

Safety Data Sheet

1. Products and company identification

Product name	AQUA ROVAL Cold Galvanizing Compound (Powder)
Supplier Name	Shanghai Roval Zinc Rich Paint Corporation
Supplier Address	NO.393 Fenggong RD, Jiading Malu Shanghai, China
Telephone number	+86-21-69156584
FAX	+86-21-69156593
Emergency Telephone number	+86-400-6267-911
E-mail	sh-info@roval.cn
Recommended use	Galvanizing Repair and Anti-corrosion of steel
Date of revision	Mar 17 th , 2020

2. Hazards identification

2.1 Classification of the substance or mixture

ENVIRONMENTAL HAZARDS:

Acute aquatic toxicity: Category 1

Chronic aquatic toxicity: Category 1

(Note) GHS classification without description: Not classified/Classification not possible

2.2 Label elements



Signal word: WARNING

HAZARD STATEMENT

H410: Very toxic to aquatic life with long-lasting effects.

PRECAUTIONARY STATEMENT

Prevention

P273: Avoid release to the environment.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response

P391: Collect spillage.

Disposal

P501: Dispose of contents/container in accordance with local/national regulation.

3. Composition /information on ingredients

Mixture / Substance selection: Mixture

Chemical identity	% Weigh	CAS number
Zinc	90~100	7440-66-6
Zinc oxide	1~10	1314-13-2

4. First-aid measures

GENERAL ADVICE

Do not leave the victim unattended.

IF INHALED

If symptoms persist, call a physician.

If unconscious, place in recovery position and get medical attention immediately.

IF IN EYES

Remove contact lenses.

Flush eyes with water as a precaution. Protect unharmed eye.

Keep eye wide open while rinsing.

If eye irritation persists, consult a specialist.

IF SWALLOWED

Keep respiratory tract clear.

Do not give milk or alcoholic beverages.

Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

5. Fire-fighting measures

5.1 Suitable extinguishing media

Foam Carbon dioxide (CO₂) Dry chemical

5.2 Unsuitable extinguishing media

Water High volume water jet.

5.3 Specific hazards during fire- fighting

May form explosive mixtures in air.

Original packaging can be wetted using water for extinguishing surrounding fire in well ventilated areas.

The product reacts with water and generates heat.

Isolate wetted packaging and powder from combustible materials and dry powder and store in an excellent ventilated area. 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.

Warning: water promotes the spread of fire.

Do not allow run-off from firefighting to enter drains or water courses.

5.4 Hazardous combustion prod-products

No hazardous combustion products are known.

5.5 Specific extinguishing methods

Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

5.6 Special protective equipment for firefighters

Wear self-contained breathing apparatus for firefighting if necessary

6. Accidental release measures

6.1 Personnel precautions, protective equipment and emergency procedures

Avoid dust formation.

6.2 Environmental precautions

Prevent product from entering drains.

Prevent further leakage or spillage if safe to do so.

If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and materials for containment and cleaning up

Keep in suitable, closed containers for disposal.

6.4 Preventive measures for secondary accident

Collect spillage.

Prepare extinguishers before catching fire.

Stop leak if safe to do so.

7. Handling and storage

7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.

For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the application area.

Dispose of rinse water in accordance with local and national regulations.

Avoidance of contact: Acids, Oxidizing agents

7.2 Storage

Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Electrical installations / working materials must comply with the technological safety standards.

To maintain product quality, do not store in heat or direct sunlight.

Do not store near acids

8. Exposure controls / personal protection

8.1 Control parameters

Chemical identity	ACGIH_TLV (2016)
Zinc oxide	2mg/m ³ (TWA)
	10mg/m ³ (STEL)

8.2 Exposure controls

Engineering measures

Handle only in a place equipped with local exhaust (or other appropriate exhaust).

Eye/face protection

Safety glasses with side-shields conforming to EN166

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Wash hands before breaks and at the end of workday.

9. Physical and chemical properties

Physical state : Metal powder

Color : Gray

Odor : odorless

Melting point/range : 420°C Boiling

Point/boiling range : 908°C

Flammability (solid, gas) : May be combustible at high temperature.

Solubility (ies)

Water solubility : insoluble

10. Stability and Reactivity

10.1 Reactivity

In contact with water releases flammable gases.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Wetted powder will heat and release gases (hydrogen)

No decomposition if stored and applied as directed.

10.4 Conditions to avoid

Heat, flames and sparks.

Isolate wetted packaging and powder from combustible materials and dry powder and store in an excellent ventilated area. Avoid generation of dust.

Exposure to moisture

10.5 Incompatible materials

Acids, Oxidizing agents

11. Toxicological information

Acute toxicity

Product:

Acute oral toxicity

LD50 (Rat): > 2,000 mg/kg

Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity

LC50 (Rat): > 5.4 mg/l, Exposure time:4h, Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity

Assessment: The substance or mixture has no acute dermal toxicity

Remarks: No data available

Skin corrosion/irritation Product:

Result: No skin irritation

Serious eye damage/eye irritation

Result: No eye irritation

Respiratory or skin sensitisation

Result: Does not cause skin sensitisation.

Germ cell mutagenicity

Genotoxicity in vitro: Remarks: No data available

Carcinogenicity

Remarks: No data available

Reproductive toxicity

Effects on fertility: Remarks: No data available

STOT - single exposure

Remarks: No data available

STOT - repeated exposure

Remarks: No data available

Further information

Remarks: No data available

Zinc:

Acute oral toxicity

LD50 (Rat): > 2,000 mg/kg

Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity

LC50 (Rat): > 5.4 mg/l, Exposure time:4h, Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity

Assessment: The substance or mixture has no acute dermal toxicity

Zinc oxide:

Acute oral toxicity

LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity

LC50 (Rat): > 5.7 mg/l, Exposure time:4h, Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity

LD50 (Rat): > 5,000 mg/kg

Assessment: The substance or mixture has no acute dermal toxicity

Serious eye damage/eye irritation

Result: No eye irritation

Respiratory or skin sensitisation

Exposure routes: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406 Result: Does not cause skin sensitisation.

Genotoxicity in vitro

Species: Bacteria

Method: OECD Test Guideline 471 Result: negative

Genotoxicity in vivo

Species: Mammalian-Animal Method: OECD Test Guideline 475 Result: negative

Remarks: Based on read across from structural related sub- stance: zinc sulphate

Further information

Remarks: No data available

12. Ecological information

12.1 Ecotoxicity

Zinc:

Toxicity to fish

LC50 (Pimephales promelas (fathead minnow)): 0.238 - 0.269 mg/l

Exposure time: 96 h Remarks: Fresh water

Toxicity to daphnia and other aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0.356 mg/l, Exposure time: 48h, Remarks: Fresh water

Toxicity to algae

EC50 (Pseudokirchneriella subcapitata (green algae)): 0.106 mg/l, Exposure time: 72h, Remarks: Fresh water

Zinc oxide:

Toxicity to fish

LC50 (Lepomis macrochirus (Bluegill sunfish)): 320 mg/l, Exposure time: 96h, Remarks: Fresh water

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.017 mg/l, Exposure time: 72h, Remarks: Fresh water

12.2 Persistence and degradative

No data available

12.3 Mobility in soil

No data available

13. Disposal considerations

13.1 Waste treatment methods

The product should not be allowed to enter drains, water courses or the soil.

Dispose of in accordance with the European Directives on waste and hazardous waste.

In accordance with local and national regulations.

Do not contaminate ponds, waterways or ditches with chemical or used container.

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Send to a licensed waste management company.

13.2 Contaminated packaging

Empty remaining contents.

Dispose of as unused product.

Do not re-use empty containers.

14. Transport information

International Regulation

UNRTDG

UN number: UN 3077

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc, zinc oxide)

Class: 9

Packing group: III

Labels: 9



Marine pollutant: Yes

IATA-DGR

UN/ID number: UN 3077

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc, zinc oxide)

Class: 9

Packing group: III

Labels: Miscellaneous



Packing instruction (cargo aircraft): 956

Maximum quantity: 400.00 KG

Packing instruction (jpassenger aircraft): 956

Maximum quantity: 400.00 KG

IMDG-Code

UN number: UN 3077

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc, zinc oxide)

Class: 9

Packing group: III

Labels: 9



EMS Code: F-A, S-F

Marine pollutant: Yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable for product as supplied.

GB 6944/12268

UN number: UN 3077

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc, zinc oxide)

Class: 9

Packing group: III

Labels: 9



Marine pollutant: Yes

Remarks:

Effective 1st of January 2015, when carried in single packaging or inner packaging of 5 kg or less, this material is not subject to the transport regulations dangerous goods. The single packaging or outer packaging must not be UN- approved but must be a good quality packaging

Special precautions for user

Remarks:

Effective 1st of January 2015, when carried in single packaging or inner packaging of 5 kg or less, this material is not subject to the transport regulations dangerous goods. The single packaging or outer packaging must not be UN- approved but must be a good quality packaging.

The product qualities covered by this MSDS have been tested according to the criteria for classes 4.1,4.2 and 4.3 of "UN Recommendations on the Transport of Dangerous Goods.

Model Regulations

15th revised edition" and "GB6944-2005 Classification and code of dangerous goods". The test results show that Zinc Metal Pigment DOES NOT belong to dangerous goods: National Registration Center for Chemicals, SAWS; Report 2008051601 & 2008051602

15. Regulatory information

National regulatory information

Law on the Prevention and Control of Occupational Diseases

The components of this product are reported in the following inventories:

CH INV: On the inventory, or in compliance with the inventory

TSCA: On TSCA Inventory

DSL: All components of this product are on the Canadian DSL

AICS: On the inventory, or in compliance with the inventory

NZIoC: On the inventory, or in compliance with the inventory

ENCS: Not in compliance with the inventory

ISHL: Not in compliance with the inventory

KECI: On the inventory, or in compliance with the inventory

PICCS: On the inventory, or in compliance with the inventory

IECSC: On the inventory, or in compliance with the inventory

16. Other information

Full text of other abbreviations

(Q)SAR - (Quantitative) Structure Activity Relationship; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; EC_x - concentration associated with x% response; EL_x - Loading rate associated with x% response; EmS - Emergency Schedule; ErC_x - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC₅₀ - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; LC₅₀ - Lethal Concentration to 50 % of a test population; LD₅₀ - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; N.O.S. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; OECD - Organization for Economic Cooperation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TDG - Transportation of Dangerous Goods; UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good

Laboratory Practice

Date format: yyyy/mm/dd

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.