Section 1  Product Description

Product Name: Acetic Acid, 0.166M
Recommended Use: Science education applications
Synonyms: Ethanoic Acid, Vinegar
Distributor: Carolina Biological Supply Company
2700 York Road, Burlington, NC 27215
1-800-227-1150

Chemical Information:
800-227-1150 (8am-5pm (ET) M-F)
Chemtrec: 800-424-9300 (Transportation Spill Response 24 hours)

Section 2  Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

WARNING

Causes skin irritation. Causes serious eye irritation.

GHS Classification:
Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2

Section 3  Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>99</td>
</tr>
<tr>
<td>Acetic Acid, Glacial</td>
<td>64-19-7</td>
<td>1</td>
</tr>
</tbody>
</table>

Section 4  First Aid Measures

Emergency and First Aid Procedures
Inhalation: In case of accident by inhalation: remove casualty to fresh air and keep at rest.
Eyes: 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.
Skin Contact: IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.
Ingestion: If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Section 5  Firefighting Procedures

Extinguishing Media: Use media suitable to extinguish surrounding fire.
Fire Fighting Methods and Protection: Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.
Fire and/or Explosion Hazards: Fire or excessive heat may produce hazardous decomposition products.
Hazardous Combustion Products: Carbon dioxide, Carbon monoxide

Section 6  Spill or Leak Procedures
Safety Data Sheet

Steps to Take in Case Material Is Released or Spilled:
Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill. Ventilate the contaminated area. Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation.

Section 7 Handling and Storage
Handling: Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.
Storage: Keep container tightly closed in a cool, well-ventilated place.
Storage Code: Green - general chemical storage

Section 8 Protection Information

Control Parameters

ACGIH OSHA PEL
Chemical Name (TWA) (STEL) (TWA) (STEL)
Acetic Acid, Glacial 10 ppm TWA 15 ppm STEL 10 ppm TWA; 25 mg/m3 TWA N/A

Engineered Controls:
Local exhaust ventilation or other engineering controls are normally required when handling or using this product to avoid overexposure.

Personal Protective Equipment (PPE):
No respiratory protection required under normal conditions of use. Provide general room exhaust ventilation if symptoms of overexposure occur as explained Section 11. A respirator is not normally required.

Eye Protection:
Wear chemical splash goggles when handling this product. Have an eye wash station available.

Skin Protection:
Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

Gloves:
Nitrile

Section 9 Physical Data

Formula: See Section 3
Molecular Weight: 60.05
Appearance: Colorless Liquid
Odor: Moderate Vinegar
Odor Threshold: No data available
pH: 2.8
Melting Point: Estimated 0 C
Boiling Point: Estimated 100 C
Flash Point: No data available
Flammable Limits in Air: No data available

Reactivity Data

Reactivity: Not generally reactive under normal conditions.
Chemical Stability: Stable under normal conditions.
Conditions to Avoid: None known. Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition.
Incompatible Materials: Water-reactive materials, Acetic anhydride, Acetaldehydes, Caustics (bases), Oxidizing materials, Halogens, Carbonates
Hazardous Polymerization: Will not occur

Section 11 Toxicity Data
Safety Data Sheet

Routes of Entry
Inhalation, ingestion, eye or skin contact.

Symptoms (Acute):
Impaired Kidney Function, Respiratory Irritation, Lachrymation

Delayed Effects:
No data available

Acute Toxicity:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>Oral LD50 Rat</td>
<td>90000 mg/kg</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>INHALATION</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LC50 MAMMAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11.4 GM/M3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>INHALATION</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LC50 Mouse 5620 ppm</td>
</tr>
<tr>
<td>Acetic Acid, Glacial</td>
<td>64-19-7</td>
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<td></td>
<td></td>
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</table>

Carcinogenicity:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid</td>
<td>64-19-7</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Chronic Effects:

| Mutagenicity: | No evidence of a mutagenic effect. |
| Teratogenicity: | No evidence of a teratogenic effect (birth defect). |
| Sensitization: | No evidence of a sensitization effect. |
| Reproductive: | No evidence of negative reproductive effects. |

Target Organ Effects:

| Acute: | Teeth |
| Chronic: | No information available |

Section 12  Ecological Data

Overview:
This material is not expected to be harmful to the ecology.

Mobility:
This material is expected to have high mobility in soil. It absorbs weakly to most soil types.

Persistence:
Biodegradation

Bioaccumulation:
Bioconcentration is not expected to occur.

Degradability:
Biodegrades quickly.

Other Adverse Effects:
No data

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>Eco Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>No data available</td>
</tr>
<tr>
<td>Acetic Acid, Glacial</td>
<td>64-19-7</td>
<td>Aquatic LC50 (96h) Fathead Minnow 79 MG/L Aquatic EC50 (24h) Daphnia 47 MG/L</td>
</tr>
</tbody>
</table>

Section 13  Disposal Information

Disposal Methods:
Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.

Waste Disposal Code(s):
Not Determined

Section 14  Transport Information

Ground - DOT Proper Shipping Name:
Not regulated for transport by US DOT.

Air - IATA Proper Shipping Name:
Not regulated for air transport by IATA.

Section 15  Regulatory Information

TSCA Status:
All components in this product are on the TSCA Inventory.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS Number</th>
<th>§ 313 Name</th>
<th>§ 304 RQ</th>
<th>CERCLA RQ</th>
<th>§ 302 TPQ</th>
<th>CAA 112(2) TQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic Acid, Glacial</td>
<td>64-19-7</td>
<td>No</td>
<td>5000 lb RQ</td>
<td>5000 lb final RQ (2270 kg)</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Acetic Acid, 0.166M
The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

Glossary

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstract Service Number</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act</td>
</tr>
<tr>
<td>DOT</td>
<td>U.S. Department of Transportation</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>N/A</td>
<td>Not Available</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>ppm</td>
<td>Parts per million</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
</tr>
<tr>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act</td>
</tr>
<tr>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>TSCA</td>
<td>Toxic Substances Control Act</td>
</tr>
<tr>
<td>IDLH</td>
<td>Immediately dangerous to life and health</td>
</tr>
</tbody>
</table>