

ACR42829

## Erbium(III) perchlorate, 40 wt.% solution in water

### SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**产品说明:**  
**Product Description:** 高氯酸铒溶液, 40%水溶液  
Erbium(III) perchlorate, 40 wt.% solution in water

**Cat No. :** 428290000; 428290050; 428290250  
**Molecular Formula** Cl3 Er O12

**Supplier**  
**UK entity/business name**  
Fisher Scientific UK  
Bishop Meadow Road,  
Loughborough, Leicestershire LE11 5RG, United Kingdom

**EU entity/business name**  
Thermo Fisher Scientific  
Janssen Pharmaceuticaaan 3a, 2440 Geel, Belgium

**Emergency Telephone Number** For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

**E-mail address** begel.sdsdesk@thermofisher.com

**Recommended Use** Laboratory chemicals.  
**Uses advised against** No Information available

### SECTION 2. HAZARD IDENTIFICATION

**Physical State**  
Liquid

**Appearance**  
No information available

**Odor**  
No information available

#### Emergency Overview

May cause fire or explosion; strong oxidizer. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

#### Classification of the substance or mixture

|  |            |
|--|------------|
| Oxidizing liquids                                  | Category 1 |
| Skin Corrosion/Irritation                          | Category 2 |
| Serious Eye Damage/Eye Irritation                  | Category 2 |
| Specific target organ toxicity - (single exposure) | Category 3 |

#### Label Elements



**Signal Word**

**Danger**

# SAFETY DATA SHEET

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**Hazard Statements**

H271 - May cause fire or explosion; strong oxidizer  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H335 - May cause respiratory irritation

**Precautionary Statements****Prevention**

P220 - Keep away from clothing and other combustible materials  
P221 - Take any precaution to avoid mixing with combustibles  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P271 - Use only outdoors or in a well-ventilated area  
P272 - Contaminated work clothing should not be allowed out of the workplace  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Response**

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P312 - Call a POISON CENTER or doctor if you feel unwell  
P370 + P380 + P375 - In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion  
P372 - Explosion risk in case of fire  
P380 - Evacuate area  
P362 + P364 - Take off contaminated clothing and wash it before reuse

**Storage**

P403 + P235 - Store in a well-ventilated place. Keep cool  
P404 - Store in a closed container

**Disposal**

P501 - Dispose of contents/ container to an approved waste disposal plant

**Physical and Chemical Hazards**

Oxidizing. Contact with combustible material may cause fire.

**Health Hazards**

Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation.

**Environmental hazards**

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

This product does not contain any known or suspected endocrine disruptors.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

| Component              | CAS No     | Weight % |
|------------------------|------------|----------|
| Water                  | 7732-18-5  | 60       |
| Erbium(3+) perchlorate | 14017-55-1 | 40       |

**SECTION 4. FIRST AID MEASURES****Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.

**Inhalation**

Remove to fresh air. Get medical attention. If not breathing, give artificial respiration.

**Ingestion**

Do NOT induce vomiting. Get medical attention.

# SAFETY DATA SHEET

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**Most important symptoms and effects**

No information available.

**Self-Protection of the First Aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

**Notes to Physician**

Treat symptomatically.

### SECTION 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Extinguishing media which must not be used for safety reasons**

No information available.

**Specific Hazards Arising from the Chemical**

May ignite combustibles (wood paper, oil, clothing, etc.). Oxidizer: Contact with combustible/organic material may cause fire.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions**

Ensure adequate ventilation. Use personal protective equipment as required.

**Environmental Precautions**

Should not be released into the environment. See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up**

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Sweep up and shovel into suitable containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

### SECTION 7. HANDLING AND STORAGE

**Handling**

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from clothing and other combustible materials.

**Storage**

Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store near combustible materials.

**Specific Use(s)**

Use in laboratories

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control Parameters**

# SAFETY DATA SHEET

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### Exposure Controls

#### Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

#### Personal protective equipment

**Eye Protection** Goggles (European standard - EN 166)

**Hand Protection** Protective gloves

| Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments        |
|----------------|-------------------|-----------------|-------------|-----------------------|
| Natural rubber | See manufacturers | -               | EN 374      | (minimum requirement) |
| Nitrile rubber | recommendations   |                 |             |                       |
| Neoprene       |                   |                 |             |                       |
| PVC            |                   |                 |             |                       |

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure

**Respiratory Protection** When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

**Large scale/emergency use** Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced  
**Recommended Filter type:** Particulates filter conforming to EN 143

**Small scale/Laboratory use** Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.  
**Recommended half mask:-** Particle filtering: EN149:2001  
 When RPE is used a face piece Fit Test should be conducted

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls** No information available.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Appearance

**Physical State** Liquid

**Odor** No information available

**Odor Threshold** No data available

**pH** No information available

**Melting Point/Range** No data available

**Softening Point** No data available

**Boiling Point/Range** No information available

**Flash Point** No information available

**Method -** No information available

**Evaporation Rate** No data available

**Flammability (solid,gas)** Not applicable Liquid

**SAFETY DATA SHEET****Erbium(III) perchlorate, 40 wt.% solution in water**

|  |                          |             |
|--|--------------------------|-------------|
| <b>Explosion Limits</b>                        | No data available        |             |
| <b>Vapor Pressure</b>                          | No data available        |             |
| <b>Vapor Density</b>                           | No data available        | (Air = 1.0) |
| <b>Specific Gravity / Density</b>              | 1.44                     |             |
| <b>Bulk Density</b>                            | Not applicable           | Liquid      |
| <b>Water Solubility</b>                        | No information available |             |
| <b>Solubility in other solvents</b>            | No information available |             |
| <b>Partition Coefficient (n-octanol/water)</b> |                          |             |
| <b>Autoignition Temperature</b>                | No data available        |             |
| <b>Decomposition Temperature</b>               | No data available        |             |
| <b>Viscosity</b>                               | No data available        |             |
| <b>Explosive Properties</b>                    | No information available |             |
| <b>Oxidizing Properties</b>                    | Oxidizer                 |             |
| <b>Molecular Formula</b>                       | Cl3 Er O12               |             |
| <b>Molecular Weight</b>                        | 465.61                   |             |

**SECTION 10. STABILITY AND REACTIVITY**

|   |  |
|---|--|
| <b>Stability</b>                        | Oxidizer: Contact with combustible/organic material may cause fire.    |
| <b>Hazardous Reactions</b>              | None under normal processing.  |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.                               |
| <b>Conditions to Avoid</b>              | Incompatible products. Excess heat. Combustible material.              |
| <b>Materials to avoid</b>               | Strong oxidizing agents. Strong reducing agents. Combustible material. |
| <b>Hazardous Decomposition Products</b> | None under normal use conditions.                                      |

**SECTION 11. TOXICOLOGICAL INFORMATION**

|                            |   |
|----------------------------|---|
| <b>Product Information</b> | No acute toxicity information is available for this product |
|----------------------------|---|

(a) acute toxicity;  
Toxicology data for the components

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-----------|-----------|-------------|-----------------|
| Water     | -         | -           | -               |

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;  
Respiratory No data available  
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available  
There are no known carcinogenic chemicals in this product

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|  |  |
|--|--|
| (g) reproductive toxicity;                 | No data available  |
| (h) STOT-single exposure;                  | Category 3   |
| Results / Target organs                    | Respiratory system   |
| (i) STOT-repeated exposure;                | No data available  |
| Target Organs                              | No information available.                                      |
| (j) aspiration hazard;                     | No data available  |
| Other Adverse Effects                      | The toxicological properties have not been fully investigated. |
| Symptoms / effects, both acute and delayed | No information available                                       |

## SECTION 12. ECOLOGICAL INFORMATION

|                                 |   |
|---------------------------------|---|
| Ecotoxicity effects             | Do not empty into drains.   |
| Persistence and Degradability   | No information available  |
| Bioaccumulative Potential       | No information available  |
| Mobility in soil                | No information available  |
| Endocrine Disruptor Information | This product does not contain any known or suspected endocrine disruptors |
| Persistent Organic Pollutant    | This product does not contain any known or suspected substance            |
| Ozone Depletion Potential       | This product does not contain any known or suspected substance            |

## SECTION 13. DISPOSAL CONSIDERATIONS

|                                     |  |
|-------------------------------------|--|
| Waste from Residues/Unused Products | Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations. |
| Contaminated Packaging              | Dispose of this container to hazardous or special waste collection point.  |
| Other Information                   | Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.  |

## SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

|                         |   |
|-------------------------|---|
| UN-No                   | UN3211  |
| Proper Shipping Name    | Perchlorates, inorganic, aqueous solution, n.o.s. |
| Technical Shipping Name | Erbium(II) perchlorate                            |
| Hazard Class            | 5.1   |
| Packing Group           | II  |

IMDG/IMO

**SAFETY DATA SHEET****Erbium(III) perchlorate, 40 wt.% solution in water**

**UN-No** UN3211  
**Proper Shipping Name** Perchlorates, inorganic, aqueous solution, n.o.s.  
**Technical Shipping Name** Erbium(II) perchlorate  
**Hazard Class** 5.1  
**Packing Group** II

**IATA**

**UN-No** UN3211  
**Proper Shipping Name** Perchlorates, inorganic, aqueous solution, n.o.s.  
**Technical Shipping Name** Erbium(II) perchlorate  
**Hazard Class** 5.1  
**Packing Group** II

**Special Precautions for User** No special precautions required

**SECTION 15. REGULATORY INFORMATION****International Inventories**

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

| Component              | The Inventory of Hazardous Chemicals (2015 Edition) | List of dangerous goods GB 12268 - 2012 | TCSI | IECSC | EINECS    | TSCA | DSL | PICCS | ENCS | ISHL | AICS | KECL     |
|------------------------|---|---|------|-------|-----------|------|-----|-------|------|------|------|----------|
| Water                  | -   | -                                       | X    | X     | 231-791-2 | X    | X   | X     | X    |      | X    | KE-35400 |
| Erbium(3+) perchlorate | -   | X                                       | X    | -     | 237-840-4 | -    | -   | -     | -    |      | -    | -        |

**National Regulations****SECTION 16. OTHER INFORMATION**

**Creation Date** 02-Oct-2009  
**Revision Date** 11-Apr-2024  
**Revision Summary** Not applicable.

**Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

**Legend**

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

# SAFETY DATA SHEET

## Erbium(III) perchlorate, 40 wt.% solution in water

**WEL** - Workplace Exposure Limit  
**ACGIH** - American Conference of Governmental Industrial Hygienists  
**DNEL** - Derived No Effect Level  
**RPE** - Respiratory Protective Equipment  
**LC50** - Lethal Concentration 50%  
**NOEC** - No Observed Effect Concentration  
**PBT** - Persistent, Bioaccumulative, Toxic

**TWA** - Time Weighted Average  
**IARC** - International Agency for Research on Cancer  
**PNEC** - Predicted No Effect Concentration  
**LD50** - Lethal Dose 50%  
**EC50** - Effective Concentration 50%  
**POW** - Partition coefficient Octanol:Water  
**vPvB** - very Persistent, very Bioaccumulative

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association  
**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road  
**OECD** - Organisation for Economic Co-operation and Development  
**BCF** - Bioconcentration factor

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code  
**MARPOL** - International Convention for the Prevention of Pollution from Ships  
**ATE** - Acute Toxicity Estimate  
**VOC** - (Volatile Organic Compound)

### Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>  
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

|                              |                       |
|------------------------------|-----------------------|
| <b>Physical hazards</b>      | On basis of test data |
| <b>Health Hazards</b>        | Calculation method    |
| <b>Environmental hazards</b> | Calculation method    |

### Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**