

Safety Data Sheet

[Mixture (Paint)]

1. Products and company identification

Product name	ROVAL SILVER
Supplier	Roval Corporation
Address	1-1, Nomuramotomachi, Hirakata, Osaka
Section in charge	Technical service department
Phone number	+81-72-894-7590
Fax number	+81-72-894-7593
e-mail address	jp-info@roval-group.com
Emergency Phone Number	+81-72-894-7191
Preparation, revision, and confirmation	May 8, 2023
Product type	One-component organic zincrich paint (with high-content of zinc powder)
Recommended use	Rust prevention of iron and galvanizing surfaces

2. HAZARDS IDENTIFICATION

[GHS Classification]

PHYSICAL HAZARDS		Flammable Liquid	Category 2		
HEALTH HAZARDS	Acute toxicity				
	Oral	Dermal	Inhalation (Gases)	Inhalation (Vapours)	Inhalation (Dust/Mist)
	Not classified	Classification not possible	Classification not possible	Category 4	Not classified
	Skin corrosive /irritating	Serious eye damage /eye Irritation	Respiratory/Skin sensitization		
			Solid/Liquid	Gas	Skin sensitisation
	Category 2	Category 2	Classification not possible	Classification not possible	Not classified
	Germ cell mutagenicity	Carcinogenicity	Reproductive toxicity	Effects on or via lactation	
	Classification not possible	Category 2	Category 1 B	Classification not possible	
	STOT (Single exposure)	Category 1 central nervous system, respiratory system, liver, kidney	Category 2 systemic toxicity	Category 3 May cause respiratory irritation May cause drowsiness and dizziness	
	STOT (Repeated exposure)	Category 1 nervous system, respiratory system	Category 2 liver, testis, and hearing		
Aspiration hazard	Hazardous to the aquatic environment (Acute)	Hazardous to the aquatic environment (Chronic)	Hazardous to the ozone layer		
Not classified	Category 1	Category 1	Classification not possible		

[GHS Symbols]

Pictogram:



Signal word:

DANGER

Hazard statement:

- H225 : Highly flammable liquid and vapour.
- H332 : Harmful if inhaled.
- H315 : Causes skin irritation.
- H319 : Causes serious eye irritation.
- H351 : Suspected of causing cancer.

- H360 : May damage fertility or the unborn child.
H370 : Causes damage to organs (central nerve system, respiratory organs, liver, kidney).
H371 : May cause damage to organs(systemic toxicity).
H335 : May cause respiratory irritation.
H336 : May cause drowsiness or dizziness.
H372 : Causes damage to organs (nervous system, respiratory system) through prolonged or repeated exposure.
H373 : May cause damage to organs (liver, testis, and hearing) through prolonged or repeated exposure.
H410 : Very toxic to aquatic life with long lasting effects.

Precautionary Statement:

[SAFETY MEASURES]

- P201 : Obtain special instructions before use.
P202 : Do not handle until all safety precautions have been read and understood.
P210 : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 : Keep container tightly closed.
P240 : Ground and bond container and receiving equipment.
P241 : Use explosion-proof electrical/ventilating/lighting/equipment.
P242 : Use non-sparking tools.
P243 : Take action to prevent static discharges.
P260 : Do not breathe dust/fume/gas/mist/vapours/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.

[FIRST AID]

- P302+P352 : IF ON SKIN: Wash with plenty water/shower.
P303+P361+P353 : IF ON SKIN(or hair): Take off immediately all contaminated clothing.
Rinse affected areas with water [or shower].
P304+P340 : IF INHALED: Remove person to fresh air and Keep comfortable for breathing.
P305+P351+P338 : IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses,if present and easy to do. Continue rinsing.
P308+P313 : IF exposed or concerned: Get medical advice/attention.
P332+P313 : If skin irritation occurs: Get medical advice/attention.
P337+P313 : If eye irritation persists: Get medical advice/attention.
P362+P364 : Take off contaminated clothing and wash it before reuse.
P370+P378 : In case of fire: Use carbon dioxide, foam, powder, dry sand, or atomized reinforcing liquid to extinguish.
P391 : Collect spillage.

[STORAGE]

- P403+P235 : Store in well-ventilated place. Keep cool.
P405 : Store locked up.

[DISPOSAL]

- P501 : Appropriately dispose of the contents/containers in accordance with laws and regulations.

3. Composition/information on ingredients

Distinguishing Chemicals and Mixtures: Mixtures

Substance name	%Weigh	CAS No.
Xylene	17	1330-20-7
Ethylbenzene	16	100-41-4
Mineral spirits	1 ~ 5	8052-41-3
Ethanol	< 1	64-17-5
Zinc	45 ~ 50	7440-66-6
Zinc oxide	1 ~ 5	1314-13-2
Aluminum	1 ~ 5	7429-90-5

4. First-aid measures

Inhaled:

Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Contact a doctor when you feel ill.

Skin contact:

Wipe off the adherent quickly with a cloth. Wash the affected area with plenty of water with mild soap.

Do not use solvents or thinners.

If there is any change in appearance, irritation, or pain, consult a physician when mood is bad.

Take off contaminated clothing and wash it before reuse.

If it gets on the skin (or hair): remove all contaminated clothing.

Wash skin with water or shower.

Eye contact:

Wash immediately with plenty of clean running water for at least 15 minutes.

Remove contact lenses, if present and easy to do.

Consult a doctor as soon as possible.

If on clothing:

Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.

Swallowed:

If swallowed incorrectly, allow the patient to rest and consult a physician immediately.

Do not induce vomiting.

Emergency measures:

Wear appropriate protective equipment (protective glasses, protective masks, gloves, etc.).

Keep ventilation.

5. Fire-fighting measures

Suitable extinguishing agents:

Carbon dioxide, foam, powder, dry sand, and atomized reinforcing liquid.

Fire extinguishing agents not to be used:

Water (rod-shaped water, high-pressure water)/rod-shaped reinforcing liquid.

Special methods for extinguishing fires, protection of persons who extinguish fires:

Wear proper protective equipment.

Quickly remove flammable materials from the surroundings if safe to deal with.

Use specified extinguishing media.

Cool closed containers which may be exposed to heat.

Extinguish from windward side.

6. Accidental release measures

Precautions for the Human Body, Protective Equipment, and Emergency Measures:

- Appropriate protective equipment (protective gloves, protective masks, aprons, goggles, etc.) should be worn during work.
- Ventilating firmly indoors in outdoor cases, work from the windward as much as possible.
- Prevent secondary disasters by prohibiting access to the surrounding area and keeping other people away.
- Avoid sparks, flames and anything which can cause fire.
- Prepare extinguishing media for accidental fire.

Environmental precautions:

- Be careful not to cause environmental effects due to discharge into rivers, etc.

Containment and Purification Methods and Equipment:

- For small spill, absorb spills with inert materials, then place in a chemical waste containers.
- Disposal of deposits, waste, etc. shall be made in accordance with relevant laws and regulations.
- Collect by using a tool made of a material that does not generate sparks due to impact or static electricity.
- Absorb in dry sand, soil, or other non-combustible materials for recovery.
- A large amount of leakage is prevented by surrounding with embankment.

7. Handling and storage

Handling:

- Handle in a well-ventilated area.
- The container is sealed each time.
- Keep away any source of flame, sparks, and heat.
- Wear antistatic cloths and shoes.
- Use sparkless equipment.
- For countermeasures against static electricity, the equipment, etc. shall be grounded, and explosion-proof type shall be used for the electrical equipment, etc.
- Used waste, paint waste, spray dust, etc. should be kept in water until discarded.
- Wear protective equipment to keep skin, mucous membranes, or clothing from touching or coming into the eyes.
- Wash hands and face completely after the handling.
- Handle in a well-ventilated area.
- Wear personal protective cloths.

Storage:

- Avoid direct sunlight. Store in a dry, well-ventilated area.
- Take necessary measures to prevent leakage, overflow, or splashing.
- Keep locked to prevent theft.
- Keep out of the reach of children.
- Keep containers away from fire/flame.

8. Exposure controls/personal protection

Substance name	ACGIH
Xylene	100 ppm(TWA)
Ethylbenzene	20 ppm(TWA)
Mineral spirits	100 ppm(TWA)
Ethanol	1000 ppm(STEL)
Zinc	—————
Zinc oxide	2 mg /m ³ (TWA)
Aluminum	1 mg /m ³ (TWA)

[Equipment Measures]

- Use air extractors to prevent fume formation.
- Equipment for transporting, pumping, agitation, etc. of liquids shall be equipped to be grounded.
- Equipment shall be installed in the vicinity of the handling site so as not to be subject to high temperatures or ignition sources.

In the case of indoor painting work, equipment that does not expose workers directly, such as by using automatic painting machines, etc., or equipment that avoids workers from exposure by local exhaust ventilation systems, etc., shall be used.

When working in a sealed place such as the inside of a tank, install a device that can sufficiently ventilate to the bottom of the sealed place.

[Protection]

Respiratory protection:

Wear gas masks for organic gases.

In cases of inadequate ventilation, a respiratory protective device should be worn to prevent overexposure.

Hand protection:

Wear gloves made of organic solvents or chemicals that do not penetrate.

Eye protection:

Wear protective glasses for handling.

Skin and body protection:

When handled, wear clothing that does not directly expose the skin.

Further, it is desirable that the material is a material that does not permeate the chemical.

Other:

Wear antistatic clothing and electrostatic shoes when performing electrostatic painting operations.

9. Physical and Chemical Properties and safety characteristics

Physical state	:Liquid	Colour	:Silver
Odour	:Solvent odour	Boiling point	:138°C~200°C
Flammability	: Flammable liquid	Explosion Limits	: LEL 0.7vol% UEL 7.6 vol %
Flash point	:22.1°C	Auto-ignition temperature	:245°C
Decomposition temperature	:No data	Kinematic viscosity	:No data
Vapor pressure	:0.9kPa	Densities (g/ml)	:1.68
Relative vapour density	:about 3.8		

10. Stability and reactivity

Reactivity: No self-reactivity.

Chemical stability: Stable in normal handling.

Possibility of hazard reaction: No Data.

Conditions to avoid: Heating, high temperature, contact with incompatible substances.

Forming of mixture with atmosphere within flammable limit.

Incompatible substances: Risk of reacting on contact with oxidizing substances, water, etc.

Hazardous decomposition products: Heat decomposition produces carbon monoxide, carbon dioxide. Generate stimulant gas.

11. Toxicological information

ACUTE TOXICITY

Substance name	Oral	Classification	Demal	Classification
Xylene	3.5 g / kg	Not classified	1.7 g / kg	Category 4
Ethylbenzene	3.5 g / kg	Not classified	5.0 g / kg	Not classified
Mineral spirits	> 5.0 g / kg	Not classified	Classification not possible	
Ethanol	6.2 g / kg	Not classified	20.0 g / kg	Not classified
Zinc	> 2.0 g / kg	Not classified	Classification not possible	
Zinc oxide	> 5.0 g / kg	Not classified	> 5.0 g / kg	Not classified
Aluminum	Classification not possible		Classification not possible	

ACUTE TOXICITY

Substance name	Inhalation (Gas)	Classification	Inhalation (Vapors)	Classification	Inhalation (dust, mist)	Classification
Xylene	Not classified		6350 ppm	Category 4	Classification not possible	
Ethylbenzene	Not classified		4000 ppm	Category 4	Classification not possible	
Mineral spirits	Not classified		Classification not possible		Classification not possible	
Ethanol	Not classified		63000 ppm	Not classified	Classification not possible	
Zinc	Not classified		Classification not possible		> 5.4 mg / L	Not classified
Zinc oxide	Not classified		Not classified		> 5.7 mg / L	Not classified
Aluminum	Not classified		Not classified		Classification not possible	

Substance name	Skin corrosive/ Irritating	Serious eye damage /eye Irritation	Respiratory sensitisation	Skin sensitisation
Xylene	Category 2	Category 2	Classification not possible	Classification not possible
Ethylbenzene	Not classified	Category 2B	Classification not possible	Classification not possible
Mineral spirits	Category 2	Not classified	Classification not possible	Not classified
Ethanol	Not classified	Category 2B	Classification not possible	Classification not possible
Zinc	Not classified	Category 2B	Classification not possible	Not classified
Zinc oxide	Not classified	Not classified	Classification not possible	Not classified
Aluminum	Classification not possible	Classification not possible	Classification not possible	Classification not possible

Substance name	Germ Cell Mutagenicity	Carcinogenicity	Reproductive toxicity
Xylene	Classification not possible	Classification not possible	Category 1 B
Ethylbenzene	Not classified	Category 2	Category 1 B
Mineral spirits	Not classified	Classification not possible	Not classified
Ethanol	Classification not possible	Classification not possible	Classification not possible
Zinc	Classification not possible	Classification not possible	Classification not possible
Zinc oxide	Classification not possible	Classification not possible	Category 2
Aluminum	Classification not possible	Classification not possible	Classification not possible

Substance name	STOT (Single exposure)	STOT (Repeat exposure)	Aspiration hazard
Xylene	Category 1 (respiratory, liver, central nervous system, kidney)	Category 1 (respiratory, nervous system)	Category 1
	Category 3 (anesthetic effect)		
Ethylbenzene	Category 3 (irritating to the respiratory tract, anesthetic effect)	Category 2 (hearing apparatus)	Category 1
Mineral spirits	Category 3 (irritating to the respiratory tract, anesthetic effect)	Category 2 (liver, testis)	Category 1
Ethanol	Category 3 (anesthetic effect)	Classification not possible	Not classified
Zinc	Classification not possible	Classification not possible	Classification not possible
Zinc oxide	Category 1 (respiratory, systemic toxicity)	Classification not possible	Classification not possible
Aluminum	Category 1 (respiratory)	Category 1 (respiratory)	Classification not possible

1 2. Ecological information

General precautions: When leaking or disposing of the product, be careful to handle it because it may affect the environment.

The product may have adverse effect on environment.

Substance name	Hazardous to the aquatic environment(Acute)	Hazardous to the aquatic environment (Chronic)	Hazardous to the ozone layer
Xylene	Category 2	Category 2	Classification not possible
Ethylbenzene	Category 1	Category 2	Classification not possible
Mineral spirits	Category 1	Category 1	Classification not possible
Ethanol	Not classified	Not classified	Classification not possible
Zinc	Category 1	Category 1	Classification not possible
Zinc oxide	Category 1	Category 1	Classification not possible
Aluminum	Classification not possible	Classification not possible	Classification not possible

Ecotoxicity:

No data

Persistence and degradability:

No rapid degradability (degree of degradation by BOD: 39%) 《Xylene》

Has rapid decomposition (degree of degradation by BOD: 81-126%) 《Ethylbenzene》

No rapid degradability (degree of degradation by BOD: 12-13%) 《Mineral spirits》

Has rapid decomposition (degree of degradation by BOD: 89%) 《Ethanol》

No rapid degradability (metal compound) 《zinc》

Bioaccumulation:

May be low potential (log K_{ow} = 3.16) 《Xylene》

May be low potential (log K_{ow} = 3.15) 《Ethylbenzene》

No data available 《Mineral spirits》

Mobility in soil:

No data

1 3. Disposal considerations

[Residual Waste, Contamination Containers and Packaging]

In the case of disposal, the relevant laws and regulations and the standards of local governments shall be complied with. Waste including residue and container should be disposed by licensed industrial waste disposer after the consignment contract. Wash water used for cleansing containers and equipment must not be released into environment. For other wastage arouse in effluent processing or incineration, dispose of them in accordance with the law or entrust it. Dispose of the empty container after the rest of paint completely removed. It is recommended to recycle empty containers and packaging. When there is a possibility of generating toxic gases such as dioxin, enter into a contract with a licensed industrial waste disposal company and dispose of it. Dispose of the empty container after the rest of paint completely removed. Empty container should be disposed of by industrial waste disposal contractor after the consignment contract.

1 4. Transport information

UN No. 1263 Proper shipping name: Paint or Paint related material Hazard class: 3 PG :II

Special precautions for transport or means of transport:

Follow the instructions in the Handling and Storage Precautions section.

Check that there is so leaking in the container,and load.

Prevent collapse of the container so that there is no falling or damage.

[Regulations]

Land transport:

Follow the transport methods stipulated in the Fire Service Law and the Industrial Safety and Health Law, if applicable.

The consignor shall issue the Carriage Precautions (Yellow Card) to the Carrier.

Maritime transport:

In accordance with the Ship Safety Law.

Air transport:

In accordance with the provisions of the Aeronautical Law.

1 5. Regulatory information

Classification and labeling in accordance with Labor Safety and Health Act:

See Section 2

Other regulation for foreign countries:

Regulatory information with regards to this preparation in your country or region should be examined by your own responsibility.

1 6. Other information

References:

- 1) GHS Classification Guidance for Enterprises.
- 2) SDS from manufacturers of raw materials.
- 3) Roval's own data.

The information herein is given in good faith, but no warranty, express or implied, is made.

The information contained herein is, to the best of Roval's knowledge and belief, accurate and reliable as of the data issued. It is the user's responsibility to determine the suitability of this information for the adoption of necessary safety precautions. We reserve the right to revise SDS periodically as new information becomes available.