

ALFAA12896

## Gadolinium powder

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

**产品说明:** 钆粉, -40 目, 通常  
**Product Description:** Gadolinium powder

**Cat No. :** 12896  
**CAS No** 7440-54-2  
**Molecular Formula** Gd

**Supplier** Avocado Research Chemicals Ltd.  
(Part of Thermo Fisher Scientific)  
Shore Road, Heysham  
Lancashire, LA3 2XY,  
United Kingdom  
Office Tel: +44 (0) 1524 850506  
Office Fax: +44 (0) 1524 850608

**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

|                                               |                           |                                         |
|-----------------------------------------------|---------------------------|-----------------------------------------|
| <b>Physical State</b><br>Solid                | <b>Appearance</b><br>Grey | <b>Odor</b><br>No information available |
| <b>Emergency Overview</b><br>Flammable solid. |                           |                                         |

#### Classification of the substance or mixture

|                   |            |
|-------------------|------------|
| Flammable solids. | Category 1 |
|-------------------|------------|

#### Label Elements



**Signal Word**

**Danger**

#### Hazard Statements

H228 - Flammable solid

**Precautionary Statements****Prevention**

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P240 - Ground and bond container and receiving equipment

P280 - Wear protective gloves/protective clothing/eye protection/face protection

**Response**

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

**Storage**

P403 - Store in a well-ventilated place

**Disposal**

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

**Physical and Chemical Hazards**

Combustible material.

**Health Hazards**

The product contains no substances which at their given concentration are considered to be hazardous to health.

**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 % |
|------------|-----------|----------|
| Gadolinium | 7440-54-2 | <= 100   |

**SECTION 4. FIRST AID MEASURES****General Advice**

If symptoms persist, call a physician.

**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. If skin irritation persists, call a physician.

**Inhalation**

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

**Ingestion**

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

**Most important symptoms and effects**

None reasonably foreseeable.

**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**

Thermal decomposition can lead to release of irritating gases and vapors.

**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.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****Personal Precautions**

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

**Environmental Precautions**

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

**Methods for Containment and Clean Up**

Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed 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. Avoid dust formation.

**Storage**

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

**Specific Use(s)**

Use in laboratories

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control Parameters****Monitoring methods**

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

**Exposure Controls****Engineering Measures**

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**

Wear safety glasses with side shields (or goggles) (European standard - EN 166)

## Gadolinium powder

## Hand Protection

Protective gloves

| Glove material    | Breakthrough time                 | Glove thickness | EU standard | Glove comments        |
|-------------------|-----------------------------------|-----------------|-------------|-----------------------|
| Disposable gloves | See manufacturers recommendations | -               | EN 374      | (minimum requirement) |

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 compatability, 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

Long sleeved clothing

## 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

In case of insufficient ventilation, wear suitable respiratory equipment

## 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.  
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 StateGrey  
Solid

## Odor

No information available

## Odor Threshold

No data available

## pH

## Melting Point/Range

1312 °C / 2393.6 °F

## Softening Point

No data available

## Boiling Point/Range

3273 °C / 5923.4 °F

## Flash Point

No information available

Method - No information available

## Evaporation Rate

Not applicable

Solid

## Flammability (solid,gas)

No information available

## Explosion Limits

No data available

## Vapor Pressure

No data available

## Vapor Density

Not applicable

Solid

## Specific Gravity / Density

No data available 7.898 @ 25°C

## Bulk Density

No data available

## Water Solubility

No information available

## Solubility in other solvents

No information available

## Partition Coefficient (n-octanol/water)

## Autoignition Temperature

No data available

## Decomposition Temperature

No data available

## Viscosity

Not applicable

Solid

## Explosive Properties

No information available

## Oxidizing Properties

No information available

## Molecular Formula

Gd

## Molecular Weight

157.25

**SECTION 10. STABILITY AND REACTIVITY**

|                                 |                                 |
|---------------------------------|---------------------------------|
| <b>Stability</b>                | Stable under normal conditions. |
| <b>Hazardous Reactions</b>      | None under normal processing.   |
| <b>Hazardous Polymerization</b> | No information available.       |
| <b>Conditions to Avoid</b>      | None known.                     |
| <b>Materials to avoid</b>       | No information available.       |

**Hazardous Decomposition Products** None under normal use conditions.

**SECTION 11. TOXICOLOGICAL INFORMATION****Product Information**

|                                                   |                                                           |
|---------------------------------------------------|-----------------------------------------------------------|
| <b>(a) acute toxicity;</b>                        |                                                           |
| <b>(b) skin corrosion/irritation;</b>             | No data available                                         |
| <b>(c) serious eye damage/irritation;</b>         | No data available                                         |
| <b>(d) respiratory or skin sensitization;</b>     |                                                           |
| Respiratory                                       | No data available                                         |
| Skin                                              | No data available                                         |
| <b>(e) germ cell mutagenicity;</b>                | No data available                                         |
| <b>(f) carcinogenicity;</b>                       | No data available                                         |
|                                                   | There are no known carcinogenic chemicals in this product |
| <b>(g) reproductive toxicity;</b>                 | No data available                                         |
| <b>(h) STOT-single exposure;</b>                  | No data available                                         |
| <b>(i) STOT-repeated exposure;</b>                | No data available                                         |
| Target Organs                                     | No information available.                                 |
| <b>(j) aspiration hazard;</b>                     | Not applicable                                            |
|                                                   | Solid                                                     |
| <b>Symptoms / effects, both acute and delayed</b> | No information available                                  |

**SECTION 12. ECOLOGICAL INFORMATION**

|                            |                                                                                                                             |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Ecotoxicity effects</b> | Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants. |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------|

## Gadolinium powder

**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. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

**Other Information** Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations.

**SECTION 14. TRANSPORT INFORMATION****Road and Rail Transport**

**UN-No** UN3089  
**Proper Shipping Name** Metal powder, flammable, n.o.s.  
**Technical Shipping Name** Gadolinium powder  
**Hazard Class** 4.1  
**Packing Group** II

**IMDG/IMO**

**UN-No** UN3089  
**Proper Shipping Name** Metal powder, flammable, n.o.s.  
**Technical Shipping Name** Gadolinium powder  
**Hazard Class** 4.1  
**Packing Group** II

**IATA**

**UN-No** UN3089  
**Proper Shipping Name** Metal powder, flammable, n.o.s.  
**Technical Shipping Name** Gadolinium powder  
**Hazard Class** 4.1  
**Packing Group** II

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

**SECTION 15. REGULATORY INFORMATION**

## Gadolinium powder

## 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 | IECSC | EINECS    | TSCA | DSL | PICCS | ENCS | ISHL | AICS | KECL       |
|------------|-----------------------------------------------------|-----------------------------------------|-------|-----------|------|-----|-------|------|------|------|------------|
| Gadolinium | -                                                   | -                                       | -     | 231-162-2 | X    | -   | -     | X    |      | -    | KE-05-0661 |

## National Regulations

## SECTION 16. OTHER INFORMATION

**Prepared By** Health, Safety and Environmental Department  
**Revision Date** 24-Jul-2026  
**Revision Summary** Not applicable.

## Training Advice

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

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

**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, Chemadviser - LOLI, Merck index, RTECS

## Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the

**SAFETY DATA SHEET**

Gadolinium powder

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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**