

Safety Data Sheet

1. Products and company identification

Product name	ROVAL ZC Galvanizing Repair Metallic Spray
Supplier Name	Shanghai Roval Zinc Rich Paint Corporation
Supplier Address	NO.393 Fenggong RD, Jiading Malu Shanghai, China
Telephone number	+86-21-69156584
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Recommended use	Galvanizing Repair and Anti-corrosion of steel
Date of revision	May 11 th , 2020

2. Hazards identification

2.1 Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable aerosol: Category 2

HEALTH HAZARDS

Acute toxicity inhalation (vapors): Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/Eye irritation: Category 2

Germ Cell Mutagenicity: Category 1

Carcinogenicity: Category 2

Reproductive toxicity: Category 1

TOST: Single exposure: Category 1 (central nerve system, respiratory organs, liver, kidney)

Category 2 (heart)

Category 3 (may cause drowsiness or dizziness)

Repeated exposure: Category 1 (nerve system, respiratory organs)

Category 2 (ling)

ENVIRONMENTAL HAZARDS:

Acute aquatic toxicity: Category 1

Chronic aquatic toxicity: Category 2

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

2.2 Label elements



Signal word: DANGER

HAZARD STATEMENT

- H223 Flammable aerosol
- H229: Pressurized container: may burst if heated
- H315: Causes skin irritation
- H319: Causes serious eye irritation
- H332: Harmful if inhaled
- H340: May cause genetic defects
- H351: Suspected of causing cancer
- H360: May damage fertility or the unborn child
- H370: 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.
- P211: Do not spray on an open flame or other ignition source.
- P240: Ground/bond container and receiving equipment.
- P251: Do not pierce or burn, even after use.
- 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

- P410+411: Protect from sunlight. Store at temperatures not exceeding 40°C/104°F.
- P405: 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	<5	7429-90-5
Xylene	10.8	1330-20-7
Ethyl benzene	10.0	100-41-4
Ethanol	0~1	64-17-5
Butane	20~25	106-97-8
Isobutane	10~15	75-28-5
Propane	10~15	74-98-6
Zinc	15~20	7440-66-6
Zinc oxide	<5	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)
Butane	800ppm (TWA)
Isobutane	250ppm (TWA)
Propane	1000ppm (TWA)
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	: -42.1°C ~144°C
Flash point	: Paint liquid 22°C, propellant -104°C
Auto-ignition temperature	: 405°C
Lower and upper explosion limit/flammability limit:	
Lower explosion limit	: 0.8vol%
Upper explosion limit	: 9.5vol%
Vapor pressure	: 1275kPa (20.8°C)
Specific Gravity	: 0.78

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
Ethanol	5g/kg	Not classified	20g/kg	Not classified
Butane	Not applicable		Not applicable	
Isobutane	Not possible		Not possible	
Propane	Not applicable		Not applicable	
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		6700ppm	4	Not possible	
Ethyl benzene	Not applicable		4000ppm	4	Not possible	
Ethanol	Not applicable		20661ppm	Not classified	Not applicable	
Butane	277274ppmV	Not classified	Not applicable		Not applicable	
Isobutane	11000ppm	4	Not applicable		Not applicable	
Propane	38890ppmV	Not classified	Not applicable		Not applicable	
Zinc	Not applicable		>5.41mg/L		Not classified	
Zinc oxide	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
Ethanol	Not classified	2B	Not possible	Not possible
Butane	Not possible	Not possible	Not possible	Not possible
Isobutane	Not classified	Not classified	Not possible	Not possible
Propane	Not classified	Not possible	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
Ethanol	1B	Not possible	1A
Butane	Not possible	Not possible	Not possible
Isobutane	Not possible	Not possible	Not possible
Propane	Not possible	Not possible	Not possible
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)		
Ethanol	3 (respiratory tract irritation, anesthetic action)	1 (liver)	Not possible
		2 (central nerve system)	
Butane	3 (anesthetic action)	Not possible	Not applicable
Isobutane	2 (Heart)	Not possible	Not applicable
	3 (anesthetic action)		
Propane	3 (anesthetic action)	Not possible	Not applicable
Zinc	Not possible	Not possible	Not possible
Zinc Oxide	1 (respiratory system, 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
Ethanol	Not classified	Not classified	Not possible
Butane	Not possible	Not possible	Not possible
Isobutane	Not possible	Not possible	Not possible
Propane	Not possible	Not possible	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.

12.3 Bioaccumulation potential

Xylene may be low potential (log Kow=3.16)

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

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. : 1950

UN Class : 2.1 (Flammable gas)

PG : ---

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.