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

1.1 Product identifier

Product name: Lead
CAS-No.: 7439-92-1
EC-No.: 231-100-4

1.2 Relevant identified uses of the substance or mixture

Identified use: Laboratory chemical

1.3 Details of the supplier of the safety data sheet

Company: NETZSCH-Gerätebau GmbH
Wittelsbacherstraße 42
95100 Selb / Germany

Customer service Phone: +49 9287 881-555

1.4 Emergency Phone: +49 9287 881-174 (during office hours)
Fax: +49 9287 881-505
E-mail Address: service@ngb.netzsch.com

2. Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Repr. 1A H360FD May damage fertility. May damage the unborn child
Reproductive toxicity, Additional H362 May cause harm to breast-fed children
category, Effects on or via lactation
STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
Aquatic Acute 1 H400 Very toxic to aquatic life.
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H332 Harmful if inhaled.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms:

Signalword: Danger
Hazard statements: 
H302+H332 Harmful if swallowed or if inhaled. 
H360FD May damage fertility. May damage the unborn child 
H362 May cause harm to breast-fed children 
H373 May cause damage to organs through prolonged or repeated exposure. 
H410 Very toxic to aquatic life with long lasting effects. 

Precautionary statements: 
P260 Do not breathe dust/fume/gas/mist/vapours/spray. 
P273 Avoid release to the environment. 
P308+P313 IF exposed or concerned: Get medical advice/attention. 
P501 Dispose of contents/container in accordance with local/regional/national/international regulations. 

Additional information: 
- 

2.3 Other hazards 
All chemicals are potentially dangerous. They are therefore only be handled by specially trained personnel with the necessary care. 

Results of PBT- und vPvB assessment 
PBT: Not applicable. 
vPvB: Not applicable. 

3. Composition / information on ingredients 

3.1 Chemical characterization: 

Substances 
CAS-No. Description: 7439-92-1 lead 
Identification number(s): 
EC number: 231-100-4 
Formula: Pb 
Molar mass [g/mol]: 207,2 

4. First aid measures 

4.1 Description of first aid measures 
General information: Consult a physician. Show this safety data sheet to the doctor in attendance. Remove any clothing soiled by the product. 
After inhalation: Move person into fresh air. If not breathing, give artificial respiration. Consult a physician. 
After skin contact: Wash off with soap and plenty of water. If skin irritation continues, consult a doctor. 
After eye contact: To be sure rinse opened eye under running water for at least 15 minutes. Consult a physician. 
After swallowing: Rinse out mouth and drink a glass of water. Do not induce vomiting. Try not to vomit. Call for a doctor immediately. 

4.2 Most important symptoms and effects, both acute and delayed 
Anemia.
4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5. Fire-Fighting measures

5.1 Extinguishing agents

Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

CO₂, powder or water spray.

Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents: For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

In the event of fire development of hazardous combustion gases or vapours possible.

Product non-combustible.

Ambient fire may liberate hazardous vapours.

In case of fire, the following can be released:

Lead Oxides

5.3 Advice for firefighters

Protective equipment: Mouth respiratory protective device.

Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional information: Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe dust.

Ensure adequate ventilation.

Avoid formation of dust.

6.2 Environmental precautions

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ground water or penetrate the soil.

Keep contaminated washing water and dispose of appropriately.

6.3 Methods and material for containment and cleaning up

Pick up mechanically.

Clean the affected area carefully.

Dispose of the material collected according to regulations.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

6.4 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

7.1 Precautions for safe handling

Handling corresponding to laboratory safety guidelines.
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Handle and open container with care.

Information about fire and explosion protection:

Keep respiratory protective device available.

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be safe storage, including any incompatibilities: No special requirements.

Information about storage in one common storage facility: Store away from foodstuffs.

Further information about storage conditions:

Store in dry conditions.
Store under lock and key and with access restricted to technical experts or their assistants only.
Keep container tightly sealed.

Recommended storage temperature: 15-25 °C

7.3 Specific end use(s)

No further relevant information available.

8. Exposure controls / personal protection

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

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace: Not required.

Additional information: The lists valid during the making were used as basis.
8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:
- Do not eat, drink or smoke while working.
- Do not breathe dust.
- Pregnant women should strictly avoid inhalation or skin contact.
- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.

Individual protection measures:
- Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Respiratory protection:
- Required when dusts are generated: filter P2.
- In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Protection of hands:
- Protective gloves:
  - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.
  - Material: Nitrile

Eye protection:
- Tightly sealed goggles

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

9.1 Information on basic physical and chemical properties

General Information

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Form:</th>
<th>Solid</th>
</tr>
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<tbody>
<tr>
<td>Colour:</td>
<td>Colour:</td>
<td>Silver grey</td>
</tr>
<tr>
<td>Odour:</td>
<td>Odour:</td>
<td>Odourless</td>
</tr>
<tr>
<td>Odour threshold:</td>
<td>Odour threshold:</td>
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</tr>
<tr>
<td>pH-value:</td>
<td>pH-value:</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Change in condition</th>
<th>Melting point / Melting range:</th>
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</thead>
<tbody>
<tr>
<td>Boiling point / Boiling range:</td>
<td>Boiling point / Boiling range:</td>
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<tr>
<td>Flash point:</td>
<td>Flash point:</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Flammability (solid, gaseous):</th>
<th>Flammability (solid, gaseous):</th>
<th>Product is not flammable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignition temperature:</td>
<td>Ignition temperature:</td>
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</tr>
<tr>
<td>Decomposition temperature:</td>
<td>Decomposition temperature:</td>
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</tr>
<tr>
<td>Danger of explosion:</td>
<td>Danger of explosion:</td>
<td>Product does not present an explosion hazard.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Explosion limits</th>
<th>Explosion limits</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Lower:</td>
<td>Lower:</td>
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</tr>
<tr>
<td>Upper:</td>
<td>Upper:</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Vapour pressure at 970°C:</td>
<td>Vapour pressure at 970°C:</td>
<td>1.33 hPa</td>
</tr>
<tr>
<td>Density at 20°C:</td>
<td>Density at 20°C:</td>
<td>11.35 g/cm³</td>
</tr>
<tr>
<td>Relative density:</td>
<td>Relative density:</td>
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</tr>
<tr>
<td>Vapour density:</td>
<td>Vapour density:</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Evaporation rate:</td>
<td>Evaporation rate:</td>
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</tr>
<tr>
<td>Solubility in / Miscibility with water:</td>
<td>Solubility in / Miscibility with water:</td>
<td>Insoluble.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol / water):</td>
<td>Partition coefficient (n-octanol / water):</td>
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<table>
<thead>
<tr>
<th>Viskosity</th>
<th>Viskosity</th>
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</thead>
<tbody>
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<td>Dynamic:</td>
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</tr>
<tr>
<td>Kinematic:</td>
<td>Kinematic:</td>
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</tr>
</tbody>
</table>

9.2 Other information

No further relevant information available.
10. Stability and reactivity

10.1 Reactivity
No data available.

10.2 Chemical stability
Thermal decomposition / conditions to be avoided:
No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions
No information available.

10.4 Conditions to avoid
No further relevant information available.

10.5 Incompatible materials
Fluorine, strong acids, azides, picrates.

10.6 Hazardous decomposition products
In case of fire: see item 5.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD / LC50 values relevant for classification: Quantitative data on the toxicity of this product are not available.

Potential health effects
Skin: Harmful if absorbed through skin. May cause skin irritation.
Eyes: May cause eye irritation.
Inhalation: Harmful if inhaled. May cause respiratory tract irritation.
Ingestion Harmful if swallowed.
Sensitization: No information available.

CMR effects
Germ cell mutagenicity: Genotoxicity in vivo - rat - Inhalation
Cytogenetic analysis
Carcinogenicity: Limited evidence of carcinogenicity in animal studies
Reproductive toxicity: Suspected human reproductive toxicant
Reproductive toxicity - rat - Inhalation
Effects on Newborn: Biochemical and metabolic.
Reproductive toxicity - rat - Oral
Effects on Newborn: Behavioral.
Reproductive toxicity - mouse - Oral
Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated). Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Developmental Toxicity - rat - Inhalation
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow).

Developmental Toxicity - rat - Oral
Specific Developmental Abnormalities: Blood and lymphatic system (including spleen and marrow). Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Developmental Toxicity - rat - Oral
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Developmental Toxicity - mouse - Oral
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

Aspiration hazard:
No data available.

Specific target organ toxicity – single exposure:
No data available.

Specific target organ toxicity – repeated exposure:
May cause damage to organs through prolonged or repeated exposure. Because of poor absorbability via the gastrointestinal tract, only very high doses lead to acute cases of intoxication. After latency period of several hours, metallic taste, nausea, vomiting, shock.

Target organs:
Central nervous system, immune system, blood, kidney.

Additional toxicological information:
No data available.

Further information:
The product should be handled with the usual care as necessary for chemicals.

12. Ecological information

12.1 Toxicity

Aquatic toxicity

<table>
<thead>
<tr>
<th>Daphnia toxicity</th>
<th>Fish toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>4.46 mg/l/48 h (Daphnia magna) (GESTIS)</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

Persistence: No data available.
Degradability: No data available.

12.3 Bioaccumulative potential
Onchorhynchus kisutch - 2 Weeks - 150 µg/l
Bioconcentration factor (BCF): 12

12.4 Mobility in soil
No data available.

Ecotoxicological effects
Remark: Do not allow to enter waters, waste water, or soil! Very toxic to aquatic life with long lasting effects.

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

vPvB: Not applicable.

12.6 Other adverse effects
No further relevant information available.

13. Disposal considerations

13.1 Waste treatment methods
Recommendation: Dispose of residual amounts and non-reusable solutions in accordance with local legal regulations. Waste codes must be assigned by the user based on the application for which the product was used. Waste code must be classified as hazardous.

Uncleaned packaging
Recommendation: Disposal same as for unused product.
14. Transport information

<table>
<thead>
<tr>
<th>14.1 UN-Number</th>
<th>ADR</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
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<td>UN3077</td>
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<table>
<thead>
<tr>
<th>14.2 UN proper shipping name</th>
<th>ADR</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (lead)</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (lead)</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (lead)</td>
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</table>

<table>
<thead>
<tr>
<th>14.3 Transport hazard class(es) / label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport hazard class(es): 9 Miscellaneous dangerous substances and articles.</td>
</tr>
<tr>
<td>Label: 9</td>
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<tr>
<td>danger symbol:</td>
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</table>

<table>
<thead>
<tr>
<th>14.4 Packing group:</th>
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<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>III</td>
<td>III</td>
<td>III</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>14.5 Environmental hazards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>no</td>
</tr>
</tbody>
</table>

14.6 Special precautions for user

Warning: Miscellaneous dangerous substances and articles.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

The cargo is not intended to be carried in bulk.

15. Regulatory information

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

National regulations:

Information about limitation of use: Employment restrictions concerning juveniles must be observed.

Waterhazard class: Generally not hazardous for water (German regulation).

Information in accordance with article 33 of the 1907/2006/EG regulation

Lead (CAS 7439-92-1) has been identified as a substance of very high concern in accordance with article 59.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.
16. Other Information

Guarantee
This information has been compiled to the best of our knowledge; however, we make no claim as to its completeness and it is meant to serve only as a guideline. NETZSCH-Gerätebau GmbH disclaims any liability for damages which may occur in handling or in contact with these chemicals.

Disclaimer
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