1. PRODUCT AND COMPANY IDENTIFICATION

Product name: 5% Acetic acid solution
Product Number: CO0082
Brand: Galvanic Applied Sciences
Product Use: Reactant
Supplier: Galvanic Applied Sciences
7000 Fisher Road SE
Calgary, AB T2H 0W3
CANADA
Telephone: 403.252.8470
Fax: 403.255.6287
Emergency Phone # (For both supplier and manufacturer): 613.996.6666 (Canutec)

2. HAZARDS IDENTIFICATION

Emergency Overview

Target Organs
Teeth., Kidney

WHMIS Classification
E Corrosive Material
Corrosive

GHS Classification
Skin irritation (Category 2)
Serious eye damage (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word
Danger
Hazard statement(s)
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary statement(s)
P280 Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification
Health hazard: 3
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

Potential Health Effects
Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Skin May be harmful if absorbed through skin. Causes skin burns.

Eyes Causes eye burns.

Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Formula</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>C₂H₄O₂</td>
<td>64-19-7</td>
<td>200-580-7</td>
<td>607-002-00-6</td>
<td>&gt;= 1 - &lt; 5 %</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>231-791-2</td>
<td>-</td>
<td>&gt; 95 - &lt;= 99 %</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Explosion data - sensitivity to mechanical impact
No data available

Explosion data - sensitivity to static discharge
No data available

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.
7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>64-19-7</td>
<td>TWA 10 ppm</td>
<td>25 mg/m³</td>
<td>Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 15 ppm</td>
<td>37 mg/m³</td>
<td>Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 10 ppm</td>
<td></td>
<td>Canada. British Columbia OEL</td>
</tr>
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<td></td>
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<td></td>
<td>Canada. British Columbia OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 10 ppm</td>
<td></td>
<td>Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEV 15 ppm</td>
<td></td>
<td>Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA 10 ppm</td>
<td></td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL 15 ppm</td>
<td></td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Specific engineering controls**
Use mechanical exhaust or laboratory fume hood to avoid exposure.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance
- **Form**: liquid
- **Colour**: No data available

### Safety data
- **pH**: No data available
- **Melting point/freezing point**: No data available
- **Boiling point**: No data available
- **Flash point**: No data available
- **Ignition temperature**: No data available
- **Auto-ignition temperature**: No data available
- **Lower explosion limit**: No data available
- **Upper explosion limit**: No data available
- **Vapour pressure**: No data available
- **Density**: No data available
- **Water solubility**: No data available
- **Partition coefficient: n-octanol/water**: No data available
- **Relative vapour density**: No data available
- **Odour**: No data available
- **Odour Threshold**: No data available
- **Evaporation rate**: No data available

## 10. STABILITY AND REACTIVITY

### Chemical stability
Stable under recommended storage conditions.

### Possibility of hazardous reactions
No data available
Conditions to avoid
No data available

Materials to avoid
Oxidizing agents, Metals, Amines, Alcohols, Peroxides, permanganates, e.g. potassium permanganate, Soluble carbonates and phosphates, Hydroxides

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity
  Oral LD50
  No data available
  Inhalation LC50
  No data available
  Dermal LD50
  No data available
  Other information on acute toxicity
  No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Eyes: No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
  IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
  ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity
No data available

Teratogenicity
No data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
No data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
No data available

Aspiration hazard
No data available

Potential health effects
  Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion  May be harmful if swallowed.
Skin    May be harmful if absorbed through skin. Causes skin burns.
Eyes    Causes eye burns.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
No data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

PBT and vPvB assessment
No data available

Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

WHMIS Classification
E  Corrosive Material  Corrosive

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.
16. OTHER INFORMATION

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Galvanic Applied Sciences and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.