

Material Safety Data Sheet

Lead Dioxide

ACC# 12600

Section 1 - Chemical Product and Company Identification

MSDS Name: Lead Dioxide

Catalog Numbers: S75100, S75100-3

Synonyms: Lead oxide brown; lead peroxide; Lead brown; Lead superoxide

Company Identification:

Fisher Scientific

1 Reagent Lane

Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

| CAS# | Chemical Name | Percent | EINECS/ELINCS |
|-----------|---------------|---------|---------------|
| 1309-60-0 | Lead Dioxide | 100 | 215-174-5 |

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: dark brown solid.

Danger! Oxidizer. Causes eye and skin irritation. Contact with other material may cause fire. Causes digestive and respiratory tract irritation. May cause cancer based on animal studies. May cause kidney damage. May cause central nervous system effects. This substance has caused adverse reproductive and fetal effects in animals.

Target Organs: Kidneys, central nervous system, blood forming organs.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. Many lead compounds can cause toxic effects in the blood-forming organs, kidneys and central nervous

Inhalation: Causes respiratory tract irritation. May cause effects similar to those described for ingestion.

Chronic: Chronic exposure to lead may result in plumbism which is characterized by lead line in gum, headache, muscle weakness, mental changes.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated

clothing and shoes. Get medical aid if irritation develops or persists.

Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Antidote: The use of Dimercaprol or BAL (British Anti-Lewisite) as a chelating agent should be determined by qualified medical personnel. The use of Calcium disodium EDTA as a chelating agent should be determined by qualified medical personnel. The use of d-Penicillamine as a chelating agent should be determined by qualified medical personnel.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustion generates toxic fumes. Oxidizer. Greatly increases the burning rate of combustible materials.

Extinguishing Media: Use water only!

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 1; Special Hazard: OX

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid ingestion and inhalation. Keep from contact with clothing and other combustible materials. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Do not store near combustible materials. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

| Chemical Name | ACGIH | NIOSH | OSHA - Final PELs |
|---------------|---|---|---|
| Lead Dioxide | 0.05 mg/m ³ TWA (as Pb) (listed under Lead, inorganic compounds). | 0.050 mg/m ³ TWA (as Pb) (listed under Lead compounds). | 50 æg/m ³ TWA (as Pb) (listed under Lead, inorganic compounds). 50 æg/m ³ TWA (as Pb); 30 æg/m ³ Action Level (as Pb, Poison - see 29 CFR 1910.102 5) (listed under Lead, inorganic compounds). |

OSHA Vacated PELs: Lead Dioxide: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Appearance: dark brown

Odor: none reported

pH: Not available.

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Evaporation Rate: Not applicable.

Viscosity: Not applicable.

Boiling Point: Not applicable.

Freezing/Melting Point: 290 deg C

Decomposition Temperature: 290 deg C

Solubility: Insoluble in water.

Specific Gravity/Density: 9.375

Molecular Formula: PbO₂

Molecular Weight: 239.1988

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, combustible materials, reducing agents.

Incompatibilities with Other Materials: Aluminum carbide, barium sulfide, boron calcium sulfide, cesium, acetylene, carbide, chlorine trifluoride, hydrogen peroxide, hydrogen sulfide, hydroxylamine, molybdenum, peroxyformic acid, phenyl hydrazine, phosphorus, phosphorus trichloride, sulfur, sulfuric chloride, tungsten and zirconium.

Hazardous Decomposition Products: Irritating and toxic fumes and gases.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 1309-60-0: OG0700000

LD50/LC50:

Not available.

Carcinogenicity:

CAS# 1309-60-0:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans (listed as 'Lead, inorganic compounds').
- **California:** carcinogen, initial date 10/1/92 (listed as Lead compounds).

- **NTP:** Suspect carcinogen (listed as Lead compounds).
- **IARC:** Group 2A carcinogen (listed as Lead, inorganic compounds).

Epidemiology: Repeated exposure to lead has caused many toxic effects including: neurological changes, kidney damage, and blood abnormalities.

Teratogenicity: Specific Developmental Abnormalities: Cardiovascular and Homeostasis, ivn-hamster TDLo=50mg/kg; Central Nervous System, oral-rat TDLo=36mg/kg; Musculoskeletal, ivn-rat TDLo=25mg/kg.

Reproductive Effects: No data available.

Mutagenicity: No data available.

Neurotoxicity: No data available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: No information reported.

Physical: No information available.

Other: May be toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

| | US DOT | Canada TDG |
|-----------------------|--------------|---------------------------|
| Shipping Name: | LEAD DIOXIDE | No information available. |
| Hazard Class: | 5.1 | |
| UN Number: | UN1872 | |
| Packing Group: | III | |

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 1309-60-0 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313

This material contains Lead Dioxide (listed as Lead, inorganic compounds), 100%, (CAS# 1309-60-0) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 1309-60-0 (listed as Lead compounds) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA. CAS# 1309-60-0 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 1309-60-0 can be found on the following state right to know lists: California, (listed as Lead compounds), New Jersey, Pennsylvania, (listed as Lead compounds), Minnesota, (listed as Lead, inorganic compounds), Massachusetts.

California Prop 65**The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:**

WARNING: This product contains Lead Dioxide, listed as 'Lead compounds', a chemical known to the state of California to cause cancer. WARNING: This product contains Lead Dioxide, listed as 'Lead, inorganic compounds', a chemical known to the state of California to cause developmental reproductive toxicity. California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

T N

Risk Phrases:

R 20/22 Harmful by inhalation and if swallowed.

R 33 Danger of cumulative effects.

R 61 May cause harm to the unborn child.

R 62 Possible risk of impaired fertility.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.

S 60 This material and its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 1309-60-0: 0

Canada - DSL/NDL

CAS# 1309-60-0 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of C, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 1309-60-0 (listed as Lead, inorganic compounds) is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 12/12/1997

Revision #7 Date: 11/08/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.