

Environmental Hazard

See Section 12 for additional Ecological Information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name | CAS-No | Weight % |
|---------------|------------|----------|
| Lead | 7439-92-1 | 40-70 |
| Lead peroxide | 1309-60-0 | 15-40 |
| Sulfuric acid | 7664-93-9 | 5-10 |
| Glass, oxide | 65997-17-3 | 1 - 5 |

4. FIRST AID MEASURES

| | |
|-----------------------------------|---|
| General Advice | First aid is upon rupture of sealed battery. |
| Eye Contact | Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. |
| Skin Contact | Immediate medical attention is required. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. |
| Inhalation | Move to fresh air. Call a physician or Poison Control Center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. |
| Ingestion | Immediate medical attention is required. Call a physician or Poison Control Center immediately. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. |
| Notes to Physician | Treat symptomatically. |
| Protection of First-aiders | Use personal protective equipment. Avoid contact with skin, eyes and clothing. |

5. FIRE-FIGHTING MEASURES

| | |
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| Flammable Properties | Not flammable. |
| Flash Point | Not determined. |
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Uniform Fire Code | <ul style="list-style-type: none"> • Corrosive: Acid-Liquid • Toxic: Solid |
| Hazardous Combustion Products | Hazardous metal fumes and oxides. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | No. |
| Sensitivity to Static Discharge | No. |
| Specific Hazards Arising from the Chemical | The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. |

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA **Health Hazard 3** **Flammability 0** **Stability 2** **Physical and Chemical Hazards -**

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal Precautions | Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not get in eyes, on skin, or on clothing. |
| Environmental Precautions | Refer to protective measures listed in Sections 7 and 8. |
| Methods for Containment | Prevent further leakage or spillage if safe to do so. |
| Methods for Cleaning Up | In case of rupture: Use personal protective equipment. Dam up. Soak up with inert absorbent material. Take up mechanically and collect in suitable container for disposal. Clean contaminated surface thoroughly. |
| Other Information | Refer to protective measures listed in Sections 7 and 8. |

7. HANDLING AND STORAGE

| | |
|-----------------|--|
| Handling | In case of rupture: Wear personal protective equipment. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. |
| Storage | Keep containers tightly closed in a dry, cool and well-ventilated place. |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|----------------------------|---|--|---|
| Lead 7439-92-1 | TWA: 0.05 mg/m ³ | TWA: 50 µg/m ³ Action Level: 30 µg/m ³ Poison, See 29 CFR 1910.1025 | IDLH: 100 mg/m ³ TWA: 0.050 mg/m ³ |
| Lead peroxide 1309-60-0 | TWA: 0.05 mg/m ³ Pb | TWA: 50 µg/m ³ Pb Action Level: 30 µg/m ³ Pb Poison, See 29 CFR 1910.1025 | IDLH: 100 mg/m ³ Pb TWA: 0.050 mg/m ³ Pb |
| Sulfuric acid 7664-93-9 | TWA: 0.2 mg/m ³ thoracic fraction | TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³ | IDLH: 15 mg/m ³ TWA: 1 mg/m ³ |
| Glass, oxide 65997-17-3 | TWA: 1 fiber/cm ³ respirable fibers: length >5 µm, aspect ratio >=3:1, as determined by the membrane filter method at 400-450X magnification [4-mm objective], using phase-contrast illumination TWA: 5 mg/m ³ inhalable fraction | | |

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering Measures Showers
Eyewash stations
Ventilation systems

Personal Protective Equipment

Eye/Face Protection

Tightly fitting safety goggles.

Skin and Body Protection

Wear protective gloves/clothing.

Respiratory Protection

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-----------------------------------|---|---|--------------------------------|
| Appearance | Black. | Odor | Acidic. |
| Odor Threshold | No information available | Physical State | Solid containing liquid. Solid |
| pH | No information available ¹⁻² | Autoignition Temperature | No information available |
| Flash Point | No information available. | Boiling Point/Range | 235°C / 455°F |
| Decomposition Temperature | No information available | Explosion Limits | No information available |
| Melting Point/Range | No information available | Solubility | No information available |
| Flammability Limits in Air | No information available | Vapor Pressure | No data available |
| Water Solubility | Immiscible in water | Partition Coefficient: n-octanol/water | |
| Evaporation Rate | No information available | | |
| Vapor Density | No data available | | |

10. STABILITY AND REACTIVITY

| | |
|---|---|
| Stability | Stable under recommended storage conditions. |
| Incompatible Products | Incompatible with strong acids and bases. Incompatible with oxidizing agents. |
| Conditions to Avoid | Exposure to air or moisture over prolonged periods. |
| Hazardous Decomposition Products | Thermal decomposition can lead to release of toxic/corrosive gases and vapors |
| Hazardous Polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| | |
|-------------------------------------|---|
| Product Information | In case of rupture: |
| LD50 Oral VALUE | 7088.444 mg/kg (rat) estimated |
| LC50 Inhalation (DUST) VALUE | 3.3786 mg/L (mist) (dust) mg/m ³ estimated |
| Eye Contact | Irritating to eyes. |
| Skin Contact | Irritating to skin. |

Chronic Toxicity

| | |
|-------------------------|--|
| Chronic Toxicity | Lead compounds may be absorbed by ingestion, by inhalation and through the skin. Lead may damage kidney function, the blood forming system and the reproductive system. Avoid repeated exposure. |
|-------------------------|--|

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical Name | ACGIH | IARC | NTP | OSHA |
|---------------|-------|----------|------------------------|------|
| Lead | A3 | Group 2A | Reasonably Anticipated | X |
| Lead peroxide | A3 | Group 2A | Reasonably Anticipated | X |
| Sulfuric acid | A2 | Group 1 | Known | X |
| Glass, oxide | | Group 3 | | |

ACGIH: (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 3 - Not Classifiable as to Carcinogenicity in Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

OSHA: (Occupational Safety & Health Administration)

X - Present

| | |
|-------------------------------|---|
| Reproductive Toxicity | Product is or contains a chemical which is a known or suspected reproductive hazard. |
| Developmental Toxicity | Contains ingredients that have suspected developmental hazards |
| Target Organ Effects | Blood. Reproductive system. Damage to fetus possible Central nervous system (CNS). Eyes. Gastrointestinal tract (GI). Gingival Tissue. Kidney. Respiratory system. Skin. Teeth. |

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

| Chemical Name | Toxicity to Algae | Toxicity to Fish | Toxicity to Microorganisms | Daphnia Magna (Water Flea) |
|---------------|-------------------|---|----------------------------|---|
| Lead | | LC50: 0.44 mg/L (96 h semi-static) <i>Cyprinus carpio</i> LC50: 1.17 mg/L (96 h flow-through) <i>Oncorhynchus mykiss</i> LC50: 1.32 mg/L (96 h static) <i>Oncorhynchus mykiss</i> | | EC50: 600 µg/L (48 h) water flea |
| Sulfuric acid | | LC50: > 500 mg/L (96 h static) <i>Brachydanio rerio</i> | | EC50: 29 mg/L (24 h) <i>Daphnia magna</i> |

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods This material, as supplied, is a hazardous waste according to federal regulations (40 CFR 261). Should not be released into the environment.

Contaminated Packaging Do not re-use empty containers.

US EPA Waste Number D002
D008

| Chemical Name | RCRA | RCRA - Basis for Listing | RCRA - D Series Wastes | RCRA - U Series Wastes |
|------------------|---|---|-----------------------------|------------------------|
| Lead - 7439-92-1 | (hazardous constituent - no waste number) | Included in waste streams: F035, F037, F038, F039, K002, K003, K005, K046, K048, K049, K051, K052, K061, K062, K064, K065, K066, K069, K086, K100, K176 | = 5.0 mg/L regulatory level | |

California Hazardous Waste Codes 792

This product contains one or more substances that are listed with the State of California as a hazardous waste.

| Chemical Name | California EHW | California Carc | California Hazardous Waste | California Waste - Part 2 |
|---------------|----------------|-----------------|----------------------------|--|
| Lead | | | Toxic | TCLP (for CA Toxicity): 5.0 mg/L |
| Lead peroxide | | | Toxic | STLC (for PBTs): 5.0 mg/L TTLC (for PBTs): 1000 mg/kg |
| Sulfuric acid | | | Toxic Corrosive | |

14. TRANSPORT INFORMATION

DOT NOT REGULATED

TDG Not regulated

MEX Not regulated

ICAO Not regulated

14. TRANSPORT INFORMATION

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL Not determined

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

| Chemical Name | CAS-No | Weight % | SARA 313 - Threshold Values % |
|---------------|-----------|----------|-------------------------------|
| Lead | 7439-92-1 | 40-70 | 0.1 |
| Lead peroxide | 1309-60-0 | 15-40 | 0.1 |
| Sulfuric acid | 7664-93-9 | 5-10 | 1.0 |

SARA 311/312 Hazard Categories

Acute Health Hazard Yes
Chronic Health Hazard Yes
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactive Hazard No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Lead | | X | X | |
| Lead peroxide | | X | | |
| Sulfuric acid | 1000 lb | | | X |

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following substances which are listed hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act:

| Chemical Name | CAS-No | Weight % | HAPS data | VOC Chemicals | Class 1 Ozone Depletors | Class 2 Ozone Depletors |
|---------------|------------|----------|---|---------------|-------------------------|-------------------------|
| Lead | 7439-92-1 | 40-70 | | | | |
| Lead peroxide | 1309-60-0 | 15-40 | | | | |
| Glass, oxide | 65997-17-3 | 1 - 5 | Present (includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers [or other mineral derived fibers] of average diameter 1 µm or less) | | | |

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs |
|---------------|--------------------------|------------------------------------|
| Lead | 10 lb | |
| Sulfuric acid | 1000 lb | 1000 lb |

U.S. State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals:

| Chemical Name | CAS-No | California Prop. 65 |
|---------------|-----------|---|
| Lead peroxide | 1309-60-0 | Carcinogen Developmental Female Reproductive Male Reproductive |
| Lead | 7439-92-1 | Carcinogen Developmental Female Reproductive Male Reproductive |
| Sulfuric acid | 7664-93-9 | Carcinogen |

U.S. State Right-to-Know Regulations

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| Lead peroxide | X | X | X | X | X |
| Lead | X | X | X | X | X |
| Tin | X | X | X | | |
| Sulfuric acid | X | X | X | X | X |

International Regulations**Mexico - Grade**

Minimum risk, Grade 0

| Chemical Name | Carcinogen Status | Exposure Limits |
|---------------|-------------------|---|
| Lead peroxide | A3 | Mexico: TWA 0.15 mg/m ³ |
| Lead | A3 | Mexico: TWA= 0.15 mg/m ³ |
| Tin | | Mexico: TWA 2 mg/m ³ Mexico: STEL 4 mg/m ³ |
| Sulfuric acid | A2 | Mexico: TWA 1 mg/m ³ |

Canada

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

WHMIS Hazard Class

D2A Very toxic materials

E Corrosive material

D1B Toxic materials



| Chemical Name | NPRI |
|---------------|------|
| Lead | X |
| Sulfuric acid | X |

Legend

NPRI - National Pollutant Release Inventory

16. OTHER INFORMATION

Prepared By Product Stewardship
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General Disclaimer

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End of Safety Data Sheet