

# SAFETY DATA SHEET

## 1. Identification

**Product identifier** ZRC Zero-VOC Water-Based Galvanizing Compound - Powder Component

**Other means of identification**

**Product code** 40003

**Recommended use** Paint. Industrial coating.

**Recommended restrictions** None known.

**Manufacturer/Importer/Supplier/Distributor information**

**Supplier/Manufacturer** ZRC Worldwide  
**Address** 145 Enterprise Drive  
Marshfield, MA 02050  
United States of America

**Telephone** +1 781-319-0400

**Email** info@zrcworldwide.com

**Emergency telephone** CHEMTREC:  
+1 703-527-3887 (CCN15781)

## 2. Hazard(s) identification

**Hazards for the product as sold**

**Physical hazards** Not classified.

**Hazards for the product as sold**

**Health hazards** Not classified.

**Hazards for the product as sold**

**Environmental hazards** Hazardous to the aquatic environment, acute hazard Category 1

Hazardous to the aquatic environment, long-term hazard Category 1

**Hazards for the product as sold**

**OSHA defined hazards** Combustible dust

**Label elements**



**Signal word** Warning

**Hazard statement** May form combustible dust concentrations in air. Very toxic to aquatic life with long lasting effects.

**Precautionary statement**

**Prevention** Prevent dust accumulation to minimize explosion hazard. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Avoid release to the environment. Observe good industrial hygiene practices.

**Response** Take off contaminated clothing and wash it before reuse. In case of fire: Use special powder against metal fires, dry sand to extinguish. Collect spillage.

**Storage** Not assigned.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard(s) not otherwise classified (HNOC)** Inhalation of powder or fumes may cause metal fume fever.

**Supplemental information** None.

### 3. Composition/information on ingredients

#### Mixtures

| Chemical name | CAS number | %        |
|---------------|------------|----------|
| Zinc          | 7440-66-6  | 90 - 100 |
| Zinc oxide    | 1314-13-2  | 1 - 5    |

**Composition comments** The manufacturer has claimed the exact percentage as trade secret under the OSHA Hazard Communication Standard.  
All concentrations are in percent by weight unless otherwise indicated.

#### 4. First-aid measures

**Inhalation** In case of inhalation of dust: Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact** Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion** Rinse mouth. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed** Dusts may irritate the respiratory tract, skin and eyes. Inhalation of powder or fumes may cause metal fume fever.

**Indication of immediate medical attention and special treatment needed** Treat symptomatically.

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

#### 5. Fire-fighting measures

**Suitable extinguishing media** Special powder against metal fires. Dry sand.  
Apply extinguishing media carefully to avoid creating airborne dust. Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

**Unsuitable extinguishing media** Do not use water as an extinguisher.

**Specific hazards arising from the chemical** Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed such as: Fumes of metal oxides.

**Special protective equipment and precautions for firefighters** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions** In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Cool containers exposed to flames with water until well after the fire is out.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards** May form combustible dust concentrations in air.

#### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Use only non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

**Methods and materials for containment and cleaning up** Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. Prevent product from entering drains. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

**Environmental precautions**

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

**7. Handling and storage****Precautions for safe handling**

Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Avoid inhalation of dust. Avoid prolonged exposure. Wear appropriate personal protective equipment. Avoid release to the environment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities**

Keep containers tightly closed in a dry, cool and well-ventilated place. Store at temperatures between 0°C/32°F and 43°C/109°F. Store away from incompatible materials (see Section 10 of the SDS).

**8. Exposure controls/personal protection****Occupational exposure limits****US. OSHA Table Z-1 Permissible Exposure Limits (PEL) for Air Contaminants (29 CFR 1910.1000)**

| Components                 | Type | Value    | Form                 |
|----------------------------|------|----------|----------------------|
| Zinc oxide (CAS 1314-13-2) | PEL  | 5 mg/m3  | Respirable fraction. |
|                            |      | 5 mg/m3  | Fume.                |
|                            |      | 15 mg/m3 | Total dust.          |

**US. OSHA Table Z-3 Permissible Exposure Limits (PEL) for Mineral Dusts (29 CFR 1910.1000)**

| Contains | Type | Value    | Form                 |
|----------|------|----------|----------------------|
| Dust     | TWA  | 5 mg/m3  | Respirable fraction. |
|          |      | 15 mg/m3 | Total dust.          |
|          |      | 50 mppcf | Total dust.          |
|          |      | 15 mppcf | Respirable fraction. |

**US. ACGIH Threshold Limit Values (TLV)**

| Components                 | Type | Value    | Form                  |
|----------------------------|------|----------|-----------------------|
| Zinc oxide (CAS 1314-13-2) | STEL | 10 mg/m3 | Respirable fraction.  |
|                            | TWA  | 2 mg/m3  | Respirable fraction.  |
| Contains                   | Type | Value    | Form                  |
| Dust                       | TWA  | 3 mg/m3  | Respirable particles. |
|                            |      | 10 mg/m3 | Inhalable particles.  |

**NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended**

| Components                 | Type | Value     |
|----------------------------|------|-----------|
| Zinc oxide (CAS 1314-13-2) | IDLH | 500 mg/m3 |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components                 | Type    | Value    | Form  |
|----------------------------|---------|----------|-------|
| Zinc oxide (CAS 1314-13-2) | Ceiling | 15 mg/m3 | Dust. |
|                            | STEL    | 10 mg/m3 | Fume. |
|                            | TWA     | 5 mg/m3  | Fume. |
|                            |         | 5 mg/m3  | Dust. |

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

|  |   |
|--|---|
| <b>Appropriate engineering controls</b>                                      | Explosion-proof general and local exhaust ventilation. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). |
| <b>Individual protection measures, such as personal protective equipment</b> |   |
| <b>Eye/face protection</b>   | Wear dust-resistant safety goggles.   |
| <b>Skin protection</b>   |   |
| <b>Hand protection</b>   | Wear protective gloves. Suitable gloves can be recommended by the glove supplier.   |
| <b>Other</b>   | Wear suitable protective clothing.  |
| <b>Respiratory protection</b>  | If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Wear respirator with dust filter. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.  |
| <b>Thermal hazards</b>   | Wear appropriate thermal protective clothing, when necessary.   |
| <b>General hygiene considerations</b>  | When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.   |

## 9. Physical and chemical properties

|   |  |
|---|--|
| <b>Physical state</b>   | Solid.   |
| <b>Form</b>   | Powder.  |
| <b>Color</b>  | Gray.  |
| <b>Odor</b>   | Odorless.  |
| <b>Odor threshold</b>   | Not applicable (material is odorless).               |
| <b>Melting point/freezing point</b>                             | 786.2 °F (419 °C)                                    |
| <b>Boiling point or initial boiling point and boiling range</b> | 1662.8 °F (906 °C)                                   |
| <b>Flammability</b>   | Fine particles may form explosive mixtures with air. |
| <b>Upper/lower flammability or explosive limits</b>             |  |
| <b>Explosive limit - lower (%)</b>                              | Property has not been measured.                      |
| <b>Explosive limit - upper (%)</b>                              | Property has not been measured.                      |
| <b>Flash point</b>  | Property has not been measured.                      |
| <b>Auto-ignition temperature</b>                                | 1112 °F (600 °C)                                     |
| <b>Decomposition temperature</b>                                | Property has not been measured.                      |
| <b>pH</b>   | > 7 - < 7.1 (25 °C/77 °F)                            |
| <b>Kinematic viscosity</b>                                      | Not applicable, material is a solid.                 |
| <b>Solubility</b>   |  |
| <b>Solubility (water)</b>                                       | Insoluble in water.                                  |
| <b>Partition coefficient (n-octanol/water)</b>                  | Not applicable, product is a mixture.                |
| <b>Vapor pressure</b>   | Not applicable, material is a solid.                 |
| <b>Density and/or relative density</b>                          |  |
| <b>Density</b>  | Property has not been measured.                      |
| <b>Relative density</b>   | Property has not been measured.                      |
| <b>Vapor density</b>  | Not applicable, material is a solid.                 |
| <b>Particle characteristics</b>                                 | Property has not been measured.                      |

## Other information

|   |                                      |
|---|--------------------------------------|
| <b>Bulk density</b>                           | 58.7 lb/gal                          |
| <b>Dust explosion properties</b>              |                                      |
| <b>Minimum explosible concentration (MEC)</b> | 480 g/m <sup>3</sup>                 |
| <b>Evaporation rate</b>                       | Not applicable, material is a solid. |
| <b>Explosive properties</b>                   | Combustible dust hazard.             |
| <b>Oxidizing properties</b>                   | Not oxidizing.                       |
| <b>Viscosity</b>                              | Not applicable, material is a solid. |

## 10. Stability and reactivity

|   |  |
|---|--|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport.                                      |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.  |
| <b>Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.  |
| <b>Conditions to avoid</b>                | Keep away from heat, sparks and open flame. Contact with incompatible materials. Minimize dust generation and accumulation.        |
| <b>Incompatible materials</b>             | Strong oxidizing agents. Strong acids. Strong bases.   |
| <b>Hazardous decomposition products</b>   | Decomposition is not expected under normal conditions of use and storage. Fire or high temperatures create: Fumes of metal oxides. |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Dust may irritate respiratory system. Prolonged inhalation may be harmful. |
| <b>Skin contact</b> | Dust or powder may irritate the skin.                                      |
| <b>Eye contact</b>  | Dust may irritate the eyes.  |
| <b>Ingestion</b>    | No harmful effects expected in amounts likely to be ingested by accident.  |

### Symptoms related to the physical, chemical and toxicological characteristics

Dusts may irritate the respiratory tract, skin and eyes. Inhalation of powder or fumes may cause metal fume fever.

### Information on toxicological effects

**Acute toxicity** Not expected to be acutely toxic.

| <b>Components</b>          | <b>Species</b> | <b>Test Results</b> |
|----------------------------|----------------|---------------------|
| Zinc (CAS 7440-66-6)       |                |                     |
| <u><b>Acute</b></u>        |                |                     |
| <b>Oral</b>                |                |                     |
| LD50                       | Mouse          | > 5 g/kg            |
| Zinc oxide (CAS 1314-13-2) |                |                     |
| <u><b>Acute</b></u>        |                |                     |
| <b>Inhalation</b>          |                |                     |
| LC50                       | Mouse          | > 5.7 mg/l, 4 Hours |
| <b>Oral</b>                |                |                     |
| LD50                       | Rat            | > 5000 mg/kg        |

**Skin corrosion/irritation** May cause irritation through mechanical abrasion.

**Serious eye damage/eye irritation** Dust may irritate the eyes.

### Respiratory or skin sensitization

|                                  |   |
|----------------------------------|---|
| <b>Respiratory sensitization</b> | Not a respiratory sensitizer.                             |
| <b>Skin sensitization</b>        | This product is not expected to cause skin sensitization. |

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity** Not classifiable as to carcinogenicity to humans.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

**NTP Report on Carcinogens**

Not listed.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**Reproductive toxicity** This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** Not an aspiration hazard.

**Chronic effects** Prolonged inhalation may be harmful.

**12. Ecological information**

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

| Components           | Species                  | Test Results |
|----------------------|--------------------------|--------------|
| Zinc (CAS 7440-66-6) |                          |              |
| <b>Aquatic</b>       |                          |              |
| <i>Acute</i>         |                          |              |
| Crustacea            | EC50 Daphnia magna       | 0.07 mg/l    |
| Fish                 | LC50 Oncorhynchus mykiss | 0.14 mg/l    |

**Persistence and degradability** The product solely consists of inorganic compounds which are not biodegradable.

**Bioaccumulative potential** May accumulate in soil and water systems.

**Mobility in soil** The product is insoluble in water. Expected to have low mobility in soil.

**Other adverse effects** No data available.

**13. Disposal considerations**

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

**14. Transport information**

**DOT**

|                                     |   |
|-------------------------------------|---|
| <b>UN number</b>                    | UN3077  |
| <b>UN proper shipping name</b>      | Environmentally hazardous substances, solid, n.o.s. (Zinc; Zinc oxide)  |
| <b>Transport hazard class(es)</b>   |   |
| <b>Class</b>                        | 9   |
| <b>Subsidiary hazard</b>            | -   |
| <b>Label(s)</b>                     | 9   |
| <b>Packing group</b>                | III   |
| <b>Environmental hazards</b>        |   |
| <b>Marine pollutant</b>             | Yes   |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling. |

**Special provisions** 8, 146, 335, A112, B54, IB8, IP3, N20, T1, TP33  
**Packaging exceptions** 155  
**Packaging non bulk** 213  
**Packaging bulk** 240

**IATA**

**UN number** UN3077  
**UN proper shipping name** Environmentally hazardous substance, solid, n.o.s. (Zinc; Zinc oxide)  
**Transport hazard class(es)**  
    **Class** 9  
    **Subsidiary hazard** -  
    **Label(s)** 9  
**Packing group** III  
**Environmental hazards** Yes  
**ERG Code** 9L  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**IMDG**

**UN number** UN3077  
**UN proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc; Zinc oxide)  
**Transport hazard class(es)**  
    **Class** 9  
    **Subsidiary hazard** -  
**Packing group** III  
**Environmental hazards**  
    **Marine pollutant** Yes  
**EmS** F-A, S-F  
**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**Transport in bulk according to IMO instruments** Not applicable.

**15. Regulatory information**

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Toxic Substances Control Act (TSCA)** All components of the mixture on the TSCA 8(b) inventory are designated "active".

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Zinc (CAS 7440-66-6) 1.0 % Subject to Annual Reporting Requirements (Per Country)

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Zinc (CAS 7440-66-6)  
 Zinc oxide (CAS 1314-13-2)

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories** Combustible dust

**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|---------------|------------|----------|
| Zinc          | 7440-66-6  | 90 - 100 |
| Zinc oxide    | 1314-13-2  | 1 - 5    |

## Other federal regulations

### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

## US state regulations

### US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Zinc (CAS 7440-66-6)

### US. Massachusetts RTK - Substance List

Zinc (CAS 7440-66-6)

Zinc oxide (CAS 1314-13-2)

### US. New Jersey Worker and Community Right-to-Know Act

Zinc (CAS 7440-66-6)

Zinc oxide (CAS 1314-13-2)

### US. Pennsylvania Worker and Community Right-to-Know Law

Zinc (CAS 7440-66-6)

Zinc oxide (CAS 1314-13-2)

### US. Rhode Island RTK

Zinc (CAS 7440-66-6)

Zinc oxide (CAS 1314-13-2)

### California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## International Inventories

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia                   | Australian Inventory of Industrial Chemicals (AICIS)                   | Yes                    |
| Canada                      | Domestic Substances List (DSL)   | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes                    |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | No                     |
| Korea                       | Existing Chemicals List (ECL)  | Yes                    |
| New Zealand                 | New Zealand Inventory  | Yes                    |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | Yes                    |
| Taiwan                      | Taiwan Chemical Substance Inventory (TCSI)                             | Yes                    |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

|               |                  |
|---------------|------------------|
| Issue date    | 14-December-2013 |
| Revision date | 31-March-2026    |
| Version #     | 08               |

**NFPA ratings****Disclaimer**

ZRC Worldwide cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.