SAFETY DATA SHEET

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

1.1 Product identifiers
   
   Product name: Gadolinium, âˆ’40 mesh, 99% trace rare earth metals basis
   
   Product Number: 263060
   Brand: Aldrich
   CAS-No.: 7440-54-2

1.2 Relevant identified uses of the substance or mixture and uses advised against
   
   Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet
   
   Company: Sigma-Aldrich Inc.
   3050 SPRUCE ST
   ST. LOUIS MO 63103
   UNITED STATES
   
   Telephone: +1 314 771-5765
   Fax: +1 800 325-5052

1.4 Emergency telephone
   
   Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   
   GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
   
   Flammable solids (Category 1), H228
   Chemicals which, in contact with water, emit flammable gases (Category 3), H261
   
   For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements
   
   Pictogram
   Signal Word: Danger
   Hazard statement(s): Flammable solid.

Aldrich - 263060
H261 In contact with water releases flammable gas.

Precautionary statement(s)
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P231 + P232 Handle under inert gas. Protect from moisture.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P280 Wear protective gloves/ eye protection/ face protection.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P402 + P404 Store in a dry place. Store in a closed container.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula : Gd
Molecular weight : 157.25 g/mol
CAS-No. : 7440-54-2
EC-No. : 231-162-2

No components need to be disclosed according to the applicable regulations.

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed
After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available
SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
Water Foam

5.2 Special hazards arising from the substance or mixture

gadolinium oxides
Combustible.
May not get in touch with: Water
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

5.4 Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact.
Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Keep workplace dry. Do not allow product to come into contact with water.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures
Change contaminated clothing. Wash hands after working with substance.
For precautions see section 2.2.
7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Tightly closed. Keep away from heat and sources of ignition. Never allow product to get in contact with water during storage.

Air and moisture sensitive.

Storage class
Storage class (TRGS 510): 4.3: Hazardous materials, which set free flammable gases upon contact with water

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Change contaminated clothing. Wash hands after working with substance.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Body Protection
Flame retardant antistatic protective clothing.

Respiratory protection
required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure
Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance
Form: powder
Color: light gray

b) Odor
No data available

c) Odor Threshold
No data available

d) pH
No data available

e) Melting point/freezing point
Melting point/range: 1,313 °C (2,395 °F) - lit.
f) Initial boiling point and boiling range 3,273 °C 5,923 °F - lit.
g) Flash point No data available
h) Evaporation rate No data available
i) Flammability (solid, gas) The substance or mixture is a flammable solid with the category 1.
j) Upper/lower flammability or explosive limits No data available
k) Vapor pressure No data available
l) Vapor density No data available
m) Density 7.886 g/mL at 25 °C (77 °F) - lit.
    Relative density No data available
n) Water solubility insoluble
o) Partition coefficient: n-octanol/water Not applicable for inorganic substances
p) Autoignition temperature No data available
q) Decomposition temperature No data available
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties none

9.2 Other safety information
   Burning rate 100 mm/s

SECTION 10: Stability and reactivity

10.1 Reactivity
    The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability
    The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
    No data available

10.4 Conditions to avoid
    Moisture.

10.5 Incompatible materials
    Oxygen, Strong acids, Strong oxidizing agents

10.6 Hazardous decomposition products
    In the event of fire: see section 5
SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Acute toxicity**
- Oral: No data available
- Inhalation: No data available
- Dermal: No data available

**Skin corrosion/irritation**
No data available

**Serious eye damage/eye irritation**
No data available

**Respiratory or skin sensitization**
No data available

**Germ cell mutagenicity**
No data available

**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.
- NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

11.2 Additional Information

**RTECS:** LW3850000
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity
No data available

12.2 Persistence and degradability
The methods for determining biodegradability are not applicable to inorganic substances.
12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties
No data available

12.7 Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

DOT (US)
UN number: 3208 Class: 4.3 Packing group: III
Proper shipping name: Metallic substance, water-reactive, n.o.s. (Gadolinium(foil,chips,wire,mesh,block etc.))
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

IMDG
UN number: 3208 Class: 4.3 Packing group: III EMS-No: F-G, S-N
Proper shipping name: METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S. (Gadolinium(foil,chips,wire,mesh,block etc.))

IATA
UN number: 3208 Class: 4.3 Packing group: III
Proper shipping name: Metallic substance, water-reactive, n.o.s. (Gadolinium(foil,chips,wire,mesh,block etc.))

SECTION 15: Regulatory information

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
Reactivity Hazard

**Massachusetts Right To Know Components**
No components are subject to the Massachusetts Right to Know Act.

### SECTION 16: Other information

**Further information**
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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