

Safety Data Sheet

1. Products and company identification

| | |
|----------------------------|--|
| Product name | ROVAL SILVER Zinc Rich Compound |
| 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 | Dec. 21 th , 2020 |

2. Hazards identification

2.1 Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable liquids: Category 3

HEALTH HAZARDS

Acute toxicity Inhalation (vapors): Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Carcinogenicity: Category 2

Reproductive Toxicity: Category 1B

TOST: Single Exposure:

Category 1 (central nerve system, respiratory system, kidney, liver)

Category 2 (systemic toxicity)

Category 3 (may cause drowsiness or dizziness)

Repeated Exposure: Category 1 (nerve system, respiratory system)

Category 2 (respiratory system, auditory organ)

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: DANGER

HAZARD STATEMENT

- H226: Flammable liquid and vapor
- H315: Causes skin irritation
- H319: Causes serious eye irritation
- H332: Harmful if inhaled
- H351: Suspected of causing cancer
- H360: May damage fertility or the unborn child
- H371: May causes damage to organs
- H372: Causes damage to organs through prolonged or repeated exposure
- H400: Very toxic to aquatic life
- H410: Very toxic to aquatic life with long-lasting effects

PRECAUTIONARY STATEMENT

Prevention

- P201: Obtain special instruction before use.
- P202: Do not handle until all safety precautions have been read and understood.
- P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P241: Use explosion-proof electrical/ventilating/light/equipment.
- P242: Use only non-sparking tools.
- P243: Take precautionary measures against static discharge.
- P260: Do not breathe dust/fumes/gas/mist/vapors/spray.
- P264: Wash hands thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in a well-ventilated area.
- P273: Avoid release to the environment.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response

- P303+361+353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+312: IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
- P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
- P308+313: If exposed: Call a POISON CENTER or doctor/physician.
- P370+378: In case of fire: Use carbon dioxide/dry powder/foam/dry sand to extinguish.

Storage

- P403+235: Store in a well ventilated place. Keep cool.
- P404+405: Store in a closed container. Store locked up.

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 |
|-------------------|---------|------------|
| Aluminum | 1~5 | 7429-90-5 |
| Xylene | 17 | 1330-20-7 |
| Ethyl benzene | 15 | 100-41-4 |
| Ethanol | 0~1 | 64-17-5 |
| Mineral spirit | 1~5 | 8502-41-3 |
| Zinc | 50~55 | 7440-66-6 |
| Zinc oxide | <5.0 | 1314-13-2 |

4. First-aid measures

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor / physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water / shower.

Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice / attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses. If present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice / attention.

IF SWALLOWED

Do NOT induce vomiting.

Immediately call a POISON CENTER or doctor / physician.

5. Fire-fighting measures

5.1 Extinguishing Media

In case of fire, use carbon dioxide/dry powder/foam/dry sand to extinguish.

Do not use direct water jet.

5.2 Advice for firefighters

Evacuate non-essential personnel to safe area.

Eliminate all ignition sources if safe to do so.

Cool container with water spray.

Wear fire/flame resistant/retardant clothing.

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

6. Accidental release measures

6.1 Personnel precautions, protective equipment and emergency procedures

Evacuate area.

Keep unauthorized personnel away.

Wear an air-supplied respirator for handling a spill at a poor ventilated workplace.

Wear proper protective equipment.

Eliminate all sources of ignition and ventilate the area.

6.2 Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

6.3 Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Fill the disposal into labelled, closable containers.

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

Avoid breathing gas/mist/vapors/spray.

Keep away from heat/sparks/open flames/hot surfaces. -No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Exhaust/ventilator should be available.

Avoid contact with skin/eyes.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/eye protection/face protection.

Use personal protective equipment as required.

7.2 Storage

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

8. Exposure controls / personal protection

8.1 Control parameters

| Chemical identity | ACGIH_TLV (2016) |
|-------------------|--------------------------|
| Aluminum | 1mg/m ³ (TWA) |
| Xylene | 100ppm (TWA) |
| Ethyl benzene | 20ppm (TWA) |
| Ethanol | 1000ppm (STEL) |
| Zinc oxide | 2mg/m ³ (TWA) |

8.2 Exposure controls

Appropriate engineering controls

Exhaust/ventilator should be available.

Eye wash station should be available.

Washing facilities should be available.

Individual protection measures

Respiratory protection

Wear respiratory protection

Hand protection

Wear protective gloves. Recommended material: impermeable or chemical resistant rubber

Eye protection

Wear safety glasses with side -shields or chemical safety goggle.

Skin and body protection

Wear protective clothing.

Wear impervious clothing and boots in case of repeated or prolonged treatment.

9. Physical and chemical properties

| | |
|---|-----------------------|
| Physical state | : Liquid |
| Color | : Silver |
| Odor | : Smells like solvent |
| Boiling point | : 144.4°C |
| Flash point | : 25.5°C |
| Auto-ignition temperature | : > 200°C |
| Lower and upper explosion limit/flammability limit: | |
| Lower explosion limit | : 1.0vol% |
| Upper explosion limit | : 7.0vol% |
| Vapor pressure | : 133kPa (32°C) |
| Specific gravity | : 1.77 |

10. Stability and Reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

Stable under normal storage/handling conditions.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

Avoid all possible sources of ignition (spark or flame).

10.5 Incompatible materials

Reactive or incompatible with the following materials: oxidizing materials

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Acute toxicity

| Material | Oral | Category | Dermal | Category |
|----------------|--------------|----------------|--------------|----------------|
| Aluminum | Not possible | | Not possible | |
| Xylene | 3.5g/kg | Not classified | Not possible | |
| Ethyl benzene | 3.5g/kg | Not classified | 15.4g/kg | Not classified |
| Mineral spirit | >5.0g/kg | Not classified | Not possible | |
| Ethanol | >6.2g/kg | Not classified | >20.0g/kg | Not classified |
| Zinc | >2.0g/kg | Not classified | Not possible | |
| Zinc oxide | >5.0g/kg | Not classified | >5.0g/kg | Not classified |

| Material | Gas | Category | Vapor | Category | Dust / Mist | Category |
|----------------|----------------|----------|----------------|----------------|--------------|----------------|
| Aluminum | Not applicable | | Not possible | | Not possible | |
| Xylene | Not applicable | | 6700 ppm | 4 | Not possible | |
| Ethyl benzene | Not applicable | | 4000 ppm | 4 | Not possible | |
| Mineral spirit | Not applicable | | Not possible | | Not possible | |
| Ethanol | Not applicable | | 63000ppm | Not classified | Not possible | |
| Zinc | Not applicable | | Not possible | | >5.41mg/L | Not classified |
| Zinc oxide | Not applicable | | Not applicable | | >5.7mg/L | Not classified |

| Material | Skin corrosion/irritation | Eye damage/irritation | Respiratory sensitization | Skin sensitization |
|----------------|---------------------------|-----------------------|---------------------------|--------------------|
| Aluminum | Not possible | Not possible | Not possible | Not possible |
| Xylene | 2 | 2A | Not possible | Not possible |
| Ethyl benzene | 3 | 2B | Not possible | Not possible |
| Mineral spirit | 2 | Not classified | Not possible | Not classified |
| Ethanol | Not classified | 2B | Not possible | Not possible |
| Zinc | Not classified | 2B | Not possible | Not classified |
| Zinc oxide | Not classified | Not classified | Not possible | Not classified |

| Material | Germ cell mutagenicity | Carcinogenicity | Reproductive toxicity |
|----------------|------------------------|-----------------|-----------------------|
| Aluminum | Not possible | Not possible | Not possible |
| Xylene | Not classified | Not classified | 1B |
| Ethyl benzene | Not classified | 2 | 1B |
| Mineral spirit | Not classified | Not possible | Not classified |
| Ethanol | Not possible | Not possible | 1A |
| Zinc | Not possible | Not possible | Not possible |
| Zinc oxide | Not possible | Not possible | 2 |

| Material | TOST (single) | TOST (Chronic) | Aspiration Hazard |
|----------------|---|--------------------------------------|-------------------|
| Aluminum | Not possible | 1 (lung) | Not possible |
| Xylene | 1 (respiratory system, liver, central nerve system, kidney) | 1 (respiratory system, nerve system) | 2 |
| | 3 (anesthetic action) | | |
| Ethyl benzene | 2 (central nerve system) | Not possible | 1 |
| | 3 (respiratory tract irritation) | | |
| Mineral spirit | 3 (respiratory tract irritation, anesthetic action) | 2 (liver, testicle) | 1 |
| Ethanol | 3 (respiratory tract irritation, anesthetic action) | 1 (lung) | Not possible |
| | | 2 (central nerve system) | |
| Zinc | Not possible | Not possible | Not possible |
| Zinc oxide | 1 (respiratory organ, systemic toxicity) | Not possible | Not possible |

12. Ecological information

12.1 Ecotoxicity

| Material | Acute Aquatic Toxicity | Chronic Aquatic Toxicity | Hazard to Ozone |
|----------------|------------------------|--------------------------|-----------------|
| Aluminum | Not possible | 4 | Not possible |
| Xylene | 2 | 2 | Not possible |
| Ethyl benzene | 1 | Not classified | Not possible |
| Mineral spirit | 1 | 1 | Not possible |
| Ethanol | Not classified | Not classified | Not possible |
| Zinc | 1 | 1 | Not possible |
| Zinc oxide | 1 | 1 | Not possible |

12.2 Persistence and degradative

Xylene does not have rapid degradative (BOD: 39%)

Ethyl benzene has rapid derivative, stripping from water.

Mineral spirit does not have rapid degradative (BOD: 12-13%)

12.3 Bioaccumulation potential

Xylene may be low potential (log Kow=3.16)

Ethyl benzene may be low potential (log Kow=3.15)

Mineral spirit: no data

13. Disposal considerations

Waste treatment methods

Avoid release to the environment.

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

Dispose to an authorized waste collection point.

14. Transport information

UN No. : 1263
UN Class : 3 (Flammable liquid)
PG : III

15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture.

Other information is not available.

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

16. Other information

International Chemical Safety Cards (ICSCs)/ Hazardous Substances Data Bank (HSDB)

MSDS from The Japan Paint Manufacturers Association (JPMA)

MSDS from manufacturers of raw materials

This data sheet is created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.