

# SAFETY DATA SHEET

## 1. Identification

<b>Product identifier</b>	<b>ZRC Zero-VOC Water-Based Galvanizing Compound - Powder Component</b>
<b>Other means of identification</b>	
<b>Product code</b>	40002 - 40003
<b>Recommended use</b>	Zinc rich pigment primers.
<b>Recommended restrictions</b>	None known.
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
<b>Supplier/Manufacturer</b>	ZRC Worldwide
<b>Address</b>	145 Enterprise Drive, Marshfield, MA 02050
<b>Telephone</b>	781-319-0400
<b>Emergency telephone (CHEMTREC)</b>	703-527-3887 CCN15781
<b>Email</b>	info@zrcworldwide.com

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Not classified.	
<b>Environmental hazards</b>	Hazardous to the aquatic environment, acute hazard	Category 1
	Hazardous to the aquatic environment, long-term hazard	Category 1
<b>OSHA defined hazards</b>	Combustible dust	
<b>Label elements</b>		



<b>Signal word</b>	Warning
<b>Hazard statement</b>	May form combustible dust concentrations in air. Very toxic to aquatic life with long lasting effects.
<b>Precautionary statement</b>	
<b>Prevention</b>	Prevent dust accumulation to minimize explosion hazard. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Avoid release to the environment. Observe good industrial hygiene practices.
<b>Response</b>	Take off contaminated clothing and wash before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage.
<b>Storage</b>	Store away from incompatible materials.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None known.
<b>Supplemental information</b>	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** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

#### 4. First-aid measures

**Inhalation** If symptomatic, move to fresh air. Get medical attention if symptoms persist.

**Skin contact** Wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

**Eye contact** Remove contact lenses, if present and easy to do. Flush eyes thoroughly with water for at least 15 minutes. 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.

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

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

#### 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** Dust may form explosive mixture with air. During fire, gases hazardous to health may be formed.

**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** Cool containers exposed to flames with water until well after the fire is out.

**General fire hazards** Dust may form explosive mixture with air.

#### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures** 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 personal protective equipment (See Section 8).

**Methods and materials for containment and cleaning up** Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

Large Spills: Collect dust using a vacuum cleaner equipped with HEPA filter. Flush area with water. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

**Environmental precautions** Do not allow to enter drains, sewers or watercourses. Contact local authorities in case of spillage to drain/aquatic environment. Environmental manager must be informed of all releases.

#### 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 release to the environment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities** Keep container closed. Store away from incompatible materials. Ideal storage temperature is 0 to 43°C (32 to 109°F).

#### 8. Exposure controls/personal protection

##### Occupational exposure limits

##### US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Zinc oxide (CAS 1314-13-2)	PEL	5 mg/m <sup>3</sup>	Fume.

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value	Form
		5 mg/m <sup>3</sup>	Respirable fraction.
		15 mg/m <sup>3</sup>	Total dust.

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Zinc oxide (CAS 1314-13-2)	STEL	10 mg/m <sup>3</sup>	Respirable fraction.
	TWA	2 mg/m <sup>3</sup>	Respirable fraction.

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

Components	Type	Value	Form
Zinc oxide (CAS 1314-13-2)	Ceiling	15 mg/m <sup>3</sup>	Dust.
	STEL	10 mg/m <sup>3</sup>	Fume.
	TWA	5 mg/m <sup>3</sup>	Dust.
		5 mg/m <sup>3</sup>	Fume.

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Exposure guidelines</b>	Follow standard monitoring procedures.
<b>Appropriate engineering controls</b>	Use explosion-proof equipment if high dust/air concentrations are possible.
<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.
<b>Skin protection</b>	
<b>Other</b>	Wear chemical-resistant gloves, footwear and protective clothing appropriate for risk of exposure. Contact glove manufacturer for specific information.
<b>Respiratory protection</b>	Wear respirator if there is dust formation.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	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>Appearance</b>	Gray solid.
<b>Physical state</b>	Solid.
<b>Form</b>	Powder.
<b>Color</b>	Gray.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>pH</b>	7 - 7.1 (25 °C/77 °F)
<b>Melting point/freezing point</b>	786.2 °F (419 °C)
<b>Initial boiling point and boiling range</b>	1662.8 °F (906 °C)
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Fine particles may form explosive mixtures with air.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - lower (%) temperature</b>	480 g/m <sup>3</sup> (vol)

<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble in water.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	1112 °F (600 °C)
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Bulk density</b>	58.7 lb/gal
<b>Explosive properties</b>	Combustible dust hazard.
<b>Oxidizing properties</b>	Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	Stable at normal conditions.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Contact with incompatible materials. Elevated temperatures. Minimize dust generation and accumulation.
<b>Incompatible materials</b>	Strong oxidizers, strong acids, and strong bases.
<b>Hazardous decomposition products</b>	Fire or high temperatures create: Fumes of metal oxides.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
<b>Skin contact</b>	May cause irritation through mechanical abrasion.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<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.

### Information on toxicological effects

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

<b>Components</b>	<b>Species</b>	<b>Test Results</b>
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Zinc (CAS 7440-66-6)

#### Acute

#### **Oral**

LD50

Rat

630 mg/kg

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

**Serious eye damage/eye irritation**      Direct contact with eyes may cause temporary irritation.

### Respiratory or skin sensitization

**Respiratory sensitization**      Not classified.

**Skin sensitization**      Not a skin sensitizer.

**Germ cell mutagenicity**      Not classified.

**Carcinogenicity** Not classified.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

**NTP Report on Carcinogens**

Not listed.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not regulated.

**Reproductive toxicity** Not classified.

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

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

**Aspiration hazard** Not classified.

**Chronic effects** Not classified.

## 12. Ecological information

**Ecotoxicity** Zinc in form of particles or dust is very toxic to aquatic organisms and may cause long-term adverse effects in the environment.

Components	Species	Test Results
Zinc (CAS 7440-66-6)		
<b>Aquatic</b>		
Crustacea	LC50 Daphnia magna	0.068 mg/l, 48 hours
Zinc oxide (CAS 1314-13-2)		
<b>Aquatic</b>		
Crustacea	LC50 Water flea (Daphnia magna)	0.098 mg/l, 48 Hours

**Persistence and degradability** Not relevant for inorganic substances.

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

**Mobility in soil** The product is insoluble or slightly soluble in water.

**Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

**Disposal instructions** Dispose in accordance with all applicable regulations. Do not allow runoff to sewer, waterway or ground.

**Hazardous waste code** Waste codes should be assigned by the user based on the application for which the product was used.

**Waste from residues / unused products** Dispose of in accordance with local regulations.

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied.

## 14. Transport information - This product does not meet the criteria for Classification in Divisions 4.1, 4.2 and 4.3 of the

**DOT UN Recommendations on the Transport of Dangerous Goods.**

**UN number** UN3077

**UN proper shipping name** Environmentally hazardous substances, solid, n.o.s. (Zinc, Zinc oxide)

**Transport hazard class(es)**

**Class** 9

**Subsidiary risk** -

**Label(s)** 9

**Packing group** III

**Environmental hazards**

**Marine pollutant** Yes

**Special precautions for user** 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

Class 9 placards are not required for domestic (USA or Canada ground) transportation. However, a bulk package or bulk truck (i.e. a bulk bag (IBC) or Bulk Truck) with more than a Reportable Quantity of 1,000 lbs. must be marked with the appropriate 3077 ID (identification number) number on a white square on point display.

**IATA - This product does not meet the criteria for Classification in Division 4.1 of the Dangerous Goods Regulations, 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 risk** -  
**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 - This product does not meet the criteria for Classification in Divisions 4.1, 4.2 and 4.3 of the UN Transport of DG.**

**UN number** UN3077  
**UN proper shipping name** Environmentally Hazardous Solid, N.o.s. (Zinc, Zinc oxide)  
**Transport hazard class(es)**  
**Class** 9  
**Subsidiary risk** -  
**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 Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

**General information** Limited Quantity exemption may apply.

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## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
All components are on the U.S. EPA TSCA Inventory List.

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

Zinc (CAS 7440-66-6) 1.0 % One-Time Export Notification only.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not regulated.

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

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

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

**Hazard categories** Immediate Hazard - No  
Delayed Hazard - No  
Fire Hazard - Yes  
Pressure Hazard - No  
Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**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** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.**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)

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	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
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies 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** 26-Oct-2018**Version #** 06**Further information** The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.**NFPA ratings****List of abbreviations**

LD50: Lethal Dose, 50%.  
 LC50: Lethal Concentration, 50%.  
 STEL: Short-Term Exposure Limit.  
 TWA: Time weighted average.  
 PEL: Permissible Exposure Limit.

**References**

EPA: Acquire database  
NLM: Hazardous Substances Data Base  
US. IARC Monographs on Occupational Exposures to Chemical Agents  
National Toxicology Program (NTP) Report on Carcinogens  
ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices  
ESIS (European chemical Substances Information System)  
HSDB® - Hazardous Substances Data Bank  
IARC Monographs. Overall Evaluation of Carcinogenicity

**Disclaimer**

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.