

# Cerium(III) ammonium nitrate tetrahydrate: sc-300333



The Power to Question

## MATERIAL SAFETY DATA SHEET

### 1 Identification of substance:

**Product Name:** Cerium(III) ammonium nitrate tetrahydrate

**Catalog Number:** sc-300333

**Supplier:** Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

**Emergency:** ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### 2 Hazards identification

Classification of the substance or mixture



GHS07

H315 Causes skin irritation.

H319 Causes serious eye irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC



Xi; Irritant

R36/38: Irritating to eyes and skin.



O; Oxidizing

R8: Contact with combustible material may cause fire.

Label elements

Labelling according to EU guidelines:

Code letter and hazard designation of product:

Xi Irritant

O Oxidizing

Risk phrases:

8 Contact with combustible material may cause fire.

36/38 Irritating to eyes and skin.

Safety phrases:

17 Keep away from combustible material.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Hazard description:

WHMIS classification



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	1
FIRE	0
REACTIVITY	2

Health (acute effects) = 1

Flammability = 0

Reactivity = 2

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

### 3 Composition/information on ingredients

**Chemical characterization: Substances**

**(CAS#) Description:**

Cerium (III) ammonium nitrate, tetrahydrate (CAS# 13083-04-0), 100%

### 4 First aid measures

**Description of first aid measures**

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing** Seek immediate medical advice.

### 5 Firefighting measures

**Extinguishing media**

**Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture**

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

In case of fire, the following can be released:

Nitrogen oxides (NOx)

**Advice for firefighters**

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

### 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.

**Methods and material for containment and cleaning up:** Pick up mechanically.

**Reference to other sections**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

### 7 Handling and storage

**Handling**

**Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

**Information about protection against explosions and fires:**

Substance/product can reduce the ignition temperature of flammable substances.

This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

**Conditions for safe storage, including any incompatibilities**

**Storage**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:**

Store away from flammable substances.

Store away from reducing agents.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

## 8 Exposure controls/personal protection

### Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

### Control parameters

Components with limit values that require monitoring at the workplace:

Additional information: No data

### Exposure controls

#### Personal protective equipment

#### General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

**Breathing equipment:** Use suitable respirator when high concentrations are present.

**Protection of hands:** Impervious gloves

**Eye protection:** Safety glasses

**Body protection:** Protective work clothing.

## 9 Physical and chemical properties

<b>Information on basic physical and chemical properties</b>	
<b>General Information</b>	
<b>Appearance:</b>	
<b>Form:</b>	Crystalline
<b>Color:</b>	Yellow Orange
<b>Odor:</b>	Mild
<b>Odour threshold:</b>	Not determined.
<b>pH-value:</b>	Not applicable.
<b>Change in condition</b>	
<b>Melting point/Melting range:</b>	Not determined
<b>Boiling point/Boiling range:</b>	Not determined
<b>Sublimation temperature / start:</b>	Not determined
<b>Flash point:</b>	Not applicable
<b>Flammability (solid, gaseous)</b>	Contact with combustible material may cause fire.
<b>Ignition temperature:</b>	Not determined
<b>Decomposition temperature:</b>	Not determined
<b>Auto igniting:</b>	Not determined.
<b>Explosion limits:</b>	
<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined
<b>Vapor pressure:</b>	Not applicable.
<b>Density:</b>	Not determined
<b>Relative density</b>	Not determined.
<b>Vapour density</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Soluble
<b>Segregation coefficient (n-octanol/water):</b> Not determined.	
<b>Viscosity:</b>	
<b>dynamic:</b>	Not applicable.
<b>kinematic:</b>	Not applicable.
<b>Molecular Formula:</b>	$CeH_8N_7O_{19} \cdot 4H_2O$
<b>Molecular Weight:</b>	558.28

## 10 Stability and reactivity

### Reactivity

#### Chemical stability

#### Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

#### Possibility of hazardous reactions

Reacts with reducing agents

Reacts with flammable substances

#### Incompatible materials:

Reducing agents, easily oxidized materials

Organic materials

**Hazardous decomposition products:** Nitrogen oxides (NOx)

## 11 Toxicological information

### Information on toxicological effects

#### Acute toxicity:

#### Primary irritant effect:

**on the skin:** Irritant to skin and mucous membranes.

**on the eye:** Irritating effect.

**Sensitization:** No sensitizing effects known.

#### Subacute to chronic toxicity:

Cerium salts increase the blood coagulation rate. Exposure to cerium salts may increase sensitivity to heat, itching and skin lesions. Large doses to experimental animals have caused writhing, ataxia, labored respiration, sedation, hypotension and death by cardiovascular collapse.

Small doses of nitrates may cause weakness, general depression, headache and mental impairment. Larger doses may cause dizziness, abdominal cramps, vomiting, bloody diarrhea, convulsions and collapse.

#### Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

## 12 Ecological information

### Toxicity

**Acquatic toxicity:** No further relevant information available.

**Persistence and degradability** No further relevant information available.

#### Behavior in environmental systems:

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

#### Additional ecological information:

##### General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

#### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

## 13 Disposal considerations

### Waste treatment methods

**Recommendation** Consult state, local or national regulations to ensure proper disposal.

#### Uncleaned packagings:

**Recommendation:** Disposal must be made according to official regulations.

**Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

### DOT regulations:



**Hazard class:** 5.1  
**Identification number:** UN1477  
**Packing group:** III  
**Proper shipping name (technical name):** NITRATES, INORGANIC, N.O.S. (Cerium (III) ammonium nitrate)  
**Label:** 5.1

### Land transport ADR/RID (cross-border)



**ADR/RID class:** 5.1 (O2) Oxidizing substances  
**Danger code (Kemler):** 50  
**UN-Number:** 1477  
**Packaging group:** III  
**UN proper shipping name:** 1477 NITRATES, INORGANIC, N.O.S. (Cerium (III) ammonium nitrate)

### Maritime transport IMDG:



**IMDG Class:** 5.1  
**UN Number:** 1477  
**Label:** 5.1  
**Packaging group:** III  
**Marine pollutant:** No  
**Proper shipping name:** NITRATES, INORGANIC, N.O.S. (Cerium (III) ammonium nitrate)

### Air transport ICAO-TI and IATA-DGR:



**ICAO/IATA Class:** 5.1  
**UN/ID Number:** 1477  
**Label:** 5.1  
**Packaging group:** III  
**Proper shipping name:** NITRATES, INORGANIC, N.O.S. (Cerium (III) ammonium nitrate)

**UN "Model Regulation":** UN1477, NITRATES, INORGANIC, N.O.S., 5.1, III

**Special precautions for user** Warning: Oxidizing substances

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

## 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Product related hazard informations:**

**Hazard symbols:**

Xi Irritant  
O Oxidizing

**Risk phrases:**

8 Contact with combustible material may cause fire.  
36/38 Irritating to eyes and skin.

**Safety phrases:**

17 Keep away from combustible material.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

**Information about limitation of use:** For use only by technically qualified individuals.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information:**

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.

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