

# SAFETY DATA SHEET

Revision Date 6.2.2023

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## 1. Product name and details of the supplier of the safety datasheet

**Product name** : Ammonium cerium(IV) nitrate

**Company** : Chikamochi Pure Chemical Co., Ltd.  
1-9-16 Ohyodominami , Kita-ku,  
Osaka, 531-0075  
JAPAN

**Telephone** : +81(0)6 6453-2062

**Fax** : +81(0)6 6453-2063

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## 2. HAZARDS IDENTIFICATION

### 【GHS Classification】

Oxidizing solids (Category 2), H272  
Corrosive to Metals (Category 1), H290  
Acute toxicity, Oral (Category 4), H302  
Skin corrosion (Sub-category 1B), H314  
Serious eye damage (Category 1), H318  
Skin sensitization (Sub-category 1A), H317

### 【GHS Label elements, including precautionary statements】

Pictogram or Symbol



Signal word : Danger

Hazard statement(s)

H272

May intensify fire; oxidizer

H300 + H330	Fatal if swallowed or if inhaled.
H411	Toxic to aquatic life with long lasting effects.
H272	May intensify fire; oxidizer.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe dusts or mists.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all Contaminated clothing. Rinse skin with water.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
Supplemental Hazard Statements	none

【Other hazards】

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. Composition/information on ingredients

【Substances】

Synonyms	: Ceric ammonium nitrate
Formula	: $H_8CeN_8O_{18}$
Molecular weight	: 548.22 g/mol
CAS No	: 16774-21-3
EC-No.	: 240-827-6

Component	Classification	Concentration
<b>Ammonium cerium(IV) nitrate</b>		
	Ox. Sol. 2; Met. Corr. 1;	< = 100%

	Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Skin Sens. 1A;	
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#### 4. Description of first aid measures

**【General advice】**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**【If inhaled】**

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Consult a physician.

**【In case of skin contact】**

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**【In case of eye contact】**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**【If swallowed】**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**【Most important symptoms and effects, both acute and delayed】**

The most important known symptoms and effects are described in the labelling

#### 4.3 Indication of any immediate

**【Indication of any immediate medical attention and special treatment needed】**

No data available

#### 5. Firefighting measures

**【Suitable extinguishing media】**

Dry powder Dry sand.

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

Nitrogen oxides (NOx), cerium oxides

**【Advice for firefighters】**

Wear self-contained breathing apparatus for firefighting if necessary.

**【Further information】**

Use water spray to cool unopened containers.

#### 6. Accidental release measures

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

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or

gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**【Environmental precautions】**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**【Methods and materials for containment and cleaning up】**

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations. Keep in suitable, closed containers for disposal.

**【Reference to other sections】**

For disposal see section 13.

## **7. Handling and storage**

**【Precautions for safe handling】**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition – No smoking. Keep away from heat and sources of ignition.

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

Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

Store under inert gas. Hygroscopic

**【Specific end use(s)】**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## **8. Exposure controls/personal protection**

**【Exposure controls】**

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**【Personal protective equipment】**

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH(US) or EN166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100(US) or type P3(EN 143) respirator cartridge as a backup to engineering controls. If the respirator is the sole means of protection, Use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH(US) or CEN(EU).

#### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Discharge into the environment must be avoided.

## 9 . Physical and chemical properties

Appearance	Form: crystalline Color: orange
Odor	: slight
Odor Threshold	:No data available
pH	: 0,61 at 111,11 g/l at 20 °C
Melting point/freezing point	: Melting point/range: 214 °C - dec. Melting point: > 400 °C-OECD Test Guideline 102- Decomposes without melting.
Initial boiling point and boiling range	:No data available
Flash point	:Not data applicable
Evaporation rate	:No data available
Flammability (solid, gas)	: The product is not flammable. - Flammability (solids)
Upper/lower flammability or explosive limits	: No data available
Vapour pressure	: No data available
Vapour density	: No data available
Relative density	: 2,49 g/cm <sup>3</sup> at ca.24 °C
Water solubility	: 919 g/l at 20 °C - OECD Test Guideline 105
Auto-ignition temperature	: No data available
Decomposition temperature	: ca.214 °C -
Viscosity	: No data available
Explosive properties	: No data available
Oxidizing properties	: The substance or mixture is classified as oxidizing with the category 2.

## 1 0 . **Stability and reactivity**

### **【Reactivity】**

No data available

### **【Chemical stability】**

Stable under recommended storage conditions.

### **【Possibility of hazardous reactions】**

No data available

### **【Conditions to avoid】**

Avoid moisture.

### **【Incompatible materials】**

Strong reducing agents, Organic materials, Powdered metals

### **【Hazardous decomposition products】**

Hazardous decomposition products formed under fire conditions. - Nitrogen oxides (NO<sub>x</sub>), cerium oxides

Other decomposition products - No data available

## 1 1 . **Information on toxicological effects**

### **【Acute toxicity】**

LD50 Oral - Rat - male and female - > 300 - 2.000 mg/kg  
(OECD Test Guideline 420)

### **【Skin corrosion/irritation】**

Skin - Rabbit  
Result: Corrosive - 4 h  
(OECD Test Guideline 404)

### **【Serious eye damage/eye irritation】**

Eyes - Rabbit  
Result: Irreversible effects on the eye  
(OECD Test Guideline 405)

### **【Respiratory or skin sensitisation】**

Maximization Test - Guinea pig  
Result: positive  
(OECD Test Guideline 406) **【Germ cell mutagenicity】**

### **【Germ cell mutagenicity】**

Ames test  
Escherichia coli/Salmonella typhimurium  
Result: negative

### **【Carcinogenicity】**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is

identified as probable, possible or confirmed human carcinogen by IARC.

**【Reproductive toxicity】**

No data available

**【Specific target organ toxicity – single exposure】**

Acute oral toxicity - After swallowing: burns in mouth, throat, oesophagus and gastrointestinal tract.

Acute inhalation toxicity - mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract

**【Specific target organ toxicity – repeated exposure】**

No data available

**【Aspiration hazard】**

No data available

**【Additional Information】**

RTECS: Not available

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## 1 2 . Ecological information

**【Toxicity】**

Toxicity to fish

semi-static test LC50 - *Oncorhynchus mykiss*

(rainbow trout) - 0,53mg/l - 96 h(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

semi-static test EC50 - *Daphnia magna* (Water flea) - > 100 mg/l -48 h

(OECD Test Guideline 202)

Toxicity to algae

static test ErC50 - *Pseudokirchneriella subcapitata* (green algae) - 93mg/l - 72 h

(OECD Test Guideline 201)

Toxicity to bacteria

static test EC50 - activated sludge - > 1.000 mg/l - 3 h

(OECD Test Guideline 209)

**【Persistence and degradability】**

The methods for determining the biological degradability are not applicable to inorganic substances.

**【Bioaccumulative potential】**

No data available

**【Mobility in soil】**

No data available

**【Results of PBT and vPvB assessment】**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**【Other adverse effects】**

Very toxic to aquatic life with long lasting effects.

No data available

### 1 3 . Disposal considerations

**【Waste treatment methods】**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

**Contaminated packaging**

Dispose of as unused product.

### 1 4 . Transport information

**【UN number】**

ADR/RID: 1477

IMDG:1477

IATA-DGR:1477

**【UN proper shipping name】**

ADR/RID: NITRATES, INORGANIC, N.O.S.

IMDG: NITRATES, INORGANIC, N.O.S.

IATA-DGR: Nitrates, inorganic, n.o.s.

**【Transport hazard class(es)】**

ADR/RID: 5.1

IMDG: 5.1

IATA-DGR: 5.1

**【Packaging group】**

ADR/RID: II

IMDG: II

IATA-DGR: II

**【Environmental hazards】**

ADR/RID: yes

IMDG Marine pollutant: yes

IATA-DGR: no

**【Special precautions for user】**

No data available

### 1 5 . Regulatory information



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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

**【Chemical Safety Assessment】**

For this product a chemical safety assessment was not carried out

**1 6 . Other information**

**【Further information】**

Information contained in this material safety data sheet is offered without charge for use by technically qualified personnel at their discretion and risk. All statement, technical information and recommendations contained herein are based on tests and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed no warranty of any kind is made with respect thereto.

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