

## Safety Data Sheet

[Mixture (Paint)]

### 1. Products and company identification

|   |   |
|---|---|
| Product name                            | ROVAL SILVER ECO TYPE HAKETSUKIKAN  |
| Supplier                                | Roval Corporation   |
| Address                                 | 1-1, Nomuramotomachi, Hirakata, Osaka                                     |
| Section in charge                       | Research & Development 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 | Mar 16, 2026  |
| Product type                            | One component organic zinc rich paints (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<br>HAZARDS | Acute toxicity                                  |                                       |   |  |                             |
|                   | Oral  | Dermal                                | Inhalation (Gases)                                | Inhalation (Vapours)                                   | Inhalation (Dust/Mist)      |
|                   | Classification not possible                     | Classification not possible           | Classification not possible                       | Classification not possible                            | Classification not possible |
|                   | Skin corrosive<br>/irritating                   | Serious eye damage<br>/eye Irritation | Respiratory/Skin sensitization                    |  |                             |
|                   |   |                                       | Solid/Liquid                                      | Gas  | Skin sensitisation          |
|                   | Classification not possible                     | Category 2B                           | Classification not possible                       | Classification not possible                            | Classification not possible |
|                   | Germ cell mutagenicity                          | Carcinogenicity                       | Reproductive toxicity                             | Effects on or via lactation                            |                             |
|                   | Classification not possible                     | Classification not possible           | Classification not possible                       | Classification not possible                            |                             |
|                   | STOT<br>(Single exposure)                       | Category 1                            |   | Category 2<br>Respiratory system,<br>Systemic toxicity | Category 3                  |
|                   | STOT<br>(Repeated exposure)                     | Category 1                            |   | Category 2<br>Respiratory system                       |                             |
| Aspiration hazard | Hazardous to the aquatic environment<br>(Acute) |                                       | Hazardous to the aquatic environment<br>(Chronic) | Hazardous to the ozone layer                           |                             |
| Not classified    | Category 1                                      |                                       | Category 1  | Classification not possible                            |                             |

#### [GHS Symbols]

##### Pictogram:



##### Signal word:

WARNING

##### Hazard statement:

- H226 : Flammable liquid and vapour
- H320 : Causes eye irritation
- H371 : May cause damage to organs (systemic toxic)
- H373 : May cause damage to organs (respiratory system) through prolonged or repeated.

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.

P273 : Avoid release to the environment.

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

[FIRST AID]

P303+P361+P353 : IF ON SKIN(or hair): Take off immediately all contaminated clothing.  
Rinse affected areas with water [or shower].

P305+P351+P338 : IF IN EYES: Rinse cautiously with water for several minutes.  
Remove contact lenses,if present and easy to do. Continue rinsing.

P314 : Get medical advice/attention if you feel unwell.

P337+P313 : If eye irritation persists: Get medical advice/attention.

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.

[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.   |
|----------------------------|---------|-----------|
| Zinc                       | 65 ~ 70 | 7440-66-6 |
| Zinc oxide                 | 1 ~ 5   | 1314-13-2 |
| Aluminum                   | 1 ~ 5   | 7429-90-5 |
| 1-Methoxy-2-propyl acetate | 5 ~ 10  | 108-65-6  |

**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 a few 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/flare.

**8. Exposure controls/personal protection**

| Substance name             | ACGIH                      |
|----------------------------|----------------------------|
| Zinc                       | ————                       |
| Zinc oxide                 | 2 mg /m <sup>3</sup> (TWA) |
| Aluminum                   | 1 mg /m <sup>3</sup> (TWA) |
| 1-Methoxy-2-propyl acetate | ————                       |

**[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.

**[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 | Flammability              | :Flammable liquid           |
| Flash point  | : 24.2°C       | Auto-ignition temperature | :about 250°C                |
| Decomposition temperature                            | :No data       | Kinematic viscosity       | :No data                    |
| Vapor pressure                                       | :266Pa(20°C)   | pH                        | :No data                    |
| Relative vapour density                              | :about 3.8     | Particle characteristics  | :No data                    |
| Density and/or relative density                      |                |                           | :1.73                       |
| Boiling point or initial boiling point               |                |                           | :105°C~200°C                |
| Lower and upper explosion limit / flammability limit |                |                           | : LEL 1.5vol% UEL 7.6 vol % |

### 1 0. 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.

### 1 1. Toxicological information

#### ACUTE TOXICITY

| Substance name             | Oral                        | Classification | Demal                       | Classification |
|----------------------------|-----------------------------|----------------|-----------------------------|----------------|
| 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 |                |
| 1-Methoxy-2-propyl acetate | 8.532g / kg                 | Not classified | > 5.0 g / kg                | Not classified |

#### ACUTE TOXICITY

| Substance name             | Inhalation (Gas) | Classification | Inhalation (Vapors)         | Classification              | Inhalation (dust, mist)     | Classification |
|----------------------------|------------------|----------------|-----------------------------|-----------------------------|-----------------------------|----------------|
|                            | Zinc             | Not classified |                             | Classification not possible |                             | > 5.4 mg / L   |
| Zinc oxide                 | Not classified   |                | Not classified              |                             | > 5.7 mg / L                | Not classified |
| Aluminum                   | Not classified   |                | Not classified              |                             | Classification not possible |                |
| 1-Methoxy-2-propyl acetate | Not classified   |                | Classification not possible |                             | Classification not possible |                |

| Substance name             | Skin corrosive/Irritating   | Serious eye damage /eye Irritation | Respiratory sensitisation   | Skin sensitisation          |
|----------------------------|-----------------------------|------------------------------------|-----------------------------|-----------------------------|
| 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 |
| 1-Methoxy-2-propyl acetate | Not classified              | Category 2B                        | Classification not possible | Not classified              |

| Substance name             | Germ Cell Mutagenicity      | Carcinogenicity             | Reproductive toxicity       |
|----------------------------|-----------------------------|-----------------------------|-----------------------------|
| 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 |
| 1-Methoxy-2-propyl acetate | Classification not possible | Classification not possible | Not classified              |

| Substance name             | STOT (Single exposure)  | STOT (Repeat exposure)      | Aspiration hazard           |
|----------------------------|---|-----------------------------|-----------------------------|
| 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-Methoxy-2-propyl acetate | Category 3 (irritating to the respiratory tract, anesthetic effect) | Classification not possible | 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 |
|----------------|---|--|------------------------------|
| 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 |
| 1-Methoxy-2-propyl acetate | Not classified              | Not classified              | Classification not possible |

**Ecotoxicity:**

No data

**Persistence and degradability:**

No rapid degradability (metal compound) «zinc»

**Bioaccumulation:**

No data

**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 :III

**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.

**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.