

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION INFORMATION

Product Name: AMMONIUM SULFATE

Manufacturer: ArcelorMittal USA Inc.
1 South Dearborn Street
Chicago, IL 60603-9888

Revised: 11/03/07

General Information: 219-391-3900 or
msdssupport@arcelormittal.com
Emergency Phone Number:

Synonym(s): Ammonium Hydrogen Sulfate
Dolamin
Mascagnite
Diammonium Sulfate
Sulfuric Acid – Diammonium Salt

CHEMTREC (Day or Night) 1-800-424-9300

2. COMPOSITION / INFORMATION ON INGREDIENTS

| COMPONENTS | CAS No. | Wt. % | OSHA PEL (mg/M3) | ACGIH TLV (mg/M3) | LD50 Species/Route |
|------------------|-----------|-------|---------------------|----------------------|--------------------------------|
| Ammonium Sulfate | 7783-20-2 | 99.8 | Not Established * | Not Established | 3000 mg/kg (rat/acute/oral) |

* OSHA's PEL for any nuisance dust not otherwise classified is 15 mg/m³ for total dust, 5 mg/m³ for respirable dust.

3. HAZARDS IDENTIFICATION

Potential Health Effects: Exposure of the eyes, skin, or respiratory tract to the dust can result in irritation. Inhalation of the dust may produce constriction of lung air passages. In animal studies, ammonium sulfate aerosols caused a slight decrease in lung function (i.e. pulmonary flow resistance compliance). Considered to be slightly toxic by the oral route. Large doses may increase secretion of urine and systemic ammonia poisoning. Ingestion can also result in irritation of the surface lining of the digestive tract. No known chronic effects are known.

This material contains trace amounts of pyridine (CAS No. 110-86-1). Pyridine vapor has a disagreeable odor and is a mild irritant to the eyes, skin, and mucous membranes. Long-term excessive exposure may cause systemic effects to the liver, kidney, and bone marrow. Exposure to pyridine vapors from this product is not normally of industrial hygiene significance.

Usual Route(s) of Entry: Inhalation

Medical Conditions Possibly Aggravated: In animal experiments, ammonium sulfate dust aggravated artificially induced emphysema. Individuals with chronic diseases or disorders should consult a physician regarding workplace exposure.

| | | | |
|------------------------|------|-----|------|
| | IARC | NTP | OSHA |
| Carcinogen References: | No | No | No |

4. FIRST AID MEASURES

Eye: Flush eyes with large amounts of water for at least 15 minutes. Seek medical attention promptly.

Skin: Flush exposed areas with large amounts of water. In case of chemical burns, cover area with sterile dry dressing. Seek medical attention.

Ingestion: Call Poison Control Center immediately. If conscious, dilute by administering one glass of water. Seek medical attention promptly. Do not induce vomiting.

Inhalation: Remove from excessive exposure levels. Seek medical attention. Give artificial respiration if breathing has stopped.

5. FIRE FIGHTING MEASURES

Fire Hazard: Strong oxidizer. Flammable and toxic gases will form at elevated temperature >280 ° C due to thermal decomposition (ammonia, sulfur oxides, nitrogen oxides).

Extinguishing Media: Small fires: Dry chemical, water spray or foam. Large fires: Water spray, fog or foam.

Unusual Fire and Explosion Hazards: If accidentally mixed with oxides like potassium chlorate, potassium nitrate or potassium nitrite, there is an explosion hazard during fire.

Fire Fighting Instructions: Wear self-contained breathing apparatus. Fire should be approached from upwind. Move containers from fire area if possible to do so without added risk. Do not use water directly on the material. If large amounts of combustible materials are involved, use water spray or fog in flooding amounts.

6. ACCIDENTAL RELEASE MEASURES

With clean shovel, place material into clean, dry container and cover. Move container from spill area.

This material can be recycled for further use, disposed of in an appropriately permitted waste landfill, or disposed of by other methods in accordance with local, state, and federal regulations.

7. HANDLING AND STORAGE

Should be handled in ways to minimize generation of airborne dust and to prevent spills. Maintain all surfaces as free as practical of accumulation of material. Do not smoke or consume food or beverage in the workplace. Wash hands before eating, drinking, or smoking and after handling. Change contaminated clothing before leaving work premises.

8. EXPOSURE CONTROLS PERSONAL PROTECTION

Engineering Controls (Ventilation, etc.): Ventilation should be adequate to maintain dust levels below the applicable exposure limit. Eyewash stations, sinks, or showers should be readily available.

Eye Protection: Use safety glasses and/or other protective eyewear as specified by a safety professional where risk of eye injury is present.

Skin Protection: Long-sleeved work clothing should be worn when working with this material. Gloves and protective clothing as specified by an industrial hygienist or safety professional are recommended in dusty atmospheres. Neoprene, nitrile, and polyvinyl chloride are examples of materials that have been reported to provide relatively good protection against penetration by this chemical. Exposed skin area should be washed thoroughly. Shower and change into clean clothing at the end of the work shift.

Respiratory Protection: When engineering controls are not feasible or sufficient to lower exposure levels below the applicable exposure limit, use a NIOSH-approved respirator which protects against dust and mists as specified by an industrial hygienist or qualified safety professional in accordance with manufacturer instructions and use limitations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Solubility in Water: Appreciable – 70g/100ml

Melting Point: Decomposes at 280°C

pH: 3.9 (10% Solution)

Specific Gravity: 1.7 @ 60 ° F

Appearance and Odor: Brown-gray to white crystals; slight ammonia odor

Boiling Point: Not Applicable

Vapor Pressure: Not Applicable

Vapor Density: Not Applicable

Flashpoint: Not Applicable

Evaporation Rate: Not Applicable

10. STABILITY AND REACTIVITY

Chemical Stability: Stable **Hazardous Polymerization:** Will not occur

Conditions to Avoid: Explodes when mixed with potassium and sodium-potassium alloys. May also explode when mixed with potassium chlorate, potassium nitrate, and potassium nitrite. Vigorous reaction with flame when mixed with potassium nitride.

Hazardous Decomposition Products: Ammonia, sulfur oxides, sulfuric acid, oxides of nitrogen and other possible gasses.

11. TOXICOLOGICAL INFORMATION

See available LD50 and/or LC50 information in Section 2.

12. ECOLOGICAL INFORMATION

In normal state, not expected to present an ecological impact to wildlife.

13. DISPOSAL CONSIDERATION

Recycle excess product when possible. Dispose of in an appropriately permitted waste landfill, or disposed of by other methods in accordance with local, state, and federal regulations.

14. REGULATORY INFORMATION

The following list of regulatory requirements relating to an ArcelorMittal USA Inc. product may not be complete and should not be solely relied on for all regulatory compliance responsibilities.

SARA Title III Hazard Categories: This material is considered, under applicable definitions, to meet the following categories:

- Immediate (acute) Health
- Reactive
- Delayed (chronic) Health
- Fire
- Sudden Release of Pressure

15. OTHER INFORMATION

The following label hazard ratings are recommended:

NFPA

| | |
|-----------------|------|
| Fire | 0 |
| Health | 1 |
| Reactivity | 0 |
| Specific Hazard | None |

DISCLAIMER: Our objective in sending this information is to help you protect the health and safety of your personnel and to comply with the OSHA Hazard Communication Standard and Title III of the Superfund Amendment and Reauthorization Act of 1986. This information is taken from sources or is based upon data believed to be reliable. ArcelorMittal USA Inc. makes no warranty as to the absolute correctness, completeness, or sufficiency of any of the foregoing, or that any additional or other measures may not be required under particular conditions. ARCELORMITTAL USA INC. MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY, ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING OR TRADE.

AMMONIUM SULFATE

Contains: Ammonium Sulfate (CAS 7783-20-2)



CAUTION

Hazards: Excessive exposure to dust may adversely affect the respiratory system.

Recommended Handling Procedures:

- Avoid creating excessive dust. Mechanical ventilation and/or personal protective equipment (i.e., eye protection, protective clothing, and NIOSH-approved respiratory protection) may be necessary during material handling or dust generating activities.
- Handle material to prevent spills.
- Wash hands before eating, drinking, or smoking and after handling.

Emergency Actions:

- Isolate area and deny any unnecessary entry.
- Fires should be approached from upwind as toxic gases can be formed in fires.
 - Use water spray or water flooding
 - Wear self-contained breathing apparatus and protective clothing to fight fires.
- Strong oxidizer. Explosion hazard if accidentally mixed with oxides like potassium chlorate, potassium nitrate or potassium nitrite.
- Stop leak if you can without additional risk.
- Small Wet spills – Take up with sand or other noncombustible absorbent material and place in sealed containers.
- Small Dry spills – With clean shovel, place material into clean, dry container and cover. Move container from spill area.
- Large spills – Dike far ahead of spill for later reclaim or disposal.
- Follow all recommended handling procedures.

FIRST AID AND MEDICAL EMERGENCY PROCEDURES

Eye Contact: Wash thoroughly with large amounts of water for at least 15 minutes. Seek medical attention.

Skin Contact: Flush exposed areas with large amounts of water. In case of chemical burns, cover area with sterile dry dressing. Seek Medical Attention.

Inhalation: Remove from excessive exposure levels. Seek medical attention. Give artificial respiration if breathing has stopped.

Ingestion: Call Poison Control Center immediately. If conscious, dilute by administering one glass of water. Seek medical attention promptly. Do not induce vomiting.

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For more detailed health and safety information, read the Material Safety Data Sheet (MSDS) for this product.

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