SAFETY DATA SHEET

1. Identification

Product identifier ZRC Cold Galvanizing Compound

Other means of identification

Product code 10001 - 10004

Recommended use Corrosion protection of iron and steel.

Recommended restrictions None known.

Manufacturer / Importer / Supplier / Distributor information

Supplier/Manufacturer ZRC Worldwide

Address 145 Enterprise Drive, Marshfield, MA 02050

Telephone 781-319-0400

Emergency telephone 703-527-3887 CCN15781

Email info@zrcworldwide.com

Company name ZRC Worldwide

Address Not available.

Telephone Not available.

E-mail Not available.

Emergency phone number Not available.

2. Hazard(s) identification

Physical hazards Flammable liquids Category 3

Health hazards Specific target organ toxicity, repeated exposure Category 2 (Lung, Central nervous system)

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

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

OSHA defined hazards Not classified.

Label elements

Signal word Warning

Hazard statement Flammable liquid and vapor. Very toxic to aquatic life with long lasting effects. Very toxic to aquatic life. May cause damage to organs (Central nervous system, Lung) through prolonged or repeated exposure.

Precautionary statement


Response If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Collect spillage. Get medical advice/attention if you feel unwell.

Storage Store in a well-ventilated place. Keep cool.

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

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information Not applicable.
3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc</td>
<td>7440-66-6</td>
<td>75 - 85</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), medium aliph.</td>
<td>64742-88-7</td>
<td>4 - 6</td>
</tr>
<tr>
<td>Distillates (petroleum), hydrotreated light</td>
<td>64742-47-8</td>
<td>4 - 5</td>
</tr>
<tr>
<td>Zinc oxide</td>
<td>1314-13-2</td>
<td>2 - 3</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6</td>
<td>0.5 - 0.9</td>
</tr>
<tr>
<td>Other components below reportable levels</td>
<td></td>
<td>7.3</td>
</tr>
</tbody>
</table>

4. First-aid measures

**Inhalation**
Move to fresh air. Get medical attention if any discomfort continues.

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

**Eye contact**
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

**Ingestion**
Rinse mouth. Get medical attention if any discomfort occurs.

**Most important symptoms/effects, acute and delayed**
May cause temporary irritation on skin or eye contact.

**Indication of immediate medical attention and special treatment needed**
Provide general supportive measures and 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**
Dry chemical, CO2, water spray, fog, or foam.

**Unsuitable extinguishing media**
Do not use water jet.

**Specific hazards arising from the chemical**
By heating and fire, harmful vapors/gases may be formed. Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back.

**Special protective equipment and precautions for firefighters**
Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.

**Fire-fighting equipment/instructions**
Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use standard firefighting procedures and consider the hazards of other involved materials. In the event of fire, cool tanks with water spray. Move containers from fire area if you can do so without risk. In case of fire and/or explosion do not breathe fumes. Water runoff can cause environmental damage.

**General fire hazards**
Flammable liquid and vapor.

6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. 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). Stop leak if you can do so without risk. Collect spillage. Scoop up used absorbent into drums or other appropriate container. Prevent entry into waterways, sewer, basements or confined areas. For waste disposal, see Section 13 of the SDS.

**Environmental precautions**
Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.
7. Handling and storage

Precautions for safe handling
Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Use non-sparking tools and explosion-proof equipment. Do not taste or swallow. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities
Keep away from heat, sparks and open flame. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. For further information, please refer to Section 10 of the SDS.

8. Exposure controls/personal protection

Occupational exposure limits

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

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide (CAS 1314-13-2)</td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide (CAS 1314-13-2)</td>
<td>STEL</td>
<td>10 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

US. NIOSH: Pocket Guide to Chemical Hazards

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum),</td>
<td>TWA</td>
<td>100 mg/m³</td>
<td></td>
</tr>
<tr>
<td>hydrotreated light (CAS 64742-47-8)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc oxide (CAS 1314-13-2)</td>
<td>Ceiling</td>
<td>15 mg/m³</td>
<td>Dust.</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>10 mg/m³</td>
<td>Fume.</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³</td>
<td>Fume.</td>
</tr>
</tbody>
</table>

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

Appropriate engineering controls
Explosion-proof general and local exhaust ventilation.

Individual protection measures, such as personal protective equipment

Eye/face protection
Do not get in eyes. If contact is likely, safety glasses with side shields are recommended.

Skin protection

Hand protection
No protection is ordinarily required under normal conditions of use. Use protective gloves made of: Rubber (natural, latex).

Other
Wear suitable protective clothing. Use appropriate hand protection.

Respiratory protection
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

Thermal hazards
Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations
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

Appearance
Gray liquid.

Physical state
Liquid.

Form
Liquid.

Color
Gray.

Odor
Hydrocarbon.

Odor threshold
Not available.

pH
Not available.

Melting point/freezing point
Not available.

Initial boiling point and boiling range
Not available.

Flash point
111.2 °F (44.0 °C) Setaflash
Evaporation rate < 1 (n-Butyl acetate=1)

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

| Flammability limit - lower (%) | 0.9 % |
| Flammability limit - upper (%) | 7 % |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |

Vapor pressure 0.8 kPa (25°C / 77°F)

Vapor density > 1 (25°C / 77°F)

Relative density 2.88

Solubility(ies)

| Solubility (water) | Slightly soluble in water. |

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity 1800 mPa·s (25°C / 77°F)

Other information

| Bulk density | 24 lb/gal |
| VOC (Weight %) | 385 g/l |

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.

Conditions to avoid Heat, flames and sparks. Avoid temperatures exceeding the flash point.

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products Carbon oxides. Zinc oxides.

11. Toxicological information

Information on likely routes of exposure

Ingestion May cause discomfort if swallowed.

Inhalation Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

Skin contact Prolonged or repeated contact may dry skin and cause irritation.

Eye contact Direct contact with eyes may cause temporary irritation.

Symptoms related to the physical, chemical and toxicological characteristics Direct contact with eyes may cause temporary irritation. Prolonged or repeated contact may dry skin and cause irritation.

Information on toxicological effects

Acute toxicity Not classified.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillates (petroleum), hydrotreated light (CAS 64742-47-8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
<td>&gt; 2000 mg/kg</td>
</tr>
<tr>
<td>Inhalation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
<td>&gt; 5.28 mg/l, 4 hours</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
<td>&gt; 5000 mg/kg</td>
</tr>
</tbody>
</table>
Components | Species | Test Results
--- | --- | ---
Solvent naphtha (petroleum), medium aliph. (CAS 64742-88-7)

**Acute**
- **Dermal**
  - LD50: Rabbit 3000 mg/kg
- **Oral**
  - LD50: Rat > 5000 mg/kg

**Skin corrosion/irritation** Not classified.

**Serious eye damage/eye irritation** Not classified.

**Respiratory or skin sensitization**
- **Respiratory sensitization** Not classified.
- **Skin sensitization** Not classified.

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

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. Not classifiable as to carcinogenicity to humans.

**Reproductive toxicity** Not classified.

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

**Specific target organ toxicity - repeated exposure** May cause damage to the following organs through prolonged or repeated exposure: Central nervous system. Lung.

**Aspiration hazard** Not classified.

**Chronic effects** Prolonged exposure may cause chronic effects. Exposure over a long period of time may cause central nervous system effects. May cause lung damage.

---

**12. Ecological information**

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

Components | Species | Test Results
--- | --- | ---
Zinc (CAS 7440-66-6)

**Aquatic**
- **Crustacea**
  - LC50: Daphnia magna 0.068 mg/l, 48 hours
- **Fish**
  - LC50: Bony fish superclass (Osteichthyes) 0.52 - 3.59 mg/l, 96 hours

Zinc oxide (CAS 1314-13-2)

**Aquatic**
- **Crustacea**
  - LC50: Water flea (Daphnia magna) 0.098 mg/l, 48 Hours

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** Accumulation in aquatic organisms is expected.

**Mobility in soil** Not available.

**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** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. 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.

**Hazardous waste code** D001: Waste Flammable material with a flash point <140 F
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

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

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

### DOT

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN1263</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Paint</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>3</td>
</tr>
<tr>
<td>Class</td>
<td>III</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>Yes</td>
</tr>
<tr>
<td>Packing group</td>
<td>Yes</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Yes</td>
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</tbody>
</table>

### IATA

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
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<tbody>
<tr>
<td>UN number</td>
<td>UN1263</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Paint</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>3</td>
</tr>
<tr>
<td>Class</td>
<td>III</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>Yes</td>
</tr>
<tr>
<td>Label(s)</td>
<td>3</td>
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<tr>
<td>Packing group</td>
<td>III</td>
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<tr>
<td>Environmental hazards</td>
<td>Yes</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
</tbody>
</table>

### IMDG

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN1263</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>Paint</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>3</td>
</tr>
<tr>
<td>Class</td>
<td>III</td>
</tr>
<tr>
<td>Subsidiary risk</td>
<td>Yes</td>
</tr>
<tr>
<td>Packing group</td>
<td>Yes</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>Yes</td>
</tr>
<tr>
<td>Marine pollutant</td>
<td>Yes</td>
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<tr>
<td>Special precautions for user</td>
<td>Read safety instructions, SDS and emergency procedures before handling.</td>
</tr>
</tbody>
</table>

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not available.

## 15. Regulatory information

### US federal regulations

This product is a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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

Not regulated.

### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

### 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 - Yes
  - 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)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc</td>
<td>7440-66-6</td>
<td>75 - 85</td>
</tr>
<tr>
<td>Zinc oxide</td>
<td>1314-13-2</td>
<td>2 - 3</td>
</tr>
</tbody>
</table>
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. Massachusetts RTK - Substance List
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)
Zinc (CAS 7440-66-6)
Zinc oxide (CAS 1314-13-2)

US. New Jersey Worker and Community Right-to-Know Act
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)
Zinc (CAS 7440-66-6)
Zinc oxide (CAS 1314-13-2)

US. Pennsylvania Worker and Community Right-to-Know Law
Distillates (petroleum), hydrotreated light (CAS 64742-47-8)
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)

US. 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.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Not listed.

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*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 05-February-2014
Version # 05

NFPA Ratings

0 2

ZRC Cold Galvanizing Compound SDS US
917537 Version #: 05 Revision date: 05-February-2014 Issue date: 14-December-2013 7 / 8
References
ESIS (European chemical Substances Information System)
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity

Disclaimer
The information in the sheet was written based on the best knowledge and experience currently available.