

**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Lead(II) bromide

Product Number : 398853  
Brand : Aldrich  
Index-No. : 082-001-00-6

CAS-No. : 10031-22-8

**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  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USATelephone : +1 800-325-5832  
Fax : +1 800-325-5052**1.4 Emergency telephone number**

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 4), H332  
Carcinogenicity (Category 1B), H350  
Reproductive toxicity (Category 1B), H360  
Specific target organ toxicity - repeated exposure (Category 2), H373  
Acute aquatic toxicity (Category 1), H400  
Chronic aquatic toxicity (Category 1), H410

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)

H302 + H332 Harmful if swallowed or if inhaled.  
H350 May cause cancer.  
H360 May damage fertility or the unborn child.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 Obtain special instructions before use.

|                    |                                                                                                                            |
|--------------------|----------------------------------------------------------------------------------------------------------------------------|
| P202               | Do not handle until all safety precautions have been read and understood.                                                  |
| P260               | Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.                                                                      |
| P264               | Wash skin thoroughly after handling.                                                                                       |
| P270               | Do not eat, drink or smoke when using this product.                                                                        |
| P271               | Use only outdoors or in a well-ventilated area.                                                                            |
| P273               | Avoid release to the environment.                                                                                          |
| P280               | Wear protective gloves/ protective clothing/ eye protection/ face protection.                                              |
| P301 + P312 + P330 | IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.                                                 |
| P304 + P340 + P312 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. |
| P308 + P313        | IF exposed or concerned: Get medical advice/ attention.                                                                    |
| P391               | Collect spillage.                                                                                                          |
| P405               | Store locked up.                                                                                                           |
| P501               | Dispose of contents/ container to an approved waste disposal plant.                                                        |

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

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

|                  |                      |
|------------------|----------------------|
| Formula          | : Br <sub>2</sub> Pb |
| Molecular weight | : 367.01 g/mol       |
| CAS-No.          | : 10031-22-8         |
| EC-No.           | : 233-084-4          |
| Index-No.        | : 082-001-00-6       |

#### Hazardous components

| Component             | Classification                                                                                                       | Concentration |
|-----------------------|----------------------------------------------------------------------------------------------------------------------|---------------|
| <b>Lead dibromide</b> |                                                                                                                      |               |
|                       | Acute Tox. 4; Carc. 1B; Repr. 1B; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H302 + H332, H350, H360, H373, H410 | 90 - 100 %    |

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

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

##### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

##### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

##### In case of eye contact

Flush eyes with water as a precaution.

##### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 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

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## 5. FIREFIGHTING MEASURES

- 5.1 Extinguishing media**  
**Suitable extinguishing media**  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- 5.2 Special hazards arising from the substance or mixture**  
No data available
- 5.3 Advice for firefighters**  
Wear self-contained breathing apparatus for firefighting if necessary.
- 5.4 Further information**  
No data available

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## 6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**  
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.
- 6.2 Environmental precautions**  
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
- 6.3 Methods and materials for containment and cleaning up**  
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
- 6.4 Reference to other sections**  
For disposal see section 13.

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## 7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling**  
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.  
Provide appropriate exhaust ventilation at places where dust is formed.  
For precautions see section 2.2.
- 7.2 Conditions for safe storage, including any incompatibilities**  
Keep container tightly closed in a dry and well-ventilated place.  
  
Keep in a dry place.  
Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects
- 7.3 Specific end use(s)**  
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

| Component      | CAS-No.    | Value                                                                                            | Control parameters     | Basis                                   |
|----------------|------------|--------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------|
| Lead dibromide | 10031-22-8 | TWA                                                                                              | 0.05 mg/m <sup>3</sup> | USA. ACGIH Threshold Limit Values (TLV) |
|                | Remarks    | Central Nervous System impairment<br>Hematologic effects<br>Peripheral Nervous System impairment |                        |                                         |

|  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |                                                                                         |
|--|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------|
|  |  | Substances for which there is a Biological Exposure Index or Indices (see BEI® section)<br>Confirmed animal carcinogen with unknown relevance to humans varies                                                                                                                                                                                                                                                                                                                                                                                     |            |                                                                                         |
|  |  | PEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.05 mg/m3 | OSHA Specifically Regulated Chemicals/Carcinogens                                       |
|  |  | 1910.1025<br>If an employee is exposed to lead for more than 8 hours in any work day, the permissible exposure limit, as a time weighted average (TWA) for that day, shall be reduced according to the following formula: Maximum permissible limit (in µg/m3 )=400÷hours worked in the day<br>This section applies to all occupational exposure to lead, except as provided in paragraph (a)(2). It does not apply to the construction industry or to agricultural operations covered by 29 CFR part 1928. OSHA specifically regulated carcinogen |            |                                                                                         |
|  |  | TWA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.05 mg/m3 | USA. NIOSH Recommended Exposure Limits                                                  |
|  |  | See Appendix C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |                                                                                         |
|  |  | PEL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.05 mg/m3 | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
|  |  | see Section 5198                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |            |                                                                                         |

#### Biological occupational exposure limits

| Component | CAS-No. | Parameters   | Value    | Biological specimen | Basis                                     |
|-----------|---------|--------------|----------|---------------------|-------------------------------------------|
|           | -       | Lead         | 200 µg/l | In blood            | ACGIH - Biological Exposure Indices (BEI) |
|           | Remarks | Not critical |          |                     |                                           |

## 8.2 Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

### Personal protective equipment

#### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

#### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

#### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an

industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

#### **Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### **Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### **Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

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## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **9.1 Information on basic physical and chemical properties**

|                                                 |                                             |
|-------------------------------------------------|---------------------------------------------|
| a) Appearance                                   | Form: powder                                |
| b) Odour                                        | No data available                           |
| c) Odour Threshold                              | No data available                           |
| d) pH                                           | No data available                           |
| e) Melting point/freezing point                 | Melting point/range: 371 °C (700 °F) - lit. |
| f) Initial boiling point and boiling range      | 892 °C (1,638 °F) - lit.                    |
| g) Flash point                                  | Not applicable                              |
| h) Evaporation rate                             | No data available                           |
| i) Flammability (solid, gas)                    | No data available                           |
| j) Upper/lower flammability or explosive limits | No data available                           |
| k) Vapour pressure                              | No data available                           |
| l) Vapour density                               | No data available                           |
| m) Relative density                             | 6.66 g/mL at 25 °C (77 °F)                  |
| n) Water solubility                             | No data available                           |
| o) Partition coefficient: n-octanol/water       | No data available                           |
| p) Auto-ignition temperature                    | No data available                           |
| q) Decomposition temperature                    | No data available                           |
| r) Viscosity                                    | No data available                           |
| s) Explosive properties                         | No data available                           |
| t) Oxidizing properties                         | No data available                           |

### **9.2 Other safety information**

No data available

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## **10. STABILITY AND REACTIVITY**

### **10.1 Reactivity**

No data available

**10.2 Chemical stability**

Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**

No data available

**10.4 Conditions to avoid**

No data available

**10.5 Incompatible materials**

Strong oxidizing agents

**10.6 Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Hydrogen bromide gas, Lead oxides

Other decomposition products - No data available

In the event of fire: see section 5

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**11. TOXICOLOGICAL INFORMATION****11.1 Information on toxicological effects****Acute toxicity**

No data available

Dermal: No data available

No data available

**Skin corrosion/irritation**

No data available

**Serious eye damage/eye irritation**

No data available

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

IARC: 2A - Group 2A: Probably carcinogenic to humans (Lead dibromide)

NTP: RAHC - Reasonably anticipated to be a human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Lead dibromide)

OSHA: OSHA specifically regulated carcinogen (Lead dibromide)

**Reproductive toxicity**

May cause congenital malformation in the fetus.

Presumed human reproductive toxicant

May cause reproductive disorders.

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: Not available

Lead salts have been reported to cross the placenta and to induce embryo- and feto- mortality. They also have teratogenic effect in some animal species. No teratogenic effects have been reported with exposure to organometallic lead compounds. Adverse effects of lead on human reproduction, embryonic and fetal development, and postnatal (e.g., mental) development have been reported. Excessive exposure can affect blood, nervous, and digestive systems. The synthesis of hemoglobin is inhibited and results in anemia. If left untreated, neuromuscular dysfunction, possible

paralysis, and encephalopathy can result. Additional symptoms of overexposure include: joint and muscle pain, weakness of the extensor muscles (frequently the hand and wrist), headache, dizziness, abdominal pain, diarrhea, constipation, nausea, vomiting, blue line on the gums, insomnia, and metallic taste. High body levels produce increased cerebrospinal pressure, brain damage, and stupor leading to coma and often death., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

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## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

No data available

### 12.2 Persistence and degradability

No data available

### 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 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life with long lasting effects.

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 2291      Class: 6.1      Packing group: III  
Proper shipping name: Lead compounds, soluble, n.o.s. (Lead dibromide)  
Reportable Quantity (RQ):  
Poison Inhalation Hazard: No

### IMDG

### IATA

UN number: 2291      Class: 6.1      Packing group: III  
Proper shipping name: Lead compound, soluble, n.o.s. (Lead dibromide)

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## 15. REGULATORY INFORMATION

### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### 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

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

Lead dibromide

CAS-No.  
10031-22-8Revision Date  
1993-04-24**Pennsylvania Right To Know Components**

Lead dibromide

CAS-No.  
10031-22-8Revision Date  
1993-04-24

Lead dibromide

CAS-No.  
10031-22-8Revision Date  
1993-04-24**New Jersey Right To Know Components**

Lead dibromide

CAS-No.  
10031-22-8Revision Date  
1993-04-24**California Prop. 65 Components**WARNING! This product contains a chemical known to the  
State of California to cause cancer.CAS-No.  
10031-22-8Revision Date  
2007-09-28

Lead dibromide

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**16. OTHER INFORMATION****Full text of H-Statements referred to under sections 2 and 3.**

|                 |                                                                    |
|-----------------|--------------------------------------------------------------------|
| Acute Tox.      | Acute toxicity                                                     |
| Aquatic Acute   | Acute aquatic toxicity                                             |
| Aquatic Chronic | Chronic aquatic toxicity                                           |
| Carc.           | Carcinogenicity                                                    |
| H302            | Harmful if swallowed.                                              |
| H302 + H332     | Harmful if swallowed or if inhaled.                                |
| H332            | Harmful if inhaled.                                                |
| H350            | May cause cancer.                                                  |
| H360            | May damage fertility or the unborn child.                          |
| H373            | May cause damage to organs through prolonged or repeated exposure. |

**HMIS Rating**

|                        |   |
|------------------------|---|
| Health hazard:         | 2 |
| Chronic Health Hazard: | * |
| Flammability:          | 0 |
| Physical Hazard        | 0 |

**NFPA Rating**

|                    |   |
|--------------------|---|
| Health hazard:     | 2 |
| Fire Hazard:       | 0 |
| Reactivity Hazard: | 0 |

**Further information**

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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](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

**Preparation Information**

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956

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