MATERIAL SAFETY DATA SHEET

This Material Safety Data Sheet conforms to the requirements of ANSI Z400.1, using the International Chemical Safety Cards of the Global Harmonizing System. This MSDS complies with 29 CFR 1910.1200 (HAZARD COMMUNICATION STANDARD).

IMPORTANT: Read this MSDS before handling & disposing of this product. Pass this information on to employees, customers, & users of this product.

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

PRODUCT IDENTITY: ACETIC ACID (GLACIAL) 80%
COMPANY IDENTITY: SOLVCHEM, INC.
COMPANY ADDRESS: 1904 MYKAWA ROAD
COMPANY CITY: PEARLAND, TX 77588-0490
COMPANY PHONE: 1-281-485-5377
CHEMTREC PHONE: 1-800-424-9300

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

CONTAINS: 75-85% ACETIC ACID (64-19-7)[200-580-7],
15-25% WATER (7732-18-5)
Number in parentheses is CAS #, number in brackets is European EC #.

AAHY8008  SECTION 3. HAZARDS IDENTIFICATION

EXPOSURE PREVENTION: AVOID ALL CONTACT!

RISK STATEMENTS:
R36/37/38 Irritating to eyes, respiratory system and skin.
R35 Causes severe burns.

SAFETY STATEMENTS:
S23 Do not breathe gas, fumes, vapor, or spray.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S45 In case of accident, or if you feel unwell, seek medical advice immediately. (Show the label where possible).
SECTION 4. FIRST AID MEASURES

EYE CONTACT:
For eyes, flush with plenty of water for 15 minutes & get medical attention.

SKIN CONTACT:
In case of contact with skin immediately remove contaminated clothing.
Wash thoroughly with soap & water. Wash contaminated clothing before reuse.

INHALATION:
After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, trained personnel should immediately begin artificial respiration. If the heart has stopped, trained personnel should immediately begin cardiopulmonary resuscitation (CPR).

SWALLOWING:
Rinse mouth. GET MEDICAL ATTENTION IMMEDIATELY. Do NOT give liquids to an unconscious or convulsing person.

SECTION 5. FIRE FIGHTING MEASURES

FIRE & EXPLOSION PREVENTIVE MEASURES
NO open flames. explosion-proof electrical equipment, lighting.

EXTINGUISHING MEDIA
Use dry powder, carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES
Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used. Do not enter confined fire-space without full bunker gear. (Helmet with face shield, bunker coats, gloves & rubber boots). Use NIOSH approved positive-pressure self-contained breathing apparatus.

UNUSUAL EXPLOSION AND FIRE PROCEDURES
COMBUSTIBLE!
Reacts with most metals producing hydrogen which is extremely flammable & may explode. Keep container tightly closed. Isolate from oxidizers, alkalis, heat, & open flame. Applying to hot surfaces requires special precautions. Closed containers may explode if exposed to extreme heat. Empty container very hazardous! Continue all label precautions!

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE MEASURES:
Keep unprotected personnel away. Use complete chemical protective suit with self-contained breathing apparatus.

CONTAINMENT AND CLEAN-UP MEASURES:
Stop spill at source. Dike and contain. Cautiously neutralize spilled liquid with sodium carbonate solution only under the responsibility of an expert. Collect leaking liquid in sealable containers. Wash away remainder with plenty of water.
SECTION 7. HANDLING AND STORAGE

HANDLING
Isolate from oxidizers, alkalis, heat, & open flame.
Use only with adequate ventilation. Avoid breathing of vapor or spray mist.
Do not get in eyes, on skin or clothing.
Wear OSHA Standard full face shield. Consult Safety Equipment Supplier. Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.
Avoid free fall of liquid. Ground containers when transferring. Do not flame cut, braze, or weld. Empty container very hazardous! Continue all label precautions!

STORAGE
Isolate from strong oxidants.
Do not store above 49 C/120 F. Keep container tightly closed & upright when not in use to prevent leakage.
Reacts with most metals producing hydrogen which is extremely flammable & may explode. Wear full face shield, gloves & full protective clothing when opening or handling. When empty, drain completely, replace bungs securely.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

RESPIRATORY EXPOSURE CONTROLS
A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z86.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

VENTILATION
LOCAL EXHAUST : Necessary
MECHANICAL (GENERAL) : Necessary
SPECIAL : None
OTHER : None

PERSONAL PROTECTIONS:
Wear OSHA Standard full face shield. Consult Safety Equipment Supplier. Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.

WORK & HYGIENIC PRACTICES:
Provide readily accessible eye wash stations & safety showers.
Wash at end of each workshift & before eating, smoking or using the toilet.
Promptly remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.
SECTION 9. PHYSICAL DATA

APPEARANCE: Liquid, Water–White

ODOR: Mild

BOILING RANGE: 100 116 120 C / 213 242 248 F

AUTO IGNITION TEMPERATURE: 343 C / 650 F (Lowest Component)

LOWER FLAMMABLE LIMIT IN AIR (% by vol): 5.4 (Lowest Component)

FLASH POINT (TEST METHOD): No Flash to Boiling Point

FLAMMABILITY CLASSIFICATION: Class IIIA

GRAVITY @ 68/68 F / 20/20 C:

API: 4.3

SPECIFIC GRAVITY (Water=1): 1.042

POUNDS/GALLON: 8.679

VOC'S (>0.44 Lbs/Sq In): 0.0 Vol. % / 0.0 g/L / 0.000 Lbs/Gal

TOTAL VOC'S (TVOC): 79.2 Vol. % / 833.6 g/L / 6.943 Lbs/Gal

NONEXEMPT VOC'S (CVOC): 79.2 Vol. % / 833.6 g/L / 6.943 Lbs/Gal

HAZARDOUS AIR POLLUTANTS (HAPS): 0.0 Wt. % / 0.0 g/L / 0.000 Lbs/Gal

VAPOR PRESSURE (mm of Hg) @ 20 C: 15.1

NONEXEMPT VOC PARTIAL PRESSURE (mm of Hg @ 20 C): 7.1

VAPOR DENSITY (air=1): 1.4

WATER ABSORPTION: Complete

pH (Neutrality): 1.0

REFRACTIVE INDEX: 1.364

SECTION 10. STABILITY & REACTIVITY

STABILITY
Stable but Reacts with most metals producing hydrogen which is extremely flammable & may explode.

CONDITIONS TO AVOID
Isolate from oxidizers, alkalis, heat, & open flame.

MATERIALS TO AVOID
Reacts with strong oxidants, causing fire & explosion hazard. Reacts with strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS
Carbon Monoxide, Carbon Dioxide from burning.

HAZARDOUS POLYMERIZATION
Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>CAS #</th>
<th>TWA (OSHA)</th>
<th>TLV (ACGIH)</th>
<th>HAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid</td>
<td>64-19-7</td>
<td>10 ppm</td>
<td>10 ppm</td>
<td>No</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>None Known</td>
<td>None Known</td>
<td>No</td>
</tr>
</tbody>
</table>

This product contains no EPA Hazardous Air Pollutants (HAP) in amounts > 0.1%.
SECTION 11. TOXICOLOGICAL INFORMATION (CONTINUED)

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>CAS #</th>
<th>CEILING</th>
<th>STEL(OSHA/ACGIH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid</td>
<td>64-19-7</td>
<td>None Known</td>
<td>15 ppm</td>
</tr>
</tbody>
</table>

**ACUTE HAZARDS**

**EYE & SKIN CONTACT:**
- Severe burns to skin, defatting, dermatitis.
- Severe burns to eyes, redness, tearing, blurred vision.
- Liquid can cause Severe skin & eye burns. Wash thoroughly after handling.

**INHALATION:**
- Severe respiratory tract irritation may occur. Vapor harmful.

**SWALLOWING:**
- Harmful or fatal if swallowed.

**SUBCHRONIC HAZARDS/CONDITIONS AGGRAVATED**

**CONDITIONS AGGRAVATED**
- Persons with severe skin, liver or kidney problems should avoid use.

**CHRONIC HAZARDS**

**CANCER, REPRODUCTIVE & OTHER CHRONIC HAZARDS:**
- This product has no carcinogens listed by IARC, NTP, NIOSH, OSHA or ACGIH, as of this date, greater or equal to 0.1%.
SECTION 12. ECOLOGICAL INFORMATION

MAMMALIAN INFORMATION:

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>CAS #</th>
<th>LOWEST KNOWN LETHAL DOSE DATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid</td>
<td>64-19-7</td>
<td>5000.0 mg/kg (Mice)</td>
</tr>
</tbody>
</table>

AQUATIC ANIMAL INFORMATION:
No aquatic environmental information is available on this product.

MOBILITY
This material is a mobile liquid.

DEGRADABILITY
This product is completely biodegradable.

ACCUMULATION
This product does not accumulate or biomagnify in the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Processing, use or contamination may change the waste management options. Recycle/dispose of observing national, regional, state, provincial and local health, safety & pollution laws. If in doubt, contact appropriate agencies.

SECTION 14. TRANSPORT INFORMATION

IF CONTAINER HAS > PRODUCT RQ (SEE SECTION 15) PUT "RQ," BEFORE SHIPPING NAME.

DOT SHIPPING NAME: UN2790, Acetic acid solution, 8, PG-III
DRUM LABEL: (CORROSIVE)
IATA / ICAO: UN2790, Acetic acid solution, 8, PG-III
IMO / IMDG: UN2790, Acetic acid solution, 8, PG-III
EMERGENCY RESPONSE GUIDEBOOK NUMBER: 153

AAHY8008

SECTION 15. REGULATORY INFORMATION

EPA REGULATION:
SARA SECTION 311/312 HAZARDS: Acute Health, Fire

All components of this product are on the TSCA list. This material contains no known products restricted under SARA Title III, Section 313 in amounts greater or equal to 1%.
SECTION 15. REGULATORY INFORMATION (CONTINUED)

SARA TITLE III INGREDIENTS          CAS#     WT. % (REG. SECTION) RQ (LBS)
Acetic Acid                          64-19-7  <90 (311,312)  5000

> 6250 LB / 2840 KG OF THIS PRODUCT IN 1 CONTAINER EXCEEDS THE "RQ" OF ACETIC ACID.
Any release equal to or exceeding the RQ must be reported to the National Response Center (800-424-8802) and appropriate state and local regulatory agencies as described in 40 CFR 302.6 and 40 CFR 355.40 respectively. Failure to report may result in substantial civil and criminal penalties. State & local regulations may be more restrictive than federal regulations.

STATE REGULATIONS:
CALIFORNIA PROPOSITION 65: This product contains no chemicals known to the State of California to cause cancer & reproductive toxicity.

INTERNATIONAL REGULATIONS
The components of this product are listed on the chemical inventories of the following countries: Australia, Canada, China, Europe (EINECS), Japan, Korea, United Kingdom.

SECTION 16. OTHER INFORMATION

HAZARD RATINGS:
HEALTH (NFPA): 2, HEALTH (HMIS): 3, FLAMMABILITY: 2, REACTIVITY: 1
(Personal Protection Rating to be supplied by user based on use conditions.)
This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

EMPLOYEE TRAINING
See Section 3 for Risk & Safety Statements. Employees should be made aware of all hazards of this material (as stated in this MSDS) before handling it.

NOTICE
The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process. Unless updated, this Material Safety Data Sheet is valid until 07/22/2012.