SAFETY DATA SHEET: AMMONIUM FORMATE

1. IDENTIFICATION

Product Name: AMMONIUM FORMATE
Synonyms: Formic acid ammonium salt
Formula and Formula Weight: CH5NO2  63.06
Integra numbers beginning with: A643.10
Recommended Use: Commercial/industrial use
Restrictions on Use: No information available

INTEGRA Chemical Company
1216 6th Ave N
Kent WA  98032
Phone: 253-479-7000

2. HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>OSHA Classification:</th>
<th>Hazard Category:</th>
<th>Hazard Statement:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>2</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Eye Damage/Irritation</td>
<td>2A</td>
<td>Causes serious eye irritation.</td>
</tr>
<tr>
<td>Specific Target Organ Toxicity (single exposure)</td>
<td>3</td>
<td>May cause respiratory irritation.</td>
</tr>
</tbody>
</table>

OSHA Classification: No information available

Hazard Category:

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<td>Causes serious eye irritation.</td>
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<td>May cause respiratory irritation.</td>
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</table>

Precautionary Statements

Prevention:
Use only outdoors or in a well-ventilated area. Avoid breathing dust, fume, gas, mist, vapors, spray.
Wash thoroughly after handling.
Wear eye protection, face protection. Wear protective gloves.

Response
If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice, attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
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.
Specific treatment (see first aid section on this label) Call a poison center, doctor if you feel unwell.
Take off contaminated clothing and wash it before reuse.

Storage
Store locked up. in a well ventilated place. Keep container tightly closed.

Disposal
Dispose of contents, container in accordance with all governmental regulations.

Hazard Not Otherwise Classified: No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Synonyms</th>
<th>CAS #</th>
<th>% Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium formate</td>
<td>Formic acid ammonium salt</td>
<td>00540-69-2</td>
<td>100</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

<table>
<thead>
<tr>
<th>Inhalation: Remove person to fresh air and keep comfortable for breathing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Contact: Flush eyes with water for at least 15 minutes. Remove contact lenses, if present and easy to do. If irritation persists, seek medical attention.</td>
</tr>
<tr>
<td>Skin Contact: Wash with soap and water. Seek medical attention if irritation develops.</td>
</tr>
<tr>
<td>Ingestion: If conscious, rinse mouth and give victim large amounts of water. Seek medical attention.</td>
</tr>
</tbody>
</table>

Additional notes: Symptoms and effects include skin, eye, respiratory irritation.

5. FIRE-FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Extinguishing Media: Use extinguishing media appropriate for surrounding fire.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Equipment and Precautions: Use water to cool nearby containers and structures. Wear full protective equipment, including suitable respiratory protection.</td>
</tr>
<tr>
<td>Specific Hazards: As with most organic solids, combustion is possible at elevated temperatures.</td>
</tr>
</tbody>
</table>

6. ACCIDENTAL RELEASE MEASURES

| Spill Procedures: Remove all potential ignition sources. Prevent spread of spill. Wear suitable protective equipment. Sweep or scoop into disposal container in a manner that minimizes dust dispersion. |

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7. HANDLING AND STORAGE

Incompatible Materials: Incompatible with strong acids and strong oxidizers.
Storage and Handling: Store locked up in a cool, dry, well-ventilated area away from incompatible materials. Keep containers tightly closed and protect them from physical damage. Deliquescent material. Protect from exposure to moisture and moist air.
  Use only outdoors or in a well-ventilated area. Avoid breathing dust, fume, gas, mist, vapors, spray.
  Wash thoroughly after handling.
  Wear eye protection, face protection. Wear protective gloves.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

OSHA & ACGIH Exposure Limits:
Ammonium formate None identified

Engineering Controls: Use adequate general or local exhaust ventilation to keep fume and/or dust levels as low as possible.
Respiratory Protection: If use generates annoying or irritating dusts, mists or vapors, use a NIOSH approved respirator with a particulate filter.
Skin/Eye Protective Equipment: Safety goggles, protective clothing and gloves appropriate for the risk of exposure.
Facilities storing or utilizing this material should have readily accessible eyewash stations and safety showers. Select respirators and other safety equipment in accordance with regulations and based upon the particular conditions of use and risk of exposure. Always use safe chemical-handling and good industrial hygiene practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: White deliquescent crystals
Odor: Odorless
Odor Threshold: Not available
pH: 5.5 - 7.5 for a 63% solution at 25°C
Melting/Freezing Point: 116 °C
Initial Boiling Point and Boiling Range: Not available
Flash Point: Not available
Evaporation Rate: Not available
Flammability: Not available
Flammable or Explosive Upper: Not available Lower: Not available
Vapor Pressure: Not available
Vapor Density: Not available
Relative Density: 1.27 g/cc
Solubility: Soluble in water
Partition Coefficient: n-octanol/water Not available
Auto-Ignition Temperature: Not available
Decomposition Temperature: 180
Viscosity: Not available

10. STABILITY AND REACTIVITY

Reactivity: No information available
Stability: Stable
Possibility of Hazardous Reactions: Hazardous polymerization will not occur
Conditions to Avoid: Heat and moisture.
Incompatibles: Incompatible with strong acids and strong oxidizers.

11. TOXICOLOGICAL INFORMATION

Effects of Over Exposure:
Inhalation: Inhalation may irritate the nose, throat and upper respiratory tract.
Skin Contact: Contact may cause skin irritation.
Eye Contact: Contact may be irritating to the eyes.
Ingestion: Low in toxicity, however, ingestion may irritate the gastrointestinal system.
Chronic Effects: None identified
Target Organs: None identified
Additional Effects: None identified
Reproductive Effects: None identified
Carcinogenicity: None identified
Toxicity Data:
Ammonium formate LD50 (oral, mouse) 2250 mg/kg

12. ECOLOGICAL INFORMATION

Aquatic Toxicity Data: Terrestrial Toxicity Data:
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<table>
<thead>
<tr>
<th></th>
<th>Aquatic Toxicity Data</th>
<th>Terrestrial Toxicity Data</th>
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</thead>
<tbody>
<tr>
<td>Ammonium formate</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Mobility in soil</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Other adverse effects</td>
<td>No information available</td>
<td>No information available</td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS

Disposal Procedures: Dispose of material and containers in accordance with all local, state and federal regulations.

14. TRANSPORTATION INFORMATION

This product is not a regulated material for domestic ground transportation.

- Environmental hazards: No information available
- Special precautions: No information available
- Bulk transport: No information available

15. REGULATORY INFORMATION

Ammonium formate is listed in the TSCA inventory.

16. OTHER INFORMATION

OSHA SDS #: 25117 rev 101 3/27/2015

NE = Not established, NA = Not applicable or Not available

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***** END OF SDS *****