Toxicity to Fish LC50 / 96h</th>
<th>NOEC / 21 day</th>
<th>M Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>&gt; 100 mg/L (Fathead minnow)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>67-63-0</td>
<td>9640 mg/L (Fathead minnow)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

### Toxicity to Daphnia

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS No</th>
<th>EC50 / 48h</th>
<th>NOEC / 21 day</th>
<th>M Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>5012 mg/L (Daphnia magna)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>67-63-0</td>
<td>&gt; 10,000 mg/L/24 hr (Daphnia magna)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
</tbody>
</table>

### Toxicity to Algae

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS No</th>
<th>EC50 / 96h or 72h</th>
<th>NOEC / 96h or 72h</th>
<th>M Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>1000 mg/L/96hr (Green algae)</td>
<td>N/Av</td>
<td>None.</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>67-63-0</td>
<td>N/Av</td>
<td>N/Av</td>
<td>None.</td>
</tr>
</tbody>
</table>

### Persistence and degradability:
- No data is available on the product itself.

The following ingredients are considered to be readily biodegradable: Ethanol; Isopropanol.

### Bioaccumulation potential:
- No data is available on the product itself. See the following data for ingredient information.

### Components

<table>
<thead>
<tr>
<th>Components</th>
<th>Partition coefficient n-octanol/water (log Kow)</th>
<th>Bioconcentration factor (BCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol (CAS 64-17-5)</td>
<td>-0.31</td>
<td>N/Av</td>
</tr>
<tr>
<td>Isopropanol (CAS 67-63-0)</td>
<td>0.05</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### Mobility in soil
- No data is available on the product itself.

### Other Adverse Environmental effects
- No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### SECTION 13. DISPOSAL CONSIDERATIONS

**Handling for Disposal:** Handle waste according to recommendations in Section 7. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

**Methods of Disposal:** Dispose in accordance with all applicable federal, state, provincial and local regulations.

**RCRA:** If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.
### SECTION 14. TRANSPORTATION INFORMATION

<table>
<thead>
<tr>
<th>Regulatory Information</th>
<th>UN Number</th>
<th>UN proper shipping name</th>
<th>Transport hazard class(es)</th>
<th>Packing Group</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDG</td>
<td>UN1987</td>
<td>ALCOHOLS, N.O.S. (Ethanol; Isopropanol)</td>
<td>3</td>
<td>II</td>
<td></td>
</tr>
<tr>
<td>TDG Additional information</td>
<td></td>
<td>May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass. Under the TDGR, refer to Section 1.17 for additional exemption information, if shipping under this exemption.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>49CFR DOT</td>
<td>UN1987</td>
<td>ALCOHOLS, N.O.S.</td>
<td>3</td>
<td>II</td>
<td></td>
</tr>
<tr>
<td>49CFR DOT Additional information</td>
<td></td>
<td>May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass. Refer to 49 CFR Section 173.150.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICAO/IATA</td>
<td>UN1987</td>
<td>Alcohols, n.o.s. (Ethanol; Isopropanol)</td>
<td>3</td>
<td>II</td>
<td></td>
</tr>
<tr>
<td>ICAO/IATA Additional information</td>
<td></td>
<td>Refer to the appropriate Packing Instruction, prior to shipping this material. Review all State and Operator Variations, prior to shipping this material.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMDG</td>
<td>UN1987</td>
<td>ALCOHOLS, N.O.S. (Ethanol; Isopropanol)</td>
<td>3</td>
<td>II</td>
<td></td>
</tr>
<tr>
<td>IMDG Additional information</td>
<td></td>
<td>May be shipped as LIMITED QUANTITY when transported in containers no larger than 1.0 Litre, in packages not exceeding 30 kg gross mass.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Special precautions for user**: Appropriate advice on safety must accompany the package. Keep away from heat, sparks and open flame. - No smoking.

**Environmental hazards**: This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See Section 12 for more environmental information.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**: Not applicable.

### SECTION 15 - REGULATORY INFORMATION

**US Federal Information:**

Components listed below are present on the following U.S. Federal chemical lists:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS #</th>
<th>TSCA Inventory</th>
<th>CERCLA Reportable Quantity(RQ) (40 CFR 117.302):</th>
<th>SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:</th>
<th>SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical</th>
<th>de minimus Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>Yes</td>
<td>None.</td>
<td>None.</td>
<td>No</td>
<td>N/Ap</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>67-63-0</td>
<td>Yes</td>
<td>None.</td>
<td>None.</td>
<td>Yes</td>
<td>1%</td>
</tr>
</tbody>
</table>

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Fire Hazard; Immediate (Acute) health hazard; Chronic Health Hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.
SAFETY DATA SHEET

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS #</th>
<th>California Proposition 65</th>
<th>State “Right to Know” Lists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Listed</td>
<td>Type of Toxicity</td>
<td>CA</td>
</tr>
<tr>
<td>Ethanol</td>
<td>Yes</td>
<td>Carcinogen (in alcoholic beverages)</td>
<td>Yes</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>No</td>
<td>N/Ap</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

Canadian National Pollutant Release Inventory (NPRI): This product contains the following substances listed on the NPRI:
- Ethanol (Part 5: Individual Substances)
- Isopropanol (Part 1, Group A Substance; Part 5: Individual Substances)

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS #</th>
<th>European EINECs</th>
<th>Australia AICS</th>
<th>Philippines PICCS</th>
<th>Japan ENCS</th>
<th>Korea KECl/KECL</th>
<th>China IECSC</th>
<th>New Zealand IOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td>200-578-6</td>
<td>Present</td>
<td>Present</td>
<td>(2)-202</td>
<td>KE-13217</td>
<td>Present</td>
<td>HSR001144</td>
</tr>
<tr>
<td>Isopropanol</td>
<td>67-63-0</td>
<td>200-861-7</td>
<td>Present</td>
<td>Present</td>
<td>(2)-207</td>
<td>KE-29363</td>
<td>Present</td>
<td>HSR001180</td>
</tr>
</tbody>
</table>

SECTION 16. OTHER INFORMATION

Legend:
- ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- DOT: Department of Transportation
- ENCS: Existing and New Chemical Substances
- EPA: Environmental Protection Agency
- HMIS: Hazardous Materials Identification System
- HSDB: Hazardous Substances Data Bank
- IARC: International Agency for Research on Cancer
- IATA: International Air Transport Association
- ICAO: International Civil Aviation Organisation
- IMDG: International Maritime Dangerous Goods
- Inh: Inhalation
- IOC: Inventory of Chemicals
- IUCLID: International Uniform Chemical Information Database
- KECl: Korean Existing Chemicals Inventory
SAFETY DATA SHEET

KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
mppcf: million particles per cubic foot
MSHA: Mine Safety and Health Administration
N/A: Not Applicable
N/Av: Not Available
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
OECD: Organisation for Economic Co-operation and Development
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
PNOC: Particulates Not Otherwise Classified
PNOR: Particulates Not Otherwise Regulated
PNOS: Particles Not Otherwise Specified
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet / Material Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TWA: Time Weighted Average
TSCA: Toxic Substance Control Act
WHMIS: Workplace Hazardous Materials Identification System

References:
1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2015.
3. Canadian Centre for Occupational Health and Safety, CCInfoWeb databases, 2016 (Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists - March 2015 version.

Preparation Date (mm/dd/yyyy):
03/01/2016

Other special considerations for handling:
Provide adequate information, instruction and training for operators.
SAFETY DATA SHEET

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