

# Material Safety Data Sheet

## Ammonium cerium(IV) nitrate

ACC# 04380

### Section 1 - Chemical Product and Company Identification

**MSDS Name:** Ammonium cerium(IV) nitrate**Catalog Numbers:** AC201440000, AC201441000, AC201442500, AC423540000, AC423540250, AC423540500, AC423541000, AC423545000, C248-500**Synonyms:** Ceric ammonium nitrate; CAN.**Company Identification:**

Fisher Scientific  
1 Reagent Lane  
Fair Lawn, NJ 07410

**For information, call:** 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

### Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
16774-21-3	Ammonium cerium(IV) nitrate	98+	240-827-6

### Section 3 - Hazards Identification

#### EMERGENCY OVERVIEW

Appearance: orange crystalline powder.

**Danger!** Strong oxidizer. Contact with other material may cause a fire. Eye contact may result in permanent eye damage. Harmful if swallowed. Causes eye, skin, and respiratory tract irritation.**Target Organs:** Blood, respiratory system, eyes, skin.**Potential Health Effects****Eye:** Causes eye irritation. Risk of serious damage to eyes.**Skin:** Causes skin irritation. May be harmful if absorbed through the skin.**Ingestion:** Harmful if swallowed. May cause irritation of the digestive tract. Ingestion of nitrate containing compounds can lead to methemoglobinemia.**Inhalation:** Causes respiratory tract irritation. May be harmful if inhaled. Inhalation of high concentrations of ammonia vapors may cause shortness of breath, bronchospasm, chest pain and pulmonary edema which may be fatal.**Chronic:** May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shortness, cyanosis (bluish skin due to deficient oxygenation of

blood), rapid heart rate, unconsciousness and possible death.

## Section 4 - First Aid Measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:** Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cups of milk or water. Call a poison control center.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

**Notes to Physician:** Treat symptomatically and supportively.

## Section 5 - Fire Fighting Measures

**General Information:** As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Exposure to heat may promote violent decomposition. Strong oxidizer. Contact with other material may cause fire. Dangerous fire hazard in the form of dust when exposed to heat or flame.

**Extinguishing Media:** Use water spray, dry chemical, carbon dioxide, or chemical foam.

**Flash Point:** Not available.

**Autoignition Temperature:** Not available.

**Explosion Limits, Lower:** Not available.

**Upper:** Not available.

**NFPA Rating:** (estimated) Health: 2; Flammability: 1; Instability: 2; Special Hazard: OX

## Section 6 - Accidental Release Measures

**General Information:** Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:** Vacuum or sweep up material and place into a suitable disposal container. Wear a self-contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Avoid generating dusty conditions. Remove all sources of ignition. Use a spark-proof tool. Keep combustibles (wood, paper, oil, etc.,) away from spilled material. Do not let this chemical enter the environment.

## Section 7 - Handling and Storage

**Handling:** Minimize dust generation and accumulation. Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Keep away from heat, sparks and flame. Do not ingest or inhale. Use only in a chemical fume hood. Keep from contact with clothing and other combustible

materials.

**Storage:** Do not store near combustible materials. Store in a tightly closed container. Do not store in metal containers. Store in a cool, dry, well-ventilated location. Separate from combustible materials, halogens, sulfides, metals. See also NFPA 430, Code for the Storage of Liquid and Solid Oxidizers. Keep away from alkalis, oxidizable materials, finely divided metals, alcohols, and permanganates.

## Section 8 - Exposure Controls, Personal Protection

**Engineering Controls:** Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

### Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ammonium cerium(IV) nitrate	none listed	none listed	none listed

**OSHA Vacated PELs:** Ammonium cerium(IV) nitrate: No OSHA Vacated PELs are listed for this chemical.

### Personal Protective Equipment

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin:** Wear appropriate protective gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

## Section 9 - Physical and Chemical Properties

**Physical State:** Crystalline powder

**Appearance:** orange

**Odor:** slightly pungent

**pH:** 1 (50 g/L aq.sol.(20°C))

**Vapor Pressure:** Not available.

**Vapor Density:** Not available.

**Evaporation Rate:** Not available.

**Viscosity:** Not available.

**Boiling Point:** Not available.

**Freezing/Melting Point:** 107 - 108 deg C

**Decomposition Temperature:** > 185 deg C

**Solubility:** 1410 g/L @ (20°C)

**Specific Gravity/Density:** Not available.

**Molecular Formula:** Ce(NO<sub>3</sub>)<sub>4</sub>.2NH<sub>4</sub>NO<sub>3</sub>

**Molecular Weight:** 548.22

## Section 10 - Stability and Reactivity

**Chemical Stability:** Decomposes when heated. Stable, however, may violently decompose at temperatures above 175°C.

**Conditions to Avoid:** Incompatible materials, dust generation, excess heat, combustible materials, exposure to moist air or water, temperatures above 85°C.

**Incompatibilities with Other Materials:** Reducing agents, combustible materials, organic materials, finely powdered metals, bases, acids, Reactions with heavy metals may form explosive substances., cyanides, phosphorus, hypophosphites, tin chloride, isothiocyanates, thiocyanates.

**Hazardous Decomposition Products:** Nitrogen oxides (NO<sub>x</sub>) and ammonia (NH<sub>3</sub>), metallic oxides.

**Hazardous Polymerization:** Will not occur.

## Section 11 - Toxicological Information

**RTECS#:**

**CAS#** 16774-21-3 unlisted.

**LD50/LC50:**

Not available.

Oral Rat LD50: >200-2000mg/kg, Oral Rat LD50: 1600-3200mg/kg, Irritation eye rabbit: Severe irritation

**Carcinogenicity:**

CAS# 16774-21-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**Epidemiology:** No information available.

**Teratogenicity:** No information available.

**Reproductive Effects:** No information available.

**Mutagenicity:** No information available.

**Neurotoxicity:** No information available.

**Other Studies:**

## Section 12 - Ecological Information

**Ecotoxicity:** Daphnia: Water Flea: >100mg/L; 48Hrs.; No data available.

**Environmental:** Will not bio-accumulate.

**Physical:** No information available.

**Other:** Do not empty into drains.

## Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P-Series:** None listed.

**RCRA U-Series:** None listed.

## Section 14 - Transport Information

	US DOT	Canada TDG
<b>Shipping Name:</b>	NITRATES, INORGANIC, N.O.S.	NITRATES, INORGANIC NOS (AMMONIUM CERIUM NITRATE)
<b>Hazard Class:</b>	5.1	5.1
<b>UN Number:</b>	UN1477	UN1477
<b>Packing Group:</b>	II	II

## Section 15 - Regulatory Information

### US FEDERAL

#### TSCA

CAS# 16774-21-3 is listed on the TSCA inventory.

#### Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

#### Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

#### Section 12b

None of the chemicals are listed under TSCA Section 12b.

#### TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

#### CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

#### SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

#### SARA Codes

CAS # 16774-21-3: immediate, fire.

#### Section 313

This material contains Ammonium cerium(IV) nitrate (listed as Water Dissociable Nitrate Compounds), 98+%, (CAS# 16774-21-3) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

#### Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

#### Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

#### OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

#### STATE

CAS# 16774-21-3 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

### California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

## European/International Regulations

### European Labeling in Accordance with EC Directives

#### Hazard Symbols:

XN O

#### Risk Phrases:

- R 22 Harmful if swallowed.
- R 36/37/38 Irritating to eyes, respiratory system and skin.
- R 41 Risk of serious damage to eyes.
- R 8 Contact with combustible material may cause fire.

#### Safety Phrases:

- S 17 Keep away from combustible material.
- S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S 37/39 Wear suitable gloves and eye/face protection.

#### WGK (Water Danger/Protection)

CAS# 16774-21-3: 1

#### Canada - DSL/NDSL

CAS# 16774-21-3 is listed on Canada's DSL List.

#### Canada - WHMIS

This product has a WHMIS classification of C, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

#### Canadian Ingredient Disclosure List

CAS# 16774-21-3 is not listed on the Canadian Ingredient Disclosure List.

## Section 16 - Additional Information

**MSDS Creation Date:** 4/12/1999

**Revision #8 Date:** 10/19/2007

*The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.*