

SAFETY DATA SHEET

Creation Date 09-April-2018

Revision Date 30-March-2024

Revision Number 3

1. Identification

Product Name Gadolinium foil

Cat No. : 55211

CAS-No 7440-54-2
Synonyms No information available

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet**Company****Importer/Distributor**

Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Emergency Telephone NumberFor information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11Emergency 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**2. Hazard(s) identification****Classification****WHMIS 2015 Classification**

Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

| | | |
|---|------------|--------------------|
| Flammable solids | Category 2 | |
| Substances/mixtures which, in contact with water, emit flammable gases | Category 1 | Gas(es) = Hydrogen |

Label Elements**Signal Word**

Danger

Hazard Statements

Flammable solid

In contact with water releases flammable gases which may ignite spontaneously

**Precautionary Statements****Prevention**

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

Do not allow contact with water

Ground/bond container and receiving equipment

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

Handle and store contents under inert gas. Protect from moisture

Response

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

IF ON SKIN: Brush off loose particles from skin. Immerse in cool water

Storage

Store in a dry place. Store in a closed container

Disposal

Dispose of contents/container to an approved waste disposal plant

3. Composition/Information on Ingredients

| Component | CAS-No | Weight % |
|------------|-----------|----------|
| Gadolinium | 7440-54-2 | <=100 |

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/effects | None reasonably foreseeable. |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

Suitable Extinguishing Media approved class D extinguishers. Do not use water or foam.

Unsuitable Extinguishing Media Water may be ineffective

Flash Point No information available
Method - No information available

| | |
|---|--------------------------|
| Autoignition Temperature | No information available |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Gadolinium oxide. Hydrogen.

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.

NFPA

Health
0

Flammability
3

Instability
2

Physical hazards
W

6. Accidental release measures

| | |
|----------------------------------|--|
| Personal Precautions | Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation. No special precautions required. |
| Environmental Precautions | Should not be released into the environment. See Section 12 for additional Ecological Information. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system. |

| | |
|---|--|
| Methods for Containment and Clean Up | Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal. Pick up and transfer to properly labelled containers. |
|---|--|

7. Handling and storage

| | |
|-----------------|---|
| Handling | Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Avoid dust formation. Do not get in eyes, on skin, or on clothing. |
| Storage. | Keep in a dry place. Keep away from acids. Incompatible Materials. Acids. Strong bases. |

8. Exposure controls / personal protection

| | |
|----------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
|----------------------------|---|

| | |
|-----------------------------|-----------------------------------|
| Engineering Measures | None under normal use conditions. |
|-----------------------------|-----------------------------------|

Personal protective equipment

| | |
|------------------------|---|
| Eye Protection | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. |
| Hand Protection | No special protective equipment required |

| | | | |
|---|---|-----------------------------|---|
| Glove material Nitrile rubber | Breakthrough time See manufacturers recommendations | Glove thickness - | Glove comments Splash protection only |
|---|---|-----------------------------|---|

Respiratory Protection

No protective equipment is needed under normal use conditions. No special protective equipment required.

Recommended Filter type: Particle filter

Environmental exposure controls

No information available.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

9. Physical and chemical properties

| | |
|---|--------------------------|
| Physical State | Solid |
| Appearance | Silver Grey |
| Odor | Odorless |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | 1312 °C / 2393.6 °F |
| Boiling Point/Range | 3000 °C / 5432 °F |
| Flash Point | No information available |
| Evaporation Rate | Not applicable |
| Flammability (solid,gas) | No information available |
| Flammability or explosive limits | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | 0 hPa @ 20 °C |
| Vapor Density | Not applicable |
| Specific Gravity | 7.89 g/cm3 |
| Solubility | No information available |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | No information available |
| Decomposition Temperature | No information available |
| Viscosity | Not applicable |

10. Stability and reactivity

| | |
|---|--|
| Reactive Hazard | Yes |
| Stability | Air sensitive. Moisture sensitive. |
| Conditions to Avoid | Incompatible products. |
| Incompatible Materials | Acids, Strong bases |
| Hazardous Decomposition Products | Gadolinium oxide, Hydrogen |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Acute Toxicity

Product Information
Component Information

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|------------|-----------|------------|------------|------------|------------|------------|
| Gadolinium | 7440-54-2 | Not listed | Not listed | Not listed | Not listed | Not listed |

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Persistence and Degradability Insoluble in water May persist

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN3178
 Proper Shipping Name Flammable solid, inorganic, n.o.s.
 Technical Name (Gadolinium foil)
 Hazard Class 4.1
 Packing Group II

TDG

UN-No UN3178
 Proper Shipping Name Flammable solid, inorganic, n.o.s.
 Hazard Class 4.1
 Packing Group II

IATA

UN-No UN3178
 Proper Shipping Name Flammable solid, inorganic, n.o.s.
 Hazard Class 4.1
 Packing Group II

IMDG/IMO

UN-No UN3178
 Proper Shipping Name Flammable solid, inorganic, n.o.s.
 Hazard Class 4.1
 Packing Group II

15. Regulatory information**International Inventories**

| Component | CAS-No | DSL | NDSL | TSCA | TSCA Inventory notification - Active-Inactive | EINECS | ELINCS | NLP |
|------------|-----------|-----|------|------|---|-----------|--------|-----|
| Gadolinium | 7440-54-2 | - | X | X | ACTIVE | 231-162-2 | - | - |

| Component | CAS-No | IECSC | KECL | ENCS | ISHL | TCSI | AICS | NZIoC | PICCS |
|------------|-----------|-------|----------------|------|------|------|------|-------|-------|
| Gadolinium | 7440-54-2 | - | KE-05-066 1 | X | - | X | - | - | - |

Legend:

X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

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

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

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

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

Other International Regulations**Authorisation/Restrictions according to EU REACH**

Not applicable

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

| Component | CAS-No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|------------|-----------|----------------|------------------------------|---------------------------|--|
| Gadolinium | 7440-54-2 | Not applicable | Not applicable | Not applicable | Not applicable |

| Component | CAS-No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|------------|-----------|---|--|----------------------------|------------------------------------|
| Gadolinium | 7440-54-2 | Not applicable | Not applicable | Not applicable | Not applicable |

16. Other information

| | |
|-------------------------|--|
| Prepared By | Product Safety Department Email: chem.techinfo@thermofisher.com www.thermofisher.com |
| Creation Date | 09-April-2018 |
| Revision Date | 30-March-2024 |
| Print Date | 30-March-2024 |
| Revision Summary | New emergency telephone response service provider. |

Disclaimer

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End of SDS