Section 1. Chemical Product and Company Identification

Common Name/Trade Name: Zinc oxide

Manufacturer: SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

Commercial Name(s): Calamine
Synonym: Zinc white

Chemical Name: Zinc Oxide
Chemical Family: Not available.
Chemical Formula: ZnO

Supplier: SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

Catalog Number(s): XX742, XX074, Z1080, Z1083, Z1085, Z1088

CAS#: 1314-13-2

RTECS: ZH810000
TSCA: TSCA 8(b) inventory: Zinc oxide

CI#: Not available.

In case of emergency: CHEMREC (24hr) 800-424-9300
CALL (310) 516-8000

Section 2. Composition and Information on Ingredients

Exposure Limits

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Zinc oxide</td>
<td>1314-13-2</td>
<td>5</td>
<td>10</td>
<td>25</td>
<td>100</td>
</tr>
</tbody>
</table>

Toxicological Data on Ingredients: Zinc oxide:

- Oral (LD50): Acute: 7950 mg/kg [Mouse].

Section 3. Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
- Carcinogenic Effects: Not available.
- Mutagenic Effects: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.
- Teratogenic Effects: Not available.
- Developmental Toxicity: Not available.

Repeated or prolonged exposure is not known to aggravate medical condition.

Continued on Next Page
### Section 4. First Aid Measures

<table>
<thead>
<tr>
<th>Eye Contact</th>
<th>Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Contact</td>
<td>Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.</td>
</tr>
<tr>
<td>Serious Skin Contact</td>
<td>Not available.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.</td>
</tr>
<tr>
<td>Serious Inhalation</td>
<td>Not available.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.</td>
</tr>
<tr>
<td>Serious Ingestion</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### Section 5. Fire and Explosion Data

<table>
<thead>
<tr>
<th>Flammability of the Product</th>
<th>Non-flammable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-Ignition Temperature</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Flammable Limits</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Products of Combustion</td>
<td>Not available.</td>
</tr>
<tr>
<td>Fire Hazards in Presence of Various Substances</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Explosion Hazards in Presence of Various Substances</td>
<td>Not available.</td>
</tr>
<tr>
<td>Fire Fighting Media and Instructions</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Special Remarks on Fire Hazards</td>
<td>Slow addition of zinc oxide to cover linseed oil varnish causes generation of heat and ignition.</td>
</tr>
<tr>
<td>Special Remarks on Explosion Hazards</td>
<td>May explode when mixed with chlorinated rubber. Zinc Oxide and Magnesium can react explosively when heated.</td>
</tr>
</tbody>
</table>

### Section 6. Accidental Release Measures

<table>
<thead>
<tr>
<th>Small Spill</th>
<th>Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Spill</td>
<td>Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evaporate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.</td>
</tr>
</tbody>
</table>
**Section 7. Handling and Storage**

**Precautions**
Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibilities such as acids.

**Storage**
Keep container tightly closed. Keep container in a cool, well-ventilated area.

**Section 8. Exposure Controls/Personal Protection**

**Engineering Controls**
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection**
Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill**
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits**
- TWA: 5 STEL: 10 (mg/m³) from ACGIH [TLV] [United States] Inhalation
- TWA: 15 (mg/m³) from OSHA [PEL] [United States] Inhalation Total.
- TWA: 5 STEL 10 CEIL: 25 (mg/m³) from NIOSH Inhalation
- TWA: 5 STEL: 10 (mg/m³) from OSHA [PEL] [United States] Inhalation Respirable.

Consult local authorities for acceptable exposure limits.

**Section 9. Physical and Chemical Properties**

**Physical state and appearance**
Solid. (Powdered solid.)

**Molecular Weight**
81.38 g/mole

**pH (1% soln/water)**
Not applicable.

**Boiling Point**
Not available.

**Melting Point**
1975°C (3587°F)

**Critical Temperature**
Not available.

**Specific Gravity**
5.607 (Water = 1)

**Vapor Pressure**
Not applicable.

**Vapor Density**
Not available.

**Volatility**
Not available.

**Odor Threshold**
Not available.

**Water/Oil Dist. Coeff.**
Not available.

**Iodinity (in Water)**
Not available.

**Dispersion Properties**
Is not dispersed in cold water, hot water.

**Solubility**
Insoluble in cold water, hot water. Soluble in dilute acetic acid, or mineral acids, ammonia, ammonium carbonate, fixed alkali hydroxide solution.

*Continued on Next Page*
### Section 10. Stability and Reactivity Data

**Stability**  
The product is stable.

**Instability Temperature**  
Not available.

**Conditions of Instability**  
Not available.

**Incompatibility with various substances**  
Not available.

**Corrosivity**  
Non-corrosive in presence of glass.

**Special Remarks on Reactivity**  
Reacts violently with magnesium, linseed oil.  
Reacts with hydrochloric acid to produce zinc chloride.  
Reacts with sulfuric acid to produce zinc sulfate.  
Reacts with hydrogen fluoride to produce zinc fluoride tetrahydrate.  
Gradually absorbs CO2 on exposure to air.  
Sublimes at normal pressure.  
Zinc Oxide reacts with Carbon Monoxide or hydrogen to produce elemental zinc.

**Special Remarks on Corrosivity**  
Not available.

**Polymerization**  
Will not occur.

### Section 11. Toxicological Information

**Routes of Entry**  
Dermal contact, Inhalation, Ingestion.

**Toxicity to Animals**  
Acute oral toxicity (LD50): 7950 mg/kg [Mouse].

**Chronic Effects on Humans**  
MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast.

**Other Toxic Effects on Humans**  
Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

**Special Remarks on Toxicity to Animals**  
Not available.

**Special Remarks on Chronic Effects on Humans**  
May cause adverse reproductive effects based on animal data. No human data found at this time. May affect genetic material (mutagenic).

**Special Remarks on other Toxic Effects on Humans**  
Acute Potential Health Effects: May cause mild skin irritation. Eyes: May cause mechanical eye irritation and conjunctivitis. Inhalation: May cause mechanical irritation of the respiratory tract. A few sources claim that finely divided zinc oxide dust can cause "metal fume fever." Zinc oxide dust is generally considered a nuisance dust; adverse effects are unlikely when exposures are kept under reasonable control. Inhalation of high concentrations of Zinc Oxide fume or dust may cause "Metal Fume Fever." Symptoms of metal fume fever may include a flu-like condition involving headache, chills, fever, sweats, nausea, vomiting, cough, muscle aches and pains, and difficulty breathing, pulmonary edema. May also affect the liver. Ingestion: May cause digestive tract irritation although Zinc oxide has a low toxicity by oral exposure route. Chronic Potential Health Effects: Ingestion: Prolonged or repeated ingestion of zinc oxide may affect blood, metabolism, and the thyroid.

### Section 12. Ecological Information

**Ecotoxicity**  
Not available.

**BODS and COD**  
Not available.

**Products of Biodegradation**  
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

**Toxicity of the Products of Biodegradation**  
The product itself and its products of degradation are not toxic.

Continued on Next Page
Zinc oxide

Section 13. Disposal Considerations

Waste Disposal
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification
Not a DOT controlled material (United States).

Identification
Not applicable.

Special Provisions for Transport
Not applicable.

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations
- Illinois toxic substances disclosure to employee act: Zinc oxide
- Rhode Island RIK hazardous substances: Zinc oxide
- Pennsylvania RIK: Zinc oxide
- Minnesota: Zinc oxide
- Massachusetts RIK: Zinc oxide
- New Jersey: Zinc oxide
- California Director's List of Hazardous Substances: Zinc oxide
- TSCA 8(b) inventory: Zinc oxide
- SARA 313 toxic chemical notification and release reporting: Zinc oxide (Listed as Zinc Compounds)

California Proposition 65
- Warnings: California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
- Warnings: California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations
- EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 215-222-5).
- Canada: Listed on Canadian Domestic Substance List (DSL).
- China: Listed on National Inventory.
- Japan: Listed on National Inventory (ENCS).
- Korea: Listed on National Inventory (KEC).
- Philippines: Listed on National Inventory (PICCS).
- Australia: Listed on AICS.

Other Classifications
- WHMIS (Canada): Not controlled under WHMIS (Canada).
- DSCL (IEC): R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- S60: This material and its container must be disposed of as hazardous waste.
- S61: Avoid release to the environment. Refer to special instructions/safety data sheets.

HMIS (U.S.A.)
- Health: 1
- Fire Hazard: 0
- Reactivity: 0
- Personal Protection: 2

National Fire Protection Association (U.S.A.)

Continued on Next Page
### Zinc Oxide

**WHMIS (Canada)**
(Pictograms)

**DSCL (Europe)**
(Pictograms)

**TDG (Canada)**
(Pictograms)

**ADR (Europe)**
(Pictograms)

### Protective Equipment
- Gloves
- Lab coat
- Dust respirator. Be sure to use an approved/certified respirator or equivalent.
- Safety glasses

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### Section 16. Other Information

**MSDS Code**  Z9140

**References**  Not available.

**Other Special Considerations**  Not available.

Validated by Sonia Owen on 10/17/2008.

Verified by Sonia Owen.

**CALL (310) 516-8000**

Printed 10/22/2008.

**Notice to Reader**

Continued on Next Page
Zinc oxide

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.