

## Material Safety Data Sheet

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Version 1.3

According to 91/155/EEC

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1 - Product and Company Information

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Product Name LEAD OXIDE, RED, 99.99%  
Product Number 577847

Company Sigma-Aldrich Pte Ltd  
#08-01 Citilink Warehouse  
Singapore 118529  
Singapore

Technical Phone # 65 271 1089  
Fax 65 271 1571

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2 - Composition/Information on Ingredients

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| Product Name       | CAS #     | EC no     | Annex I<br>Index Number |
|--------------------|-----------|-----------|-------------------------|
| LEAD (II,IV) OXIDE | 1314-41-6 | 215-235-6 | 082-007-00-9            |

Formula Pb304  
Molecular Weight 685.57 AMU  
Synonyms C.I. 77578 \* C.I. Pigment Red 105 \* Gold  
satinobre \* Heuconin 5 \* Lead orthoplumbate \*  
Lead oxide (Pb304) \* Lead oxide (3:4) \* Lead  
Oxide Red \* Lead tetraoxide \* Lead tetroxide \*  
Mennige \* Mineral Orange \* Mineral Red \* Minium  
\* Minium Non-Setting RL 95 \* Orange Lead \* Paris  
Red \* Pigment Red 105 \* Plumboplumbic oxide \*  
Red Lead \* Red Lead Oxide \* Sandix \* Saturn Red  
\* Trilead tetraoxide \* Trilead tetroxide

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3 - Hazards Identification

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## SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

May cause harm to the unborn child. Harmful by inhalation and if  
swallowed. Danger of cumulative effects. Very toxic to aquatic  
organisms, may cause long-term adverse effects in the aquatic  
environment. Possible risk of impaired fertility.  
Repr. Cat.1 Repr. Cat.3

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4 - First Aid Measures

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## AFTER INHALATION

If inhaled, remove to fresh air. If breathing becomes difficult,  
call a physician.

## AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for  
at least 15 minutes. Remove contaminated clothing and shoes.  
Call a physician.

## AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of

water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

#### AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

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### 5 - Fire Fighting Measures

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#### EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

#### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions. Contact with other material may cause fire. May accelerate combustion.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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### 6 - Accidental Release Measures

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#### PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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### 7 - Handling and Storage

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#### HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Conditions of Storage: Keep tightly closed. Keep away from combustible materials, heat, sparks, and open flame.

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### 8 - Exposure Controls / Personal Protection

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#### ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath.

#### GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Remove and wash contaminated clothing promptly. Discard contaminated shoes.

#### EXPOSURE LIMITS - DENMARK

| Source | Type | Value                 |
|--------|------|-----------------------|
| OEL    | TWA  | 0.1 mg/m <sup>3</sup> |

#### EXPOSURE LIMITS - UNITED KINGDOM

| Source | Type | Value                      |
|--------|------|----------------------------|
| OEL    | LTEL | 0.15 MG(PB)/M <sup>3</sup> |

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

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9 - Physical and Chemical Properties

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|                       |                       |                            |
|-----------------------|-----------------------|----------------------------|
| Appearance            | Physical State: Solid |                            |
| Property              | Value                 | At Temperature or Pressure |
| pH                    | N/A                   |                            |
| BP/BP Range           | N/A                   |                            |
| MP/MP Range           | N/A                   |                            |
| Flash Point           | N/A                   |                            |
| Flammability          | N/A                   |                            |
| Autoignition Temp     | N/A                   |                            |
| Oxidizing Properties  | N/A                   |                            |
| Explosive Properties  | N/A                   |                            |
| Explosion Limits      | N/A                   |                            |
| Vapor Pressure        | 10 mmHg               |                            |
| SG/Density            | N/A                   |                            |
| Partition Coefficient | N/A                   |                            |
| Viscosity             | N/A                   |                            |
| Vapor Density         | N/A                   |                            |
| Saturated Vapor Conc. | N/A                   |                            |
| Evaporation Rate      | N/A                   |                            |
| Bulk Density          | N/A                   |                            |
| Decomposition Temp.   | N/A                   |                            |
| Solvent Content       | N/A                   |                            |
| Water Content         | N/A                   |                            |
| Surface Tension       | N/A                   |                            |
| Conductivity          | N/A                   |                            |
| Miscellaneous Data    | N/A                   |                            |
| Solubility            | N/A                   |                            |

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10 - Stability and Reactivity

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STABILITY

Stable: Stable.

Materials to Avoid: Strong reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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11 - Toxicological Information

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RTECS NUMBER: OG5425000

ACUTE TOXICITY

LD50  
Intraperitoneal  
Rat  
630 MG/KG

LD50  
Intraperitoneal

Mouse  
17700 MG/KG

LD50  
Intraperitoneal  
Guinea pig  
220 MG/KG

#### SIGNS AND SYMPTOMS OF EXPOSURE

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.

#### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.  
Skin Absorption: May be harmful if absorbed through the skin.  
Eye Contact: Causes eye irritation.  
Inhalation: Material is irritating to mucous membranes and upper respiratory tract. Harmful if inhaled.  
Ingestion: Harmful if swallowed.

#### TARGET ORGAN INFORMATION

Blood. Kidneys. Nerves. Female reproductive system. Male reproductive system.

#### CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

#### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Result: May cause reproductive disorders.

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#### 12 - Ecological Information

No data available.

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#### 13 - Disposal Considerations

#### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

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#### 14 - Transport Information

RID/ADR

UN#: 1479

Class: 5.1  
PG: II  
Proper Shipping Name: Oxidizing solid, n.o.s.

IMDG

UN#: 1479  
Class: 5.1  
PG: II  
Proper Shipping Name: Oxidizing solid, n.o.s.  
Marine Pollutant: No  
Severe Marine Pollutant: No  
Technical Name: Required

IATA

UN#: 1479  
Class: 5.1  
PG: II  
Proper Shipping Name: Oxidizing solid, n.o.s.  
Inhalation Packing Group I: No  
Technical Name: Required

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15 - Regulatory Information

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CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

ANNEX I INDEX NUMBER: 082-007-00-9

NOTA: A, E

INDICATION OF DANGER: T N

Toxic. Dangerous for the environment.

R-PHRASES: 61 20/22 33 50/53 62

May cause harm to the unborn child. Harmful by inhalation and if swallowed. Danger of cumulative effects. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of impaired fertility.

S-PHRASES: 53 45 60 61

Restricted to professional users. Attention - Avoid exposure - obtain special instructions before use. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

SWITZERLAND

SWISS POISON CLASS: 3

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16 - Other Information

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WARRANTY

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 Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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