



LABORATORY CHEMICALS AND CONSUMABLES

MATERIAL SAFETY DATA SHEET

AMMONIUM NITRATE

1. Chemical Product and Company information.

Product name: Ammonium Nitrate

Contact Information:

Radchem cc
PO Box 166982
Brackendowns
Alberton 1454
Telephone : **011 867 3726 / 2864**

Emergency Telephone Numbers:

2. Hazard Identification

Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation (lung irritant). Slightly hazardous in case of skin contact (permeator). Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation.

3. Composition / information on ingredients

CAS #: 6484-52-2

Synonym: Ammonium Saltpeter; Nitric acid, ammonium salt

Chemical Name: Ammonium Nitrate

Chemical Formula: NH_4NO_3

4. First Aid Measures

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact: In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial



cream. Seek medical attention.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

5. Fire-fighting measures

Flammability of the Product: May be combustible at high temperature.

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of heat, of combustible materials, of organic materials. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances: Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of heat, of combustible materials, of organic materials, of metals.

Fire Fighting Media and Instructions: Oxidizing material. Do not use water jet. Use flooding quantities of water. Avoid contact with organic materials.

Special Remarks on Fire Hazards: Caution: Strong Oxidizer. Contact with material may cause a fire. Contact with combustible or organic materials may cause fire.

Special Remarks on Explosion Hazards: It is an oxidizing agent and can self-ignite/detonate when in contact with powdered metals and some organic materials such as Urea and Acetic Acid.

6. Accidental release measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill: Oxidizing material. Stop leak if without risk. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal.

7. Handling and storage

Precautions: Keep away from heat. Keep away from sources of ignition. Keep away from combustible material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalis, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers.

8. Exposure controls/personal protection

Engineering Controls: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.



Personal Protection: Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

9. Physical and chemical properties

Physical state and appearance: Solid. (white granular solid. Deliquescent solid.)

Odour: Odourless

Taste: Not available.

Colour: Not available

Boiling Point: Decomposition temperature: 210°C (410°F)

Melting Point: 169.6°C

Critical Temperature: Not available.

Specific Gravity: 1.725 (Water = 1)

Vapour Density: Not applicable.

Volatility: Not available.

Odour Threshold: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, acetone.

Solubility: Easily soluble in cold water, hot water. Soluble in acetone. Partially soluble in methanol. Insoluble in diethyl ether.

10. Stability and reactivity

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials

Incompatibility with various substances: Reactive with reducing agents, combustible materials, organic materials, metals, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Also incompatible with finely powdered metals (aluminum, copper, chromium, iron, zinc brass, nickel, lead, manganese, magnesium, antimony), acetic acid, ammonium chloride, phosphorus, sodium perchlorate, sulfur, bismuth, cadmium, chlorides, cobalt, potassium and ammonium sulfate, sodium, sodium hypochlorite, sodium-potassium alloy, organic materials and combustible materials (paper, oil, charcoal, etc.)

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.



11. Toxicological information

Routes of Entry: Absorbed through skin. Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 2217 mg/kg [Rat].

Chronic Effects on Humans: Causes damage to the following organs: lungs, mucous membranes. May cause damage to the following organs: blood, gastrointestinal tract.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation (lung irritant). Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Carcinogenic effects: At this time, no studies were found on the possible carcinogenicity of Ammonium Nitrate in humans or experimental animals. However nitrates can be reduced to nitrites in the body, and the formed nitrites can subsequently react with amines to form suspect carcinogens N-nitrosamines. Genetic Effects: No genetic data was found for ammonium. However, in general, nitrates and nitrites are genotoxic. Reproductive Effects: There has been some association between consumption of nitrate-contaminated well water and birth defects, especially neural tube defects. However, these studies would not specifically implicate Ammonium Nitrate.

Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: Causes skin irritation. It may be absorbed through intact skin. Eyes: Causes eye irritation. Inhalation: Causes respiratory tract (nose, throat), and mucous membrane irritation. Symptoms may include: coughing, severe lung congestion, difficulty breathing. Inhalation of large amounts may cause systemic acidosis, Methemoglobinemia with symptoms similar to acute ingestion. Ingestion: Gastroenteritis with abdominal pain, nausea, vomiting, diarrhoea. Exposure to large amounts may affect behaviour/central nervous system, and blood and cause Methemoglobinemia, and systemic acidosis. Symptoms of Methemoglobinemia include cyanosis (blue lips, eyelids, earlobes, and skin), headache, fatigue, weakness, convulsions, dizziness, loss of coordination, nausea, vomiting, dyspnoea, and drowsiness. It may also affect the cardiovascular system and cause increased or decreased heart rate, and hypotension. Chronic Potential Health Effects: Ingestion: The toxicity of nitrates is due to in vivo conversion to nitrites. Chronic ingestion of more than 5 mg/kg/day is considered unacceptable. Primary overdose effects include orthostatic hypotension and Methemoglobinemia. Orthostatic hypotension, faintness, fatigue, weakness, depression, mental impairment, dizziness, shortness of breath, and reflex tachycardia are common; headache, nausea and vomiting may also occur. Chronic ingestion may also cause nephritis.

12. Ecological information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

13. Disposal considerations

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.



14. Transport information

DOT Classification: Not a DOT controlled material.

Identification: Not applicable.

Special Provisions for Transport: Not available.

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