1. Identification

Product Name: Formic Acid 95%
Synonyms: Formylc Acid, Aminic acid, Hydrogen carboxylic acid

Recommended Use: N/A

Manufacturer/Supplier:
Avantik Biogroup
32 Commerce Street
Springfield, NJ 07081
1-888-392-8411

Item #:

Restrictions on Use: N/A

In Case of Emergency:
Chemtrec US 1-800-424-9300
Chemtrec International 703-527-3887

2. Hazards Identification

OSHA Hazard Classification(s):
- Acute Toxicity - Oral - Category 4
- Acute Toxicity - Inhalation - Category 3
- Skin Corrosion - Category 1A
- Eye Damage - Category 1
- Specific Target Organ Toxicity (repeated exposure) - Category 2
- Flammable Liquids - Category 3

Signal Word: Danger

Hazard Statement(s): Harmful if swallowed. Toxic if inhaled. Causes severe skin burns and eye damage. Causes serious eye damage. May cause damage to organs (respiratory system) through prolonged or repeated exposure. Flammable liquid and vapor.

Pictogram(s):

Precautionary Statement(s): Prevention: Wash body thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid breathing dust, vapors. Use only outdoors or in a well-ventilated area. Do not breathe dusts or mists. Wear protective gloves, protective clothing, eye protection and face protection. Wear eye protection, face protection. Do not breathe dust, vapors. Keep away from heat sources and open flame. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical, ventilating, lighting and equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

Response: If swallowed: Call a doctor if you feel unwell. Rinse mouth. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a doctor. Specific treatment (see first aid section on this label). If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Take off all contaminated clothing and wash it before reuse. Immediately call a doctor. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue Rinsing. Call a doctor if you feel unwell. In case of fire: Use water, dry chemical, CO2 or foam to extinguish.


Disposal: Dispose of contents/container in accordance with local regulations.

Descriptions of Hazards not otherwise classified: N/A
Percent of mixture with unknown acute toxicity: N/A

3. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Common Name</th>
<th>CAS #</th>
<th>Concentration %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formic Acid</td>
<td></td>
<td>64-18-6</td>
<td>95</td>
</tr>
</tbody>
</table>

4. First Aid Measures
Formic Acid 95%

**Eye Contact:** If in eyes: Immediately 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 (or hair): Take off immediately all contaminated clothing and wash before reuse. Wash with plenty of water. If skin irritation occurs: Get medical advice/attention.

**Inhalation:** Remove to fresh air; give artificial respiration if breathing has stopped. Get medical advice/attention if you feel unwell.

**Ingestion:** Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

**Symptoms:** Irritation of eyes, skin, throat; skin burns, blisters, dermatitis; lacrimation; rhinorrhea; cough, dyspnea; nausea; eye redness, pain, burns, blurred vision; pulmonary edema; metabolic acidosis; unconsciousness; INGES. ACUTE: Burning sensation, sore throat, abdominal pain, cramps, vomiting, diarrhea

**Recommendations for immediate medical care/special treatment:** Get medical advice/attention if you feel unwell.

5. **Fire-Fighting Measures**

**Extinguishing Media:** Dry chemical, carbon dioxide, alcohol foam, water. Use water spray to cool fire-exposed containers and disperse vapors.

**Fire Hazards (Chemical):** OSHA classified Flammable Liquid

**Special Protective Equipment:** Fire fighters should use self-contained breathing apparatus and protective clothing.

**Precautions for Firefighters:** Carbon monoxide and unidentified organic compounds may be formed during combustion. Vapors can travel distances to ignition source and flash back. Cool fire exposed containers with water. Fine mist or spray may be flammable at temperatures below the flash point. When heated above the flash point this material emits flammable vapors which, when mixed with air, can burn or be explosive.

6. **Accidental Release Measures**

**Emergency Procedures:** Evacuate the area of all unnecessary personnel. Wear suitable protective equipment. Eliminate all sources of ignition and provide ventilation.

**Protective Equipment:** See section 8

**Environmental Precautions:** Prevent release to the environment by using barriers.

**Containment and Clean-Up Procedures:** Use barriers to prevent spreading. Collect spill in container. Call waste authorities.

7. **Handling and Storage**

**Handling:** Do not breathe vapors. Do not eat, drink or smoke when using this product. Keep away from heat, sparks, open flames, hot surfaces. Keep container tightly closed. Ground/Bond container and receiving equipment. Use explosion-proof electrical, ventilating, and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

**Storage:** Store in a well-ventilated place. Keep container tightly closed. Store locked up. Keep cool. Store away from heat, open flame and sources of ignition.

8. **Exposure Controls/Personal Protection**

**OSHA Permissible Exposure Limits (PELs):**

<table>
<thead>
<tr>
<th>Reagent</th>
<th>CAS #</th>
<th>OSHA PEL TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formic Acid</td>
<td>64-18-6</td>
<td>5 ppm, 9 mg/m3</td>
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</table>

**ACGIH Threshold Limit Values (TLVs):**

<table>
<thead>
<tr>
<th>Reagent</th>
<th>CAS #</th>
<th>ACGIH PEL TLV</th>
<th>ACGIH STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formic Acid</td>
<td>64-18-6</td>
<td>5 ppm, 9.4 mg/m3</td>
<td>10 ppm, 19 mg/m3</td>
</tr>
</tbody>
</table>

**Engineering Controls:** Use in a well ventilated area to prevent exposure. Maintain eyewash fountain and quick-drench facilities in work areas.

**Personal Protective Measures:** Wear gloves, lab coat, eye protection and impervious footwear. Contact lenses should not be worn when working with this material.

**Special PPE Requirements:** If ventilation hood not available wear respirator.
9. Physical and Chemical Properties Section

**Appearance:** Colorless, Liquid  
**Molecular Weight:** 46.03  
**Molecular Formula:** CH2O2  
**pH:** N/A  
**Boiling Point and Boiling Range:** 224°F  
**Melting Point/Freezing Point:** N/A  
**Flash Point:** 122°F  
**Specific Gravity/Relative Density:** 1.220  
**Odor:** N/A  
**Odor Threshold:** N/A  
**Color:** Colorless  
**Flammability (solid/gas):** N/A  
**Vapor Density:** N/A  
**Upper/Lower flammability or explosive limits:** UEL: 57% (90% solution) LEL: 18% (90% solution)  
**Vapor Pressure:** N/A  
**Evaporation Rate:** N/A  
**Partition Coefficient:** n-octanol/water: N/A  
**Viscosity:** N/A  
**Auto-ignition temperature:** N/A  
**Solubility:** N/A  
**Decomposition Temperature:** N/A

10. Stability and Reactivity

**Reactivity:**

**Chemical Stability:** Stable  
**Conditions of Stability/Instability:** Exposure to heat, open flame and sources of ignition. Exothermic reaction occurs when combined with water.  
**Stabilizers needed:** None  
**Safety issue indicated by appearance change:** N/A  
**Other:** N/A  
**Hazardous Reactions:** N/A  
**Hazardous Polymerization:** Does not occur  
**Conditions to avoid:** Exposure to heat, open flame and sources of ignition. Mixing with small amounts of water.  
**Classes of Incompatible Materials:** Oxidizers, Strong Acids, Strong Bases  
**Hazardous Decomposition Products:** Thermal-oxidation degradation can produce oxides of carbon. Toxic gases and vapors (i.e., Carbon monoxide) may be released in a fire.

11. Toxicological Information

**Likely Routes of Exposure**
- **Eyes:** Corrosive liquid is will cause severe damage to the eyes. High vapor concentrations may also be irritating.
- **Skin:** Corrosive liquid will cause irritation with itching and local redness. Blisters may occur.
- **Inhalation:** Corrosive liquid will cause irritation and inflammation to mucous membranes. Dizziness may occur.
- **Ingestion:** Corrosive liquid is toxic, May cause headaches, dizziness, nausea and general weakness. Corrosive liquids will cause internal chemical burns in mouth, esophagus and stomach.

**Signs or Symptoms of Exposure:** Irritation of eyes, skin, throat; skin burns, blisters, dermatitis; lacrimation; rhinorrhea; cough, dyspnea; nausea; eye redness, pain, burns, blurred vision; pulmonary edema; metabolic acidosis; unconsciousness; INGES: ACUTE: Burning sensation, sore throat, abdominal pain, cramps, vomiting, diarrhea
Effects from short term exposure (delayed, immediate, chronic): Irritation to the eyes, nose, throat; headache, dizziness, nausea.

Acute Toxicity (Numerical Measures): Formic Acid: LD50(oral,mouse)=700 mg/kg; LC50(inhalation,mouse)=6200 mg/m3/15MLC50(inhalation,rat)=7400 mg/m3/4H

Carcinogenicity (NTP, IARC, OSHA): Not listed as a carcinogen.

12. Ecological Information

Ecotoxicity: Toxicity to fish: LC50-Leuciscus idus(Golden orfe)-46-100mg/l-96h Toxicity to daphnia and other aquatic invertebrates:EC50-Daphnia magna(Water flea)-34.2mg/l-48h Toxicity to bacteria:Pseudomonas putida-46.7mg/l-17h

Persistence and degradability: Biodegradability:Result:>90%-Readily biodegradable,

Bioaccumulation Potential (octanol-water partition coefficient, BCF): Bioaccumulation is unlikely Biochemical Oxygen Demand (BOD)=86mg/l Chemical Oxygen Demand (COD) 348mg/l

Mobility in the soil: N/A

Adverse Environmental Effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

13. Disposal Considerations

Recommended Disposal Containers: Check with your local waste authorities*

Recommended Disposal Methods: Do not dispose of in drains, check with your local waste authorities.*

Physical/Chemical Properties affecting Disposal: See section 2 and section 9 applicable information.*

Special Precautions for Landfill and Incineration Activities: Check with your local waste authorities.*

Waste Stream: Consult your local or regional authorities.*

14. Transport Information

UN Number: UN1779

UN Proper Shipping Name: Formic Acid

Transport Hazard Class(es): 8 (3)

Packing Group Number: II

Environmental Hazards (IMDG code):

Marine Pollutant: No

Transport in Bulk (IBC Code): N/A

Special Transport Precautions: N/A

15. Regulatory Information

OSHA:

DOT:

EPA:

CPSC:
16. Other Information

**NFPA**

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Health</td>
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</tr>
<tr>
<td>Fire Hazard</td>
<td>2</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
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<td>COR</td>
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**National Fire Protection Association (USA) NFPA**

- **Fire Hazard**
- **Health**
- **Reactivity**
- **Specific Hazard**

**HMIS**

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<tr>
<td>Physical Hazard</td>
<td>0</td>
</tr>
<tr>
<td>Personal Protection</td>
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**Hazardous Material Information System HMIS**

- **Health**
- **Flammability**
- **Physical Hazard**
- **Personal Protection**

**Notice to Reader:**

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