

Material Safety Data Sheet

Material Name: Zinc Carbonate Solid

ID: MRD-002

*** Section 1 - Chemical Product and Company Identification ***

Chemical Name: Zinc Carbonate Solid

Synonyms: Hydrozincite, Basic zinc carbonate

Manufacturer Information

MINERAL RESEARCH AND DEVELOPMENT
5910 Pharr Mill Road
PO Box 1330
Harrisburg, NC 28075

Phone: 704-455-5181

Emergency # CHEMTREC: (800) 424-9300 / (703) 527-3887

General Comments

NOTE: Emergency telephone numbers are to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to customer service.

*** Section 2 - Composition / Information on Ingredients ***

| CAS # | Component | Percent |
|------------|--|---------|
| 12122-17-7 | Basic zinc carbonate, $Zn_5(CO_3)_2(OH)_6$ | 100 |

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Zinc compounds, Zinc (7440-66-6), Nuisance particulates.

Component Information/Information on Non-Hazardous Components

This product is considered hazardous (Irritant) under 29 CFR 1910.1200 (Hazard Communication). This product is considered hazardous under the criteria specified in the Canadian Workplace Hazardous Materials Information System (WHMIS).

*** Section 3 - Hazards Identification ***

Emergency Overview

Product is a non-flammable, white, odorless solid. Contact with this material may cause irritation to the skin, eyes and mucous membranes. Irritating and toxic fumes and gases may be released upon thermal processing or during combustion. Use methods suitable to fight surrounding fire.

Potential Health Effects: Eyes

This product may cause irritation to the eyes. Dust or powder may irritate eye tissue. Rubbing may cause abrasion of cornea.

Potential Health Effects: Skin

Dust or powder may irritate the skin. Prolonged and/or repeated skin contact may result in mild irritation or redness.

Potential Health Effects: Ingestion

Ingestion of this product may cause nausea, vomiting and diarrhea.

Potential Health Effects: Inhalation

Dusts of this product may cause irritation of the nose, throat, and respiratory tract. Fumes released during thermal processing may irritate respiratory system, skin and eyes.

Medical Conditions Aggravated by Exposure

None identified.

HMIS Ratings: Health: 1 Fire: 1 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 4 - First Aid Measures ***

First Aid: Eyes

Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists get medical attention.

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First Aid: Skin

For skin contact, wash immediately with soap and water. If irritation persists get medical attention.

First Aid: Ingestion

Give 1-2 glasses of water. Do not induce vomiting unless directed to do so by medical personnel. If ingestion of a large amount does occur, seek medical attention.

First Aid: Inhalation

If symptoms are experienced, remove source of contamination or move victim to fresh air. Call a physician if symptoms develop or persist.

First Aid: Notes to Physician

Provide general supportive measures and treat symptomatically.

*** Section 5 - Fire Fighting Measures ***

Flash Point: Not combustible

Upper Flammable Limit (UFL): Not available

Auto Ignition: Not applicable

Rate of Burning: Not available

General Fire Hazards

Not expected to be a fire hazard unless fine dusts are generated.

Hazardous Combustion Products

Decomposition may yield oxides of zinc. Carbon monoxide and carbon dioxide.

Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self contained breathing apparatus.

NFPA Ratings: Health: 1 Fire: 1 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Method Used: Not available

Lower Flammable Limit (LFL): Not available

Flammability Classification: Not available

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Contain the discharged material. Block any potential routes to water systems. If sweeping of a contaminated area is necessary, use a dust suppressant agent.

Clean-Up Procedures

Sweep up or gather material and place in appropriate container for disposal. Avoid the generation of dusts during clean-up. Collect dust or particulates using a vacuum cleaner with a HEPA filter. Flush area with water to remove trace residue. Wear appropriate protective equipment and clothing during clean-up.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away.

Special Procedures

Wear a dust mask if dust is generated above exposure limits. Regulations vary. Consult local authorities before disposal.

*** Section 7 - Handling and Storage ***

Handling Procedures

Avoid getting this material into contact with your skin and eyes. Do not breathe fumes or dust from this material. Wash hands after handling and before eating.

Storage Procedures

Store in a cool, dry, well-ventilated area. Keep the container tightly closed.

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

Exposure Guidelines

A: General Product Information

Follow all applicable exposure limits.

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B: Component Exposure Limits

Basic zinc carbonate (12122-17-7)

- ACGIH: 10 mg/m³ TWA (inhalable fraction); 3 mg/m³ TWA (respirable fraction) (These values are for particulate matter containing no asbestos and <1% crystalline silica) (related to Particulates not otherwise classified (PNOC))
- OSHA total dust: 15 mg/m³ TWA; respirable fraction: 5 mg/m³ TWA (related to Particulates not otherwise regulated)
- Vacated: otherwise regulated)
- OSHA Final: 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction) (related to Particulates not otherwise regulated)
- NIOSH: see Appendix D (related to Particulates not otherwise regulated)

Engineering Controls

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear dust goggles.

Personal Protective Equipment: Skin

Use impervious gloves.

Personal Protective Equipment: Respiratory

If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

Personal Protective Equipment: General

Eye wash fountain and emergency showers are recommended.

*** Section 9 - Physical & Chemical Properties ***

| | |
|---|--|
| Appearance: White solid | Odor: Odorless |
| Physical State: Solid | pH: Approx. 9 - 10 |
| Vapor Pressure: Not Determined | Vapor Density: Not Determined |
| Boiling Point: Not Determined | Melting Point: Decomposes @ 572°F (300°C) |
| Solubility (H₂O): Insoluble | Specific Gravity: 4.398 |
| Evaporation Rate: Not Determined | Percent Volatile: Not Determined |

Physical Properties: Additional Information

No additional information available.

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Stable under normal conditions.

Chemical Stability: Conditions to Avoid

Avoid extreme heat and contact with incompatible materials.

Incompatibility

This product may react with strong acids.

Hazardous Decomposition

Upon decomposition, this product emits carbon monoxide, carbon dioxide, and zinc oxides.

Hazardous Polymerization

Will not occur.

*** Section 11 - Toxicological Information ***

Acute and Chronic Toxicity

A: General Product Information

Inhalation of zinc oxide fumes may cause metal fume fever, a flu-like illness generally lasting 24 hours or less.

B: Component Analysis - LD50/LC50

No LD50/LC50's are available for this product's components.

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Carcinogenicity

A: General Product Information

No carcinogenicity data available for this product.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Chronic Toxicity

No information available for the product.

Epidemiology

No epidemiological data is available for this product.

Neurotoxicity

No data available for this product.

Mutagenicity

No data available for this product.

Teratogenicity

No data available for this product.

Other Toxicological Information

No additional information available.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

No additional information available.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Basic zinc carbonate (12122-17-7)

Test & Species

LC50 (96 hr) fathead minnow
LC50 (96 hr) rainbow trout
LC50 (96 hr) bluegill
IC50 (96 hr) freshwater algae
(Selenastrum capricornutum)
LC50 (72 hr) water flea

6400 - 10,900 ug/L
4800 - 7200 ug/L
5400 ug/L
30 ug/L
5 - 14 ug/L

Conditions

100 mg CaCO₃/L
juveniles, 333 - 504 mg CaCO₃/L
20 mg CaCO₃/L (related to Zinc)
(related to Zinc)
30 °C (related to Zinc)

Environmental Fate

No additional information available.

* * * Section 13 - Disposal Considerations * * *

US EPA Waste Number & Descriptions

A: General Product Information

Wastes must be tested using methods described in 40 CFR Part 261 to determine if it meets applicable definitions of hazardous wastes.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

* * * Section 14 - Transportation Information * * *

US DOT Information

Shipping Name: Not regulated for transportation

Hazard Class: None

UN/NA #: None

Packing Group: None

Required Label(s): None

Additional Info.: The type of Zinc carbonate in this product is not specifically regulated under DOT 49 CFR.

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Canada Transportation of Dangerous Goods Information

Shipping Name: Not regulated for transportation

Hazard Class: None

UN/NA #: None

Packing Group: None

Required Label(s): None

Additional Info.: The type of Zinc carbonate in this product is not specifically regulated under the Canadian TDG.

International Transportation Regulations

No additional information available.

*** Section 15 - Regulatory Information ***

US Federal Regulations

A: General Product Information

Note: The statutory RQ listed below is for zinc compounds. A final RQ for Basic zinc carbonate has not yet been assigned. Zinc has a final RQ = 1000 pounds (454 kg).

B: Component Analysis

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).

Basic zinc carbonate (12122-17-7)

SARA 313: form R reporting required for 1.0% de minimis concentration; Chemical Category N982 (related to Zinc compounds)

SARA 311/312: Acute Health: Yes Chronic: No Health: No Fire: No Pressure: No Reactive: No

CERCLA: statutory RQ = 1 pound (0.454 kg) (related to Zinc compounds)

State Regulations

A: General Product Information

Other state regulations may apply. Check individual state requirements.

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

| Component | CAS # | CA | FL | MA | MN | NJ | PA |
|--|------------|------|------|------|----|------|------|
| Basic zinc carbonate (¹related to Zinc compounds) (²related to Zinc) | 12122-17-7 | Yes¹ | Yes² | Yes² | No | Yes² | Yes² |

Canadian WHMIS Information

A: General Product Information

All components are on the Canadian Domestic Substances or Non-Domestic Substances Inventory Lists.

B: Component Analysis - WHMIS IDL

No components are listed in the WHMIS IDL.

WHMIS Classification: D2B - Irritation

Additional Regulatory Information

A: General Product Information

All components are on the U.S. EPA TSCA Inventory List.

B: Component Analysis - Inventory Component Analysis - Inventory

| Component | CAS # | TSCA | DSL | NDSL | EINECS | AUST | MITI | PHIL | KOREA | ELINCS | CHINA | CAN |
|----------------------|------------|------|-----|------|--------|------|------|------|-------|--------|-------|-----|
| Basic zinc carbonate | 12122-17-7 | Yes | Yes | No | Yes | Yes | Yes | No | No | No | Yes | DSL |

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| * * * Section 16 - Other Information * * * |
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Other Information

Disclaimer: Supplier gives no warranty of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser will make his own tests to determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental and/or consequential property damage arising out of the use of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Material Safety Data Sheet before handling product.

Key/Legend

NA = Not available or Not Applicable. CERCLA = Comprehensive Environmental Response Compensation & Liability Act; SARA = Superfund Amendments & Reauthorization Act; RCRA = Resource Conservation & Recovery Act. TLV = Threshold Limit Value. NFPA = National Fire Protection Association. HMIS = Hazardous Material Information System. CFR = Code of Federal Regulations. HEPA = High Efficiency Particulate Air EPA = Environmental Protection Agency; TSCA = Toxic Substance Control Act; ACGIH = American Conference of Governmental Industrial Hygienists; IARC = International Agency for Research on Cancer; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration., NJTSR = New Jersey Trade Secret Registry.

This is the end of MSDS # MRD-002