

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

**1.1 Product identifier**

Trade name **Cerium(III) chloride heptahydrate**

Stock number: A12947, L14999

CAS Number:  
18618-55-8

EC number:  
606-073-0

**1.2 Relevant identified uses of the substance or mixture and uses advised against.**

Identified use: SU24 Scientific research and development

**1.3 Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:**

Thermo Fisher (Kandel) GmbH  
Zeppelinstr. 7b  
76185 Karlsruhe / Germany  
Tel: +49 (0) 721 84007 280  
Fax: +49 (0) 721 84007 300  
Email: tech@alfa.com  
www.alfa.com

Informing department: Product safety Tel + +049 (0) 7275 988687-0

**1.4 Emergency telephone number:**

Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)  
Poison Information Center Mainz  
www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

**SECTION 2: Hazards identification**

**2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008

 GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

Other hazards that do not result in classification No information known.

**2.2 Label elements**

Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labelled according to the CLP regulation.

**Hazard pictograms**



GHS07

**Signal word** Warning

**Hazard statements**

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

**Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves / eye protection / face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**2.3 Other hazards**

**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

**SECTION 3: Composition/information on ingredients**

**3.1 Substances**

**CAS# Designation:**

18618-55-8 Cerium(III) chloride heptahydrate

Concentration: ≤100%

Identification number(s):

EC number: 606-073-0

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Seek immediate medical advice.

**After skin contact**

Instantly 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 doctor.

**After swallowing** Do not induce vomiting; instantly call for medical help.

**4.2 Most important symptoms and effects, both acute and delayed**

Causes skin irritation.

Causes serious eye irritation.

**4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**SECTION 5: Firefighting measures**

**5.1 Extinguishing media**

Suitable extinguishing agents Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

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

If this product is involved in a fire, the following can be released:

Hydrogen chloride (HCl)

Cerium oxide

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### 5.3 Advice for firefighters

#### Protective equipment:

Wear self-contained breathing apparatus.  
Wear full protective suit.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation.

**6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.

**6.3 Methods and material for containment and cleaning up:** Ensure adequate ventilation.

**Prevention of secondary hazards:** No special measures required.

### 6.4 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 information on disposal.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Handle under dry protective gas.  
Keep containers tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation/exhaustion at the workplace.  
**Information about protection against explosions and fires:** The product is not flammable

### 7.2 Conditions for safe storage, including any incompatibilities

**Storage**  
**Requirements to be met by storerooms and containers:** No special requirements.  
**Information about storage in one common storage facility:**

Store away from air.  
Store away from water.  
Store away from oxidising agents.

#### Further information about storage conditions:

Store under dry inert gas.  
This product is hygroscopic.  
This product is air sensitive.  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
Protect from humidity and keep away from water.  
**7.3 Specific end use(s)** No further relevant information available.

## SECTION 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.

### 8.1 Control parameters

#### Components with critical values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** No data

### 8.2 Exposure controls

#### Personal protective equipment

#### General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.  
Keep away from foodstuffs, beverages and food.  
Instantly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.  
Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use breathing protection with high concentrations.

#### Recommended filter device for short term use:

Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

#### Protection of hands:

Check protective gloves prior to each use for their proper condition.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Material of gloves** Nitrile rubber, NBR

**Penetration time of glove material (in minutes)** 480

**Glove thickness:** 0.11 mm

#### Eye protection:

Face protection  
Safety glasses with side shields / NIOSH (US) or EN 166(EU)

**Body protection:** Protective work clothing.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

#### Appearance:

**Form:** Crystalline  
**Odour:** Odourless  
**Odour threshold:** Not determined.

**pH-value:** Not applicable.

#### Change in condition

**Melting point/freezing point:** Not determined  
**Initial boiling point and boiling range:** Not determined  
**Sublimation temperature / start:** Not determined  
**Inflammability (solid, gaseous)** Not determined.  
**Ignition temperature:** Not determined  
**Decomposition temperature:** Not determined  
**Self-inflammability:** Not determined.

**Explosive properties:** Not determined.

#### Critical values for explosion:

**Lower:** Not determined  
**Upper:** Not determined  
**Steam pressure:** Not applicable.

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Density	Not determined
Relative density	Not determined.
Vapour density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with Water at 20 °C:	1000 g/l
Partition coefficient: n-octanol/water:	Not determined.
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
9.2 Other information	No further relevant information available.

### SECTION 10: Stability and reactivity

**10.1 Reactivity** No information known.  
**10.2 Chemical stability** Stable under recommended storage conditions.  
**Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.  
**10.3 Possibility of hazardous reactions** Reacts with strong oxidising agents  
**10.4 Conditions to avoid** No further relevant information available.  
**10.5 Incompatible materials:**  
 Air  
 Oxidising agents  
 Water/moisture  
**10.6 Hazardous decomposition products:**  
 Hydrogen chloride (HCl)  
 Cerium oxide

### SECTION 11: Toxicological information

**11.1 Information on toxicological effects**  
**Acute toxicity** The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.  
**LD/LC50 values that are relevant for classification:**  
 The following value/values refer to the anhydrous compound:

Oral LD50 2111 mg/kg (rat)

**Skin irritation or corrosion:**

Causes skin irritation.  
 Causes skin irritation.

**Eye irritation or corrosion:**

Causes serious eye irritation.  
 Causes serious eye irritation.

**Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

**Germ cell mutagenicity:** No effects known.

**Carcinogenicity:** EPA-I: Data are inadequate for an assessment of human carcinogenic potential.

**Reproductive toxicity:** No effects known.

**Specific target organ system toxicity - repeated exposure:** No effects known.

**Specific target organ system toxicity - single exposure:** May cause respiratory irritation.

**Aspiration hazard:** No effects known.

**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

### SECTION 12: Ecological information

**12.1 Toxicity**

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

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

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

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

**Additional ecological information:**

**General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water.

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

Avoid transfer into the environment.

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

### SECTION 13: Disposal considerations

**13.1 Waste treatment methods**

**Recommendation**

Hand over to disposers of hazardous waste.

Must be specially treated under adherence to official regulations.

Consult state, local or national regulations for proper disposal.

**Uncleaned packagings:**

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

### SECTION 14: Transport information

**UN-Number**

ADR, ADN, IMDG, IATA

Not applicable

**14.2 UN proper shipping name**

ADR, ADN, IMDG, IATA

Not applicable

**14.3 Transport hazard class(es)**

ADR, ADN, IMDG, IATA

Class

Not applicable

**Packing group**

ADR, IMDG, IATA

Not applicable

**14.5 Environmental hazards:**

Not applicable.

**14.6 Special precautions for user**

Not applicable.

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code** Not applicable.

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UN "Model Regulation": Not applicable

### SECTION 15: Regulatory information

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

**Australian Inventory of Chemical Substances** Substance is listed.

**Standard for the Uniform Scheduling of Medicines and Poisons** Substance is not listed.

**Directive 2012/18/EU**

**Named dangerous substances - ANNEX I** Substance is not listed.

**National regulations**

**Information about limitation of use:**

Employment restrictions concerning young persons must be observed.

For use only by technically qualified individuals.

**Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

**Other regulations, limitations and prohibitive regulations**

**ELINCS (European List of Notified Chemical Substances)** Substance is not listed.

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.** Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use)** Substance is not listed.

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

### SECTION 16: Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS:** Global Marketing Department

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety and Health Administration (USA)

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEL: Biological Exposure Limit

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3