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## Section 4 - First Aid Measures

### The First-aid Information :

- **Inhalation :**
  1. The compound is combustible. Take appropriate measures (e.g. remove ignition source).
  2. Remove from exposure and move to fresh air immediately.
  3. Seek medical attention immediately.
- **Skin Contact :**
  1. Immediately remove contaminated clothing, shoes, and leather products (e.g. watch, leather belt).
  2. Immediately wipe off or absorb the chemical. Flush skin with plenty of water (and soap if available).
- **Eye Contact :**
  1. Immediately wipe off or absorb the chemical.
  2. Immediately hold eyelids apart and flush eyes with warm water for at least 5 minutes or until the substance is eliminated.
  3. Get medical attention immediately.
- **Ingestion :**
  1. Never give anything by mouth if the person is losing consciousness or unconscious, or having cramp.
  2. Do NOT induce vomiting.
  3. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.
  4. If vomiting occurs spontaneously, makes the patient lean forward, avoid inhaling vomitus. Rinse mouth and give water continuously.

The Most Important Symptoms and Hazardous Effects : Vapors may cause irritation of eye, skin, and mucous membrane. High concentration may cause anesthesia.

Protection of First-aiders : Wear Class C equipment to do first aid in a safety zone.

Notes to a Physician : --

## Section 5 - Fire Fighting Measures

Extinguishing Media : CO<sub>2</sub>, dry chemical powder, foam, water spray

Specific Hazards when Fire-fight : Stop leak if safe to do so. If not, let the fire burn itself out only if there is no danger.

Specific Fire-fighting Procedure :

1. Move the undamaged containers from fire area if safe to do so.
2. It may be ineffective to extinguish the fire with water. Water spray may be used to cool containers exposed to fire.
3. If materials not caught on fire, use water spray to reduce vapors and protect people who try to stop leak.
4. For fires in cargo or storage are, cool containers with water from unmanned hose holder or monitor nozzles. If this is impossible, withdraw immediately and let the fire burn out.
5. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire.
6. Firefighters should wear a self-contained breathing apparatus in pressure demand and full chemical protective suit.



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7. Do not entry unless wear specific protective gears.

### Specific Protection of Firefighters :

1. As in any fire, wear a self-contained breathing apparatus in pressure demand, MSHA/NIOSH (approved or equivalent), and full chemical protective suit.
2. If necessary, may cover a spark-proof coat on the protective suit.

### Section 6 - Accidental Release Measures

#### Personal Precautions :

1. Restrict access to area until completion of clean up.
2. Ensure clean up is conducted by trained personnel only.
3. Wear proper personal protection gears.

#### Environmental Precautions :

1. Ventilate area of leak or spill.
2. Remove all sources of ignition.
3. Notify the occupational safety health unit or environmental protection unit.

#### Methods for Cleaning up :

1. Avoid contact with spills.
2. Prevent from entering sewers or confined space.
3. If safe to do so, stop or reduce spills.
4. Absorb or dike spill with sand or other inert, stable, and non-flammable materials.
5. Small spills: absorb spill with inert materials. Seal in suitable containers for disposal.
6. Small amounts of residue may be flushed with plenty of water.
7. Large spills: contact the fire department, emergency management agency, or the suppliers immediately.

### Section 7 - Handling and Storage

#### Handling :

1. This chemical is combustible and toxic liquid. Engineering measures should be running while handling.
2. The staff should receive proper training and inform the risk and safety handling method.
3. Keep away from heat or any source of ignition.
4. Keep away from any incompatibles.
5. Prohibit smoking in work and storage area.
6. Ground and bond containers when transferring.
7. Empty tanks, containers, and pipes may have hazardous residue. Never weld, cut, or drill before clean-up.
8. Use spark-free tools and explosion proof equipment.
9. Avoid producing vapor and mist, operating in spark-proof and well-ventilated area only.
10. Handling amount of usage should be kept to a minimum.
11. Separate the working area and storage place.
12. Wear proper breathing apparatus/protective gloves/face protection if necessary.
13. Avoid contact with contaminated equipment.
14. Keep away from any incompatibles (such as oxidizing agents).
15. Do not pressurize air or inert gases to channel the liquid.
16. Do not allocate in the storage place unless in an isolated fireproof building.
17. Use approved containers and equipment to store flammable liquids.



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<p>18. Do not put contaminated liquids back to the container.</p> <p>19. Label the container, and keep the container closed while not use.</p>
<p><b>Storage :</b></p> <ol style="list-style-type: none"> <li>1. Unblock the exit routes.</li> <li>2. Consider install equipment to prevent fire and spilling.</li> <li>3. Keep a fire extinguisher and cleaning equipment nearby.</li> <li>4. Do not spill out during operation.</li> <li>5. Do not allocate in the storage place unless in an isolated fireproof building.</li> <li>6. Use approved containers and equipment to store flammable liquids.</li> <li>7. Do not put contaminated liquids back to the container.</li> <li>8. Label the container, and keep the container closed while not use.</li> <li>9. Store in a cool, dry, well-ventilated area, away from sunshine, heat sources, and incompatible substances.</li> <li>10. Ensure the storage in an isolated fireproof building.</li> <li>11. The flooring should be impermeable to the product.</li> <li>12. Make a threshold at the door and build a slope or a groove in front of the door to enable the fluid leakage to be emitted to a safe place.</li> <li>13. Clearly labeled in the entrance of the storage place, no obstacle. Only allowed trained personnel access.</li> <li>14. Separate the working area and storage place. Away from the elevator and main entrance of the building/room.</li> <li>15. Keep MSDS, a fire extinguisher and cleaning equipment nearby.</li> <li>16. All equipment should be regularly checked and maintained.</li> <li>17. All containers should be regularly checked and maintained for the label and damage.</li> <li>18. Control the storage in a limited amount.</li> <li>19. Ground barrels that store the liquids.</li> <li>20. The barrels that store the flammable liquids should install the pressure reducing valve and vacuum relief valve.</li> <li>21. Store in the suggested temperature. If necessary, install temperature alarm.</li> <li>22. Avoid the indoor storage in large amount. Ensure the storage in an isolated fireproof building.</li> <li>23. Tanks should be placed on the floor with the bottom sealed preventing leak.</li> </ol>

## Section 8 - Exposure Controls & Personal Protection

<p><b>Engineering measures :</b></p> <ol style="list-style-type: none"> <li>1. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.</li> <li>2. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.</li> </ol>			
<p><b>Control parameters</b></p>			
TWA	STEL	Ceiling	Biological standards
<p><b>Personal protective equipment :</b></p> <ul style="list-style-type: none"> <li>■ <b>Respiratory Protection :</b> <ol style="list-style-type: none"> <li>1. Chemical respirator with organic vapor cartridges.</li> <li>2. Unknown concentration: Use an approved positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.</li> <li>3. Evacuation: Masks with organic vapor cartridges or survivair self-contained breathing</li> </ol> </li> </ul>			



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apparatus

- Hand Protection : Wear chemical impervious gloves
- Eye Protection : Wear chemical safety goggles/mask
- Skin and Body Protection : Wear protective clothing and boots

Hygiene measures :

1. Remove contaminated clothes, clean thoroughly before reuse or disposal. Must advise the danger to the laundry worker.
2. Smoking, eating, and drinking are prohibited in work area.
3. Wash hand thoroughly after handling this substance.
4. Maintain a clean work environment.

## Section 9 - Physical & Chemical Properties

Appearance : powder, fine crystalline	Odor : smelly, unpleasant odor.
Color : colorless or white	Melting Point: 345-348°C
pH value : --	Boiling point/boiling range : --
Flammability: --	Flash point : --
Decomposition temp : --	Test method : --
Auto ignition temp : 700°C	Explosion properties : 35g/m <sup>3</sup> (minimum)
Vapor pressure : --	Vapor density : 5.73
Density : 1.507	Solubility : --
log Kow : 1.66	Evaporation Rate : --

## Section 10 - Stability & Reactivity Data

Stability : stable under normal conditions
Possible hazardous reactions under specific conditions : --
Conditions to avoid : incompatibles, heat, oxidizing agents
Materials to avoid : oxidizing agents
Hazardous decomposition products : CO, displeasing and toxic vapors/gases, carbon dioxide

## Section 11 - Toxicological Information

Route of exposure : skin, inhalation, ingestion, eye
Symptoms : --
Immediate Toxicity : <ol style="list-style-type: none"><li>1. Skin : cause skin irritation</li><li>2. Inhalation : causes respiratory tract irritation</li><li>3. Eye : cause eye irritation</li><li>4. Ingestion : cause digestive tract/gastrointestinal tract irritation<ul style="list-style-type: none"><li>● LD<sub>50</sub>: 10400mg/Kg (RAT, ORAL)</li><li>● LC<sub>50</sub>: --</li></ul></li></ol>



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Specific effects : --

## Section 12 - Ecological Information

Ecotoxicology :

- LC<sub>50</sub>(fish) : 145-295mg/l/96H
- EC<sub>50</sub>(Aquatic Invertebrates) : --
- Bioconcentration factor (BCF) : --

Persistence and degradability :

- Half-Life (Air) : --
- Half-Life (Water surface) : --
- Half-Life (Groundwater) : --
- Half-Life (Soil) : --

Bioaccumulative potential : --

Mobility in soil : --

Other adverse effects : --

## Section 13 - Disposal Considerations

Methods of disposal :

1. Land treatment or burial (sanitary landfill) disposal practices. Prior to implementing land disposal of waste residue (including waste sludge), consult with environmental regulatory agencies for guidance on acceptable disposal practices.
2. Neutralization & discharge to sewer: Carefully dissolve in water and neutralize with dilute acetic acid. Flush to sewer with lots of water, regulations permitting or dispose of through a licensed contractor. Consider use of waste caustic for neutralizing plant acid wastes.

## Section 14 - MSDS Transport Information

UN classification number : --

Proper D.O.T Shipping Name : Isophthalic acid

Hazard Class : --

Packing Group : --

Marine pollution : --

Specific precautionary transport measures and conditions : --

## Section 15 - Regulatory Information

Regulations :

1. Labor Safety and Health Facilities Regulations
2. Toxic Chemical Substances Labeling and Safety Date Regulations
3. Permissible Exposure Limits of Hazardous Substances in the Work Environment
4. Road Traffic Safety Regulations
5. Industrial Waste Storage and Disposal Regulations
6. Hazardous Substance and Combustible High-pressure Gas Establishment Standards and Safety Management Regulations



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## Section 16 - Other Information

Literature references	1. CHEMINFO Data Bank, CCINFO CD, 2005-3 2. HAZARDTEXT Data Bank, TOMES PLUS CD, Vol. 65, 2005 3. RTECS Data Bank, TOMES PLUS CD, Vol. 65, 2005 4. HSDB Data Bank, TOMES PLUS CD, Vol. 65, 2005 5. Hazardous Substances Chinese Data Bank, EPA 6. ChemWatch Data Bank, 2005-1		
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