SAFETY DATA SHEET
Gadolinium (pieces)

1. Identification

Product identifier

Product name  
Gadolinium (pieces)

Internal identification  
Replaces M-1000-110

CAS number  
7440-54-2

Recommended use of the chemical and restrictions on use

Application  
Exterior surface coating.

Uses advised against  
No specific uses advised against are identified.

Details of the supplier of the safety data sheet

Supplier  
Kurt J Lesker Company

Manufacturer  
Kurt J Lesker Company
1925 Route 51
Jefferson Hills, PA 15025
+1 412-387-9200

Kurt J Lesker Company LTD
United Kingdom
15-16 Burgess Road
Hastings, East Sussex, TN35 4NR
England
Customer Service: +44 (0) 1424 458100
msds@lesker.com

Emergency telephone number

Emergency telephone  
North America [USA, Canada, Mexico]: 1-866-519-4752
Mainland China: (+86) 4001 2001 74
Europe: (int'l call prefix)-1-760-476-3961
Asia Pacific: (int'l call prefix)-1-760-476-3960
Middle East & Africa: (int'l call prefix)-1-760-476-3959

2. Hazard(s) identification

Classification of the substance or mixture

Physical hazards  
Water-react. 2 - H261

Health hazards  
Not Classified

Environmental hazards  
Not Classified

Label elements
Gadolinium (pieces)

Pictogram

Signal word Danger

Hazard statements H261 In contact with water releases flammable gases.


Other hazards
This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Gadolinium (pieces)</th>
<th>0 - 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number: 7440-54-2</td>
<td></td>
</tr>
</tbody>
</table>

Classification Water-react. 2 - H261

The Full Text for all Hazard Statements are Displayed in Section 16.

4. First-aid measures

Description of first aid measures

General information If in doubt, get medical attention promptly. Show this Safety Data Sheet to the medical personnel.

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical attention if symptoms are severe or persist.

Ingestion Rinse mouth thoroughly with water. Get medical advice/attention if you feel unwell. Do not induce vomiting unless under the direction of medical personnel.

Skin Contact Rinse with water.

Eye contact Rinse with water. Get medical attention if any discomfort continues.

Protection of first aiders First aid personnel should wear appropriate protective equipment during any rescue.

Most important symptoms and effects, both acute and delayed

General information The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation No specific symptoms known.

Ingestion No specific symptoms known.

Skin contact Prolonged contact may cause dryness of the skin.

Eye contact No specific symptoms known. May be slightly irritating to eyes.
Gadolinium (pieces)

**Indication of immediate medical attention and special treatment needed**

**Notes for the doctor**
Treat symptomatically.

**Specific treatments**
No special treatment required.

### 5. Fire-fighting measures

**Extinguishing media**

- **Suitable extinguishing media**
The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide or dry powder. Use fire-extinguishing media suitable for the surrounding fire.

- **Unsuitable extinguishing media**
Do not use water, if avoidable.

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

- **Specific hazards**
Reacts with water.

- **Hazardous combustion products**
Thermal decomposition or combustion products may include the following substances:

  - Harmful gases or vapors.

**Advice for firefighters**

- **Protective actions during firefighting**
Avoid breathing fire gases or vapors. Evacuate area. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

- **Special protective equipment for firefighters**
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

- **Personal precautions**
Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk.

- **Environmental precautions**
Avoid discharge into drains or watercourses or onto the ground.

**Methods and material for containment and cleaning up**

- **Methods for cleaning up**
Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

**Reference to other sections**
For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

### 7. Handling and storage

**Precautions for safe handling**

- **Usage precautions**
Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Keep container tightly sealed when not in use. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.
Gadolinium (pieces)

Advice on general occupational hygiene
Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.

Conditions for safe storage, including any incompatibilities
Storage precautions
Avoid contact with water. Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage.

Storage class
Water-reactive storage.

Specific end uses(s)
The identified uses for this product are detailed in Section 1.2.

8. Exposure Controls/personal protection

Exposure controls

Protective equipment

Appropriate engineering controls
Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection
Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

Hand protection
No specific hand protection recommended.

Other skin and body protection
Wear appropriate clothing to prevent repeated or prolonged skin contact.

Hygiene measures
Wash hands thoroughly after handling. Wash at the end of each work shift and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

Respiratory protection
Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

Environmental exposure controls
Keep container tightly sealed when not in use.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance
Solid.

Color
White/off-white.

Odor
No characteristic odor.

Odor threshold
Not applicable.

pH
Not applicable.

Melting point
1312°C

Initial boiling point and range
Not available.

Flash point
Not applicable.
Gadolinium (pieces)

Evaporation rate: Not applicable.
Flammability (solid, gas): Not applicable.
Upper/lower flammability or explosive limits: Not applicable.
Vapor pressure: Not available.
Vapor density: Not available.
Relative density: 7.9 @ 20°C
Bulk density: Not available.
Solubility(ies): Insoluble in water.
Partition coefficient: Not applicable.
Auto-ignition temperature: Not applicable.
Decomposition Temperature: Not available.
Viscosity: Not applicable.
Molecular weight: 157.25

10. Stability and reactivity

Reactivity: There are no known reactivity hazards associated with this product.
Stability: Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.
Possibility of hazardous reactions: Reacts strongly with water.
Conditions to avoid: There are no known conditions that are likely to result in a hazardous situation.
Materials to avoid: Water.
Hazardous decomposition products: Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

11. Toxicological information

Information on toxicological effects

Toxicological effects: Not regarded as a health hazard under current legislation.
Acute toxicity - oral
Notes (oral LD₅₀): Based on available data the classification criteria are not met.
Acute toxicity - dermal
Notes (dermal LD₅₀): Based on available data the classification criteria are not met.
Acute toxicity - inhalation
Notes (inhalation LC₅₀): Based on available data the classification criteria are not met.
Skin corrosion/irritation
Animal data: Based on available data the classification criteria are not met.
### Gadolinium (pieces)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Classification Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious eye damage/irritation</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Genotoxicity - in vitro</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>IARC carcinogenicity</td>
<td>None of the ingredients are listed or exempt.</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Reproductive toxicity - fertility</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Reproductive toxicity - development</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure</td>
<td>Not classified as a specific target organ toxicant after a single exposure.</td>
</tr>
<tr>
<td>STOT - single exposure</td>
<td>Not classified as a specific target organ toxicant after a single exposure.</td>
</tr>
<tr>
<td>Specific target organ toxicity - repeated exposure</td>
<td>Not classified as a specific target organ toxicant after repeated exposure.</td>
</tr>
<tr>
<td>STOT - repeated exposure</td>
<td>Not classified as a specific target organ toxicant after repeated exposure.</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not relevant. Solid.</td>
</tr>
<tr>
<td>General information</td>
<td>The severity of the symptoms described will vary dependent on the concentration and the length of exposure.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>No specific symptoms known.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No specific symptoms known.</td>
</tr>
<tr>
<td>Skin Contact</td>
<td>Prolonged contact may cause dryness of the skin.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>No specific symptoms known.</td>
</tr>
<tr>
<td>Route of entry</td>
<td>Ingestion Inhalation Skin and/or eye contact</td>
</tr>
<tr>
<td>Target Organs</td>
<td>No specific target organs known.</td>
</tr>
</tbody>
</table>

### 12. Ecological Information

<table>
<thead>
<tr>
<th>Classification</th>
<th>Classification Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecotoxicity</td>
<td>Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.</td>
</tr>
<tr>
<td>Toxicity</td>
<td>Based on available data the classification criteria are not met.</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Reacts with water.</td>
</tr>
</tbody>
</table>
Gadolinium (pieces)

Bio-Accumulative Potential
No data available on bioaccumulation.

Partition coefficient
Not applicable.

Mobility in soil

Mobility
No data available.

Other adverse effects
None known.

13. Disposal considerations

Waste treatment methods

General information
The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

Disposal methods
Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information

General
For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

UN Number

UN No. (TDG) 2813
UN No. (IMDG) 2813
UN No. (ICAO) 2813
UN No. (DOT) 2813

UN proper shipping name

Proper shipping name (TDG) WATER-REACTIVE SOLID, N.O.S. (User to define)
Proper shipping name (IMDG) WATER-REACTIVE SOLID, N.O.S. (User to define)
Proper shipping name (ICAO) WATER-REACTIVE SOLID, N.O.S. (User to define)
Proper shipping name (DOT) WATER-REACTIVE SOLID, N.O.S. (User to define)

Transport hazard class(es)

TDG class 4.3
TDG label(s) 4.3
IMDG Class 4.3
ICAO class/division 4.3
Gadolinium (pieces)

Transport labels

Packing group

- TDG Packing Group: II
- IMDG packing group: II
- ICAO packing group: II
- DOT packing group: II

Environmental hazards

Environmentally Hazardous Substance
No.

Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

EmS: F-G, S-N

Transport in bulk according to: Not applicable.
Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
None of the ingredients are listed or exempt.

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
None of the ingredients are listed or exempt.

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
None of the ingredients are listed or exempt.

SARA 313 Emission Reporting
None of the ingredients are listed or exempt.

CAA Accidental Release Prevention
None of the ingredients are listed or exempt.

FDA - Essential Chemical
None of the ingredients are listed or exempt.

FDA - Precursor Chemical
None of the ingredients are listed or exempt.

SARA (311/312) Hazard Categories
Reactivity

Gadolinium (pieces)
Reactivity
Gadolinium (pieces)

OSHA Highly Hazardous Chemicals
None of the ingredients are listed or exempt.

US State Regulations
California Proposition 65 Carcinogens and Reproductive Toxins
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-I)
None of the ingredients are listed or exempt.

California Air Toxics "Hot Spots" (A-II)
None of the ingredients are listed or exempt.

California Directors List of Hazardous Substances
None of the ingredients are listed or exempt.

Massachusetts "Right To Know" List
None of the ingredients are listed or exempt.

Rhode Island "Right To Know" List
None of the ingredients are listed or exempt.

Minnesota "Right To Know" List
None of the ingredients are listed or exempt.

New Jersey "Right To Know" List
All the ingredients are listed or exempt.

Pennsylvania "Right To Know" List
All the ingredients are listed or exempt.

Inventories
US - TSCA
All the ingredients are listed or exempt.

US - TSCA 12(b) Export Notification
None of the ingredients are listed or exempt.

Philippines - PICCS
All the ingredients are listed or exempt.

New Zealand - NZIOC
All the ingredients are listed or exempt.

16. Other information

Training advice
Only trained personnel should use this material.

Revision date
12/29/2015

Revision
2

Supersedes date
12/17/2015

SDS No.
4738

Hazard statements in full
H261 In contact with water releases flammable gases.

End of SDS
Gadolinium (pieces)

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.