# Material Safety Data Sheet

According to OSHA and ANSI


## 1 Identification of the substance/mixture and of the company/undertaking

**Product identifier**

**Product name:** Lead foil

**Stock number:** 42708

**CAS Number:** 7439-92-1

**EC number:** 231-100-4

**Index number:** 082-001-00-6

### Relevant identified uses of the substance or mixture and uses advised against.

**Sector of Use SU24**  Scientific research and development

## Details of the supplier of the safety data sheet

**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

**Information Department:** Health, Safety and Environmental Department

**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

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## 2 Hazards identification

### Classification of the substance or mixture

- **GHS06 Skull and crossbones**

  - **H301**  Toxic if swallowed.

- **GHS08 Health hazard**

  - **H360**  May damage fertility or the unborn child.
  - **H373**  May cause damage to organs through prolonged or repeated exposure.

- **GHS09 Environment**

  - **H400**  Very toxic to aquatic life.
  - **H410**  Very toxic to aquatic life with long lasting effects.

- **GHS07**

  - **H332**  Harmful if inhaled.

### Classification according to Directive 67/548/EEC or Directive 1999/45/EC

- **T; Toxic**
  - **R61:**  May cause harm to the unborn child.

- **Xn; Harmful**
  - **R62-20/22:**  Possible risk of impaired fertility. Harmful by inhalation and if swallowed.

- **N; Dangerous for the environment**
  - **R50/53:**  Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

- **R33:**  Danger of cumulative effects.

**Information concerning particular hazards for human and environment:** Not applicable

(Contd. on page 2)
Product name: Lead foil

Label elements

Labelling according to EU guidelines:

Code letter and hazard designation of product:
T Toxic
N Dangerous for the environment

Risk phrases:
61 May cause harm to the unborn child
62 Possible risk of impaired fertility
20/22 Also harmful by inhalation and if swallowed.
33 Danger of cumulative effects.
50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:
53 Avoid exposure - obtain special instructions before use.
45 In case of accident or if you feel unwell, seek medical advice immediately.
60 This material and its container must be disposed of as hazardous waste.
61 Avoid release to the environment. Refer to special instructions/Safety data sheets

Hazard description:

WHMIS classification
D2A - Very toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)
(Hazardous Materials Identification System)

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>1</th>
<th>Health (acute effects) = 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE</td>
<td>0</td>
<td>Flammability = 0</td>
</tr>
<tr>
<td>REACTIVITY</td>
<td>0</td>
<td>Reactivity = 0</td>
</tr>
</tbody>
</table>

Other hazards

Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances
CAS# Description:
7439-92-1 Lead
Identification number(s):
EC number: 231-100-4
Index number: 082-001-00-6

4 First aid measures

Description of first aid measures

General information No special measures required.
After inhalation Seek medical treatment in case of complaints.
After skin contact Generally the product does not irritate the skin.
After eye contact Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
After swallowing If symptoms persist consult doctor.

Information for doctor

Most important symptoms and effects, both acute and delayed
No further relevant information available.
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Firefighting measures

Extinguishing media

Suitable extinguishing agents Special powder for metal fires. Do not use water.
Material Safety Data Sheet
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Product name: Lead foil

For safety reasons unsuitable extinguishing agents: Water
Special hazards arising from the substance or mixture:
In case of fire, the following can be released:
Lead oxide fume

Advice for firefighters
Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures: Not required.
Environmental precautions:
Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleanup:
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Open and handle container with care.

Information about protection against explosions and fires: No special measures required.

Conditions for safe storage, including any incompatibilities

Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: No information known.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Specific end use(s): No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems: No further data; see item 7.

Control parameters

Components with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Component</th>
<th>PEL</th>
<th>REL</th>
</tr>
</thead>
<tbody>
<tr>
<td>7439-92-1 Lead (100.0%)</td>
<td>0.05* mg/m³</td>
<td>0.05 mg/m³</td>
</tr>
</tbody>
</table>

*see 29 CFR 1910.1025

EXL ( ) 0.05* mg/m³ excluding lead arsenate; See Pocket Guide App. C

TLV ( ) 0.05* mg/m³
*and inorganic compounds, as Pb; BEI

Additional information: No data

Exposure controls

Personal protective equipment

General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Store protective clothing separately.
Maintain an ergonomically appropriate working environment.

Breathing equipment: Not required.

Protection of hands:
Check protective gloves prior to each use for their proper condition.
Not required.

Material of gloves
The selection of suitable gloves not only depends on the material, but also on quality.
Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses

Body protection: Protective work clothing.
9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information</td>
<td></td>
</tr>
<tr>
<td>Appearance:</td>
<td>Solid in various forms</td>
</tr>
<tr>
<td>Form:</td>
<td>Solid in various forms</td>
</tr>
<tr>
<td>Color:</td>
<td>Grey</td>
</tr>
<tr>
<td>Odor:</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odour threshold:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>pH-value:</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Change in condition</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/Melting range:</td>
<td>327.5°C (622 °F)</td>
</tr>
<tr>
<td>Boiling point/Boiling range:</td>
<td>1749°C (3180 °F)</td>
</tr>
<tr>
<td>Sublimation temperature / start:</td>
<td>Not determined</td>
</tr>
</tbody>
</table>

| Flammability (solid, gaseous) | Not determined. |
| Ignition temperature: | Not determined |
| Decomposition temperature: | Not determined |
| Auto igniting: | Not determined. |

<table>
<thead>
<tr>
<th>Danger of explosion:</th>
<th>Product does not present an explosion hazard.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explosion limits:</td>
<td></td>
</tr>
<tr>
<td>Lower:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Upper:</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapor pressure at 20°C (68 °F):</td>
<td>0 hPa</td>
</tr>
<tr>
<td>Density at 20°C (68 °F):</td>
<td>11.34 g/cm³ (94.632 lbs/gal)</td>
</tr>
<tr>
<td>Bulk density at 20°C (68 °F):</td>
<td>5280 kg/m³</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

| Solubility in / Miscibility with Water: | Insoluble |
| Segregation coefficient (n-octonol/water): | Not determined. |
| Viscosity: |  |
| dynamic: | Not applicable. |
| kinematic: | Not applicable. |
| Other information | No further relevant information available. |

10 Stability and reactivity

<table>
<thead>
<tr>
<th>Reactivity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical stability</td>
<td></td>
</tr>
<tr>
<td>Thermal decomposition / conditions to be avoided:</td>
<td>Decomposition will not occur if used and stored according to specifications.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>No dangerous reactions known</td>
</tr>
<tr>
<td>Incompatible materials:</td>
<td>No information known.</td>
</tr>
<tr>
<td>Hazardous decomposition products:</td>
<td>Lead oxide fume</td>
</tr>
</tbody>
</table>

11 Toxicological information

<table>
<thead>
<tr>
<th>Information on toxicological effects</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity:</td>
<td></td>
</tr>
<tr>
<td>Primary irritant effect:</td>
<td>May cause irritation</td>
</tr>
<tr>
<td>on the skin:</td>
<td>May cause irritation</td>
</tr>
<tr>
<td>on the eye:</td>
<td>May cause irritation</td>
</tr>
<tr>
<td>Sensitization:</td>
<td>No sensitizing effects known.</td>
</tr>
<tr>
<td>Additional toxicological information:</td>
<td>To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. May cause harm to the unborn child. Possible risk of impaired fertility. EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies. IARC-2A: Probably carcinogenic to humans: limited human evidence; sufficient evidence in experimental animals</td>
</tr>
</tbody>
</table>
Product name: Lead foil

NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.
ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute and/or other multiple dose toxicity data for components in this product.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive and/or mutation data for components in this product.

12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability: No further relevant information available.
Behavior in environmental systems:
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.
Ecotoxicological effects:
Remark: Very toxic for aquatic organisms
Additional ecological information:
General notes:
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Do not allow material to be released to the environment without proper governmental permits.
Very toxic for aquatic organisms
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects: No further relevant information available.

13 Disposal considerations

Waste treatment methods
Recommendation: Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

14 Transport information

<table>
<thead>
<tr>
<th>UN-Number</th>
<th>DOT, ADR, ADM, IMDG, IATA</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>DOT, ADR, ADM, IMDG, IATA</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>DOT, ADR, ADM, IMDG, IATA</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packing group</td>
<td>DOT, ADR, IMDG, IATA</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td></td>
<td>Environmentally hazardous substance, solid; Marine Pollutant</td>
</tr>
<tr>
<td>Marine pollutant:</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td></td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</td>
<td>DOT, ADR, IMDG, IATA</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# 15 Regulatory Information

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

**Product related hazard information:**

**Hazard symbols:**
- T Toxic
- N Dangerous for the environment

**Risk phrases:**
- 61 May cause harm to the unborn child
- 62 Possible risk of impaired fertility
- 20/22 Also harmful by inhalation and if swallowed.
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**Safety phrases:**
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- 60 This material and its container must be disposed of as hazardous waste.
- 61 Avoid release to the environment. Refer to special instructions/Safety data sheets

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

**Information about limitation of use:**
For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**Other regulations, limitations and prohibitive regulations**

REACH - Pre-registered substances Substance is listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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# 16 Other Information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing MSDS:** Health, Safety and Environmental Department.

**Contact:**
Zachariah C. Holt
Global EHS Manager

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)