1. IDENTIFICATION

Product Identifier
Product Name: Liquid-Ice® VP
Other Means of Identification:
SDS No.: VP-001
Recommended use of the chemical and restrictions on use:
Recommended use: Metalworking compound

Details of the supplier of the Safety Data Sheet
LIQUID ICE CORPORATION
500C UNION WEST BLVD.
MATTHEWS, NC  28104 USA
www.LiquidIceCoolant.com
E-mail: sales@liquidicecoolant.com

Emergency Telephone Number
Company Telephone Number: +1 - (704) 882-3505
Company Fax Number: +1 - (704) 882-8665

Emergency Telephone Number (24 hr.): Chemtrec (800) 424-9300 (North America), +1-703-527-3887 (International)

2. HAZARDS IDENTIFICATION

Classification:
This chemical does not meet the hazardous criteria set forth by the 2012 OSHA Hazard Communication Standard (29CFR 1910.1200). However, the Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

Appearance: Straw to amber liquid
Physical State: Liquid at 77 °F (25 °C)
Odor: Mild
3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triethanolamine</td>
<td>102-71—6</td>
<td>0.1 – 10.0%</td>
</tr>
</tbody>
</table>

Non-Hazardous Ingredients:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary Blend</td>
<td>N/A</td>
<td>10 – 65%</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>25 – 65%</td>
</tr>
</tbody>
</table>

If “Chemical Name/CAS No.” is “proprietary” or Weight % is listed as a range, the specific chemical identity or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with running water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if redness or irritation occurs.

Skin Contact: Remove contaminated clothing. Wash affected area thoroughly with soap and water for 15 minutes. Get medical attention if irritation or other ill effects develop or persist.

Inhalation: Remove victim to fresh air. Give artificial respiration if breathing has stopped. Get immediate medical attention. Do not give fluids is victim is unconscious.

Ingestion: If victim is conscious, give large amounts of water or milk. Get medical attention. Never give anything by mouth to an unconscious person.

Note to Physician: Treat according to person's condition and specifics of exposure.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:
Water spray jet, foam, carbon dioxide, dry powder

Unsuitable Extinguishing Media:
Not determined

Specific Hazards Arising from the Chemical: None known

Protective Equipment and Precautions for Fire Fighters:

Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

Hazardous Combustion Products: Oxides of Nitrogen (NOx) and Carbon
6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions: Use personal protection recommended in Section 8
Other Information: FOR ALL TRANSPORTATION ACCIDENTS CALL CHEMTREC AT (800) 424-9300 OR +1-703-527-3887 FOR INTERNATIONAL COLLECT CALLS
For Emergency Responders: Keep unnecessary and unprotected personnel from entering. Use personal protection recommended in Section 8
Environmental Precautions: See Section 12 for additional ecological information. See Section 13, Disposal Considerations for additional information

Methods and Materials for cleaning up:

Methods for Containment: Prevent further leakage or spillage if safe to do so
Methods for Clean-up: Small Spill: Dike spilled material if possible. Collect spilled material with an inert absorbent such as sand or vermiculite. Shovel waste material into properly labeled closed container. Flush area with water to remove residue. Do not discharge into storm drains or the aquatic environment. Large Spill: Same basic procedure as for small spill. Pumps or vacuum may be needed to remove spilled material.

7. HANDLING AND STORAGE

Precautions for Safe Handling:
Advice on Safe Handling: Handle in accordance with good industrial hygiene and safety practices. Use personal protection recommended in Section 8. Avoid skin and eye and clothing contact.

Conditions for safe storage, including any incompatibilities
Storage Conditions: Store in original containers in a cool, dry and well ventilated space. Keep containers tightly closed when not in use. Store at 5-40 °C (40 – 105 °F)
Incompatible Materials: Strong oxidizers, highly alkaline products, nitrites, nitrosating agents.

8. EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure Guidelines: This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region-specific regulatory bodies

Appropriate Engineering Controls
Engineering Controls: Ensure adequate ventilation, especially in confined areas. Eyewash stations. Showers

Individual Protection measures, such as personal protective equipment:
Eye/Face Protection: Safety glasses or chemical worker's goggles.
Skin/Body Protection: Wash at mealtime and end of shift. Contaminated clothing and shoes should be removed as soon as practical and thoroughly cleaned before reuse. Protective clothing to minimize skin contact should be worn, as well as chemically resistant safety shoes. Butyl rubber, PVC or Neoprene protective gloves are recommended.
Respiratory Protection: If airborne concentrations pose a health hazard, become irritating or exceed recommended limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements under 29 CFR 1910.134
General Hygiene Consideration: Handle in accordance with good industrial hygiene and safety practice

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid at 77°F (25°C)</td>
</tr>
<tr>
<td>Color</td>
<td>Straw to Amber</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td>Specific Gravity @ 20°C</td>
<td>1.04</td>
</tr>
<tr>
<td>Density</td>
<td>8.7 lb./gal.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>20 cP at 25°C</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>0°C (32°F)</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>&gt; 100°C (212°F)</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt; 220°C (&gt; 428°F)</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>None</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt; 220°C (&gt; 428°F)</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Liquid (not applicable)</td>
</tr>
<tr>
<td>Upper Flammability Limit</td>
<td>Not applicable – product will not ignite</td>
</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>Not applicable – product will not ignite</td>
</tr>
<tr>
<td>Vapor Pressure @ 20°C</td>
<td>&lt; 0.01 mm Hg</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Solubility in Water</td>
<td>Soluble</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH</td>
<td>9.5 (10% in water @ 25°C)</td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>Not determined</td>
</tr>
<tr>
<td>Dynamic Viscosity</td>
<td>Not determined</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>None known</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>Not determined</td>
</tr>
<tr>
<td>VOC Content</td>
<td>10 g/L (ASTM E-1868/10SCAQMD Rule 1144)</td>
</tr>
</tbody>
</table>

Note: The above are typical properties and cannot be construed as specifications.

10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal conditions
Chemical Stability: Stable under recommended storage conditions

Possibility of Hazardous Reactions:
None under normal processing

Hazardous Polymerization: Hazardous polymerization will not occur.

Conditions to Avoid:
Do not use highly alkaline products or nitrites or nitrosating agents with this product.

Incompatible materials:
Strong oxidizers

Hazardous Decomposition Products
Carbon Oxides, Nitrogen Oxides (NOx)
11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

Eye Contact: Avoid contact with eyes
Skin contact: Avoid contact with skin and clothing
Inhalation: Avoid breathing vapors or mists
Ingestion: Do not taste or swallow

Component Information

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD60</th>
<th>Dermal LD60</th>
<th>Inhalation LD60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water 7732-18-5</td>
<td>&gt;90 mL/Kg (rat)</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Triethanolamine, 102-71-6</td>
<td>5,350 mg/Kg (rat)</td>
<td>&gt;22.5 g/Kg (rabbit)</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Information on physical, chemical and toxicological effects

Symptoms See Section 4 of this SDS for symptoms

Delayed and immediate effects as well as chronic effects from short and long term exposure

Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP

Numerical Measures of Toxicity

Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity

This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment

Persistence/Degradability:
Biodegradable

Bioaccumulation:
Not determined

Mobility:
Not considered mobile

Other Adverse Effects:
Not determined

13. ECOLOGICAL INFORMATION

Waste Treatment Methods

Disposal of Waste: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Contaminated Packaging Disposal should be in accordance with applicable federal, regional and local laws and regulations
14. TRANSPORT INFORMATION

**Note:** See current shipping paper for most up to date shipping information, including exemptions and special circumstances

**DOT** Not regulated

**Ocean Shipment (IMDG)** Not regulated

**Air Shipment (IATA)** Not regulated

15. REGULATORY INFORMATION

**International Inventories**

TSCA: Listed
NDSL: Listed
EINECS: Listed

**US Federal Regulations**

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) 40 CFR 302, or the Superfund Amendments and Reauthorization Act (SARA) 40 CFR 355

**Section 311/312 Hazard Categories:**

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Health Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Chronic Health Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Fire Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Pressure Hazard</td>
<td>No</td>
</tr>
<tr>
<td>Reactive Hazard</td>
<td>No</td>
</tr>
</tbody>
</table>

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1966 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**CWA (Clean Water Act):**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**US State Regulations**

**California Proposition 65**

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm: Triethanolamine

**US State Right to Know Regulations**

This product does not contain any substances regulated under applicable state right-to-know regulations
## 16. OTHER INFORMATION

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Reactivity</th>
<th>Special Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Reactivity</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>A</td>
</tr>
</tbody>
</table>

Issue Date: June 21, 2015  
Revision Date: November 10, 2015  
Revision Note: New Format and new data for Section 11

The information and recommendations contained herein are, to the best of Liquid Ice Corporation’s knowledge and belief, accurate and reliable as of the date issued. Liquid Ice Corporation does not warrant or guarantee their accuracy or reliability, and Liquid Ice Corporation shall not be liable for any loss or damage arising out of the use thereof. The information and recommendations are offered for the user’s consideration and examination, and it is the user’s responsibility to satisfy itself that they are suitable and complete for its particular use.

End of Safety Data Sheet