

Safety Data Sheet

1. Products and company identification

Product name: ROVAL SILVER
Recommended use: Anti-corrosion of steel/iron.
Supplier: Roval Corporation
6-41-1, Ikuno, Katano
Osaka, 5760054, Japan
+81-72-892-7791
Emergency phone number: +81-72-892-9955
Date Revised/Confirmed: March 5, 2018

2. Hazards identification

PHYSICAL HAZARDS: Flammable Liquid Category 2

HEALTH HAZARDS:

Acute Toxicity	Oral:	Not Classified
	Dermal:	Not Classified
	Inhalation (Vapors):	Category 4
	Inhalation (dust/mist)	Not Classified
Skin Corrosion/Irritation:		Category 2
Eye Effects/Serious eye damage/Eye irritation:		Category 2
Skin sensitizer:		Not Classified
Germ Cell Mutagenicity:		Not Classified
Carcinogenicity:		Category 1
Reproductive Toxicity:		Category 1
TOST: Single Exposure:		Category 1; Damage to organs (central nerve system, kidney, respiratory system, and liver) Category 2; May cause damage to organs (systemic toxicity) Category 3; May cause drowsiness or dizziness.
Repeated Exposure:		Category 1; Damage to organs through prolonged or repeated exposure (nerve system and respiratory system) Category 2 (---)
Acute Aquatic Toxicity:		Category 1
Chronic Aquatic Toxicity:		Category 1
Hazard to ozone layer		Classification not possible

*Item without description of classification means “classification not possible” or “not classified”.

Hazard Symbols:



Signal Word: DANGER

Hazard Statement:

- Flammable liquid and vapor
- Harmful if inhaled
- Cause skin irritation
- Causes serious eye irritation
- Suspected of causing cancer
- Suspected of damaging fertility or the unborn child
- Causes damage to organs
- Causes damage to organs through prolonged or repeated exposure
- Very toxic to aquatic life with long lasting effects

Precautionary Statements:

[PREVENTION]

- Obtain special instruction before use
- Do not handle until all safety precautions have been read and understood
- Keep away from heat/sparks/open flames/hot surfaces – No smoking
- Keep container tightly closed.
- Ground container and receiving equipment.
- Use explosion-proof electrical/ventilating/light/equipment
- Use anti-spark tools
- Take precautionary measures against static discharge
- Do not breathe dust/fume/gas/mist/vapor/spray
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Avoid release to the environment
- Wear protective gloves/protective clothing/eye protection/face protection

[FIRST AID]

- IF ON SKIN or HAIR: Take off contaminated clothing and wash before use. Rinse skin/hair with water/shower.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
- IF EXPOSED (or possible): Get medical attention.
- If skin irritation occurred: Get medical attention.
- If eye irritation persists: Get medical advice/attention.
- Take off contaminated clothes. Wash them before reusing.
- IF ON FIRE: Use carbon dioxide, foam, or powder extinguisher.
- Recover the leakage.

[STORAGE]

-Store in a cool, well ventilated place. -Keep locked up.

[DISPOSAL]

-Follow the regulations of your country when disposing of the container.

3. Composition/information on ingredients

Substance/Mixture: Mixture

General product description: Paint

Chemical Identity	CAS Number	% Weigh
Aluminum	7429-90-5	1~5
Xylene	1330-20-7	17
Ethyl benzene	100-41-4	16
Mineral Spirit	8052-41-3	1~5
Ethanol	64-17-5	0~1
Solvent naphtha	64742-95-6	1~5
Zinc	7440-66-6	45~50
Zinc oxide	1314-13-2	<5.0

4. First-aid measures

Inhalation: In case of being sick after inhalation of vapor or gas, remove a victim to fresh air at comfortable posture for breathing. If the symptom persists, get medical attention. If inhaled a large amount of vapor or gas, remove a victim to fresh air and keep warm. If breathing is irregular or not breathing, give artificial respiration. Do not let swallow vomit. Get medical attention immediately.

Skin contact: Wipe off accretion quickly. Wash the affected area with plenty of water with mild soap. Do not use solvent or thinner. If apparent condition changes or irritation is continued, refer to medical attention. Remove all the contaminated clothes.

Eye contact: Gently rinse the affected eyes with clean water for at least 15 minutes lifting upper and lower eyelids occasionally. Remove contact lenses if present and easy to do. Get immediate medical attention.

Ingestion: Keep rest and get medical attention immediately. Do not let swallow vomit. Do not induce vomiting without medical instruction.

5. Firefighting measures

Extinguishing Media: Carbon dioxide, foam, powder, dry sand, steam reinforced liquid
Water or stick reinforced liquid must NOT be used for extinction.

Special protective equipment and precaution for fire fighters:

Wear proper protective equipment. Remove sources of ignition. Use specified extinguishing media. Cool closed containers which may be exposed to heat. Extinguish from windward side.

6. Accidental release measures

Personal precautions:

Use the necessary personal protective equipment (gloves, masks, aprons, and goggles) when handling. Keep ventilating inside. Handle in windward side outside. Keep away any person who is not concerned. Remove all the combustible materials and source of heat/ignition. Prepare extinguishing media for accidental fire.

Environmental precautions:

Be careful not to affect environment by releasing the product to waterway.

Equipment and method for containment and cleaning-up:

Contain the leakage into closed container and store in a safe place. Dispose of accretion or waste in accordance with local regulation. Recover the leakage with equipment which do not spark by impact or static discharge.

7. Handling and Storage

[Handling]

Handle in a well ventilated area. Keep container closed when storage. Do not use devices generate fire, spark, or high-heat. Ground all the equipment and use explosion-proof electronic devices. Used waste clothes, paint dust, and spray dust should be soaked in water. Prepare ventilating and personal protective equipment when handing this product in closed area. Wear protective equipment to avoid contact of the product with skin, mucosal membrane, and clothes. Wash hands and face completely after the handling and do not bring contaminated equipment into rest stations.

[Storage]

Avoid direct sunshine. Store in a dry, well-ventilated area. Keep the container in locked-up place. Keep containers away from fire/flare. Keep out of the reach of children.

8. Exposure controls/ Personal protection

Control parameters:

Chemical Identity	ACGIH TLV (2016)
Aluminum	100ppm (TWA)
Xylene	100ppm (TWA) 150ppm (STEL)
Ethyl Benzene	20ppm (TWA)
Mineral Spirit	100ppm (TWA)
Solvent naphtha	N/A
Ethanol	1000 ppm (STEL)
Zinc	N/A
Zinc oxide	2mg/ m ³ (TWA)

Equipment measure:

Use explosion-proof equipment and ventilating equipment. Earth when using transporting, scooping, or agitating equipment. High-heat or source of ignition must not be put near the handling place. Use auto-painting equipment or local ventilating equipment to avoid direct contact of workers with the product in closed place. Prepare the equipment which can ventilate enough at the bottom in case of the operation inside of tanks.

Personal protection measures:

- Respiratory protection:** Wear protective mask for organic gas. Use ventilating mask in closed place.
- Hand protection:** Protective gloves for solvent or chemicals.
- Eye protection:** Wear protective goggles.
- Skin and body protection:** Wear protective clothes for chemicals to avoid direct contact.

9. Physical and Chemical Properties

Physical State:	Liquid	Color:	Silver
Odor:	Smells like solvent.	Density (g/ml):	1.68
Flash Point:	22.1°C	Explosion Limits(vol%):	LEL 0.6 UEL 8.0
Vapor Pressure:	266Pa(20°C)	Auto-ignition Temp:	230°C
Boiling Point:	130~230°C		

10. Stability and Reactivity

- Stability:** Stable under normal condition and anticipated storage.
- Conditions to avoid:** Heat, open fire and sparks. Forming of mixture with atmosphere within flammable limit.
- Possibility of Hazardous Reactions:** May react with acid or alkaline substances.
- Hazardous decomposition Products:** Generate carbon monoxide and carbon dioxide by heating. Generate stimulant gas.

11. Toxicological information

[ACUTE TOXICITY]

Material	Oral	Category	Dermal	Category
Aluminum	Classification not possible		Classification not possible	
Xylene	3.5 g / kg	Not classified	Classification not possible	
Ethyl benzene	3.5 g / kg	Not classified	15.4 g / kg	Not classified
Mineral spirit	>5.0 g / kg	Not classified	Classification not possible	
Solvent naphtha	8.4 g / kg	Not classified	---	
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

[ACUTE TOXICITY - Inhalation]

Material	Gas	Category	Vapor	Category	Dust/Mist	Category
Aluminum	Conclusive but not sufficient for classification		Classification not possible		Classification not possible	
Xylene	Conclusive but not sufficient for classification		6700 ppm	Category 4	Classification not possible	
Ethyl benzene	Conclusive but not sufficient for classification		4000 ppm	Category 4	Classification not possible	
Mineral spirit	Conclusive but not sufficient for classification		Classification not possible		Classification not possible	
Solvent naphtha	---		---		---	
Ethanol	Conclusive but not sufficient for classification		63000 ppm	Not classified	Classification not possible	
Zinc	Conclusive but not sufficient for classification		Classification not possible		>5.41 mg / L	Not classified
Zinc oxide	Conclusive but not sufficient for classification		Conclusive but not sufficient for classification		>5.7 mg / L	Not classified

Material	Skin Corrosion/Irritation	Eye damage/irritation	Respiratory sensitization	Skin sensitization
Aluminum	Classification not possible	Classification not possible	Classification not possible	Classification not possible
Xylene	Category 2	Category 2A	Classification not possible	Classification not possible
Ethyl benzene	Category 3	Category 2B	Classification not possible	Classification not possible
Mineral spirit	Category 2	Not classified	Classification not possible	Not classified
Solvent naphtha	---	---	---	---
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

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

Material	TOST (Single)	TOST (Chronic)	Aspiration hazard
Aluminum	Classification not possible	Category 1 (lung)	Classification not possible
Xylene	Category 1 (respiratory system, liver, central nerve system, kidney)	Category 1 (respiratory system, nerve system)	Category 2
	Category 3 (anesthetic action)		
Ethyl benzene	Category 2 (central nerve system)	Classification not possible	Category 1
	Category 3 (respiratory tract irritation)		
Mineral spirit	Category 3 (respiratory tract irritation, anesthetic action)	Category 2 (liver, testicle)	Category 1
Solvent naphtha	---	---	---
Ethanol	Category 3 (anesthetic action, respiratory tract irritation)	Category 1 (lung)	Classification not possible
		Category 2 (central nerve system)	
Zinc	Classification not possible	Classification not possible	Classification not possible
Zinc oxide	Category 1 (respiratory system, systemic toxicity)	Classification not possible	Classification not possible

12. Ecological Information

General Precaution: Be careful not to spill or leak product and wash water into river and water drain. The product may have adverse effect on environment.

Ecological Toxicity: Acute harmful effect on aqueous milieu.

Material	Acute Aquatic Toxicity	Chronic Aquatic Toxicity	Hazard to Ozone
Aluminum	Classification not possible	Category 4	Classification not possible
Xylene	Category 2	Category 2	Classification not possible
Ethyl benzene	Category 1	Not classified	Classification not possible
Mineral spirit	Category 1	Category 1	Classification not possible
Solvent naphtha	---	---	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

Persistence and Degradative: No rapid degradative (BOD: 39%) Xylene

Has rapid degradative and strips quickly from water. Ethyl benzene

No rapid degradative (BOD: 12-13%) Mineral spirit

No rapid degradative (Metal compound) Zinc

Bioaccumulation potential: Xylene; may be low potential (log K_{ow} = 3.16)

Ethyl benzene; may be low potential (log K_{ow} = 3.15)

Mineral spirit: No data available.

Mobility in soil: No data available.

13. Disposal considerations

[Residual Wastage]

Follow the local regulation. 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 arise in effluent processing or incineration, dispose of them in accordance with the law or entrust it. Disposal of the spray can must be done after making sure it is empty and no gas pressure inside.

The product, its residue, and incinerated ash are specially-controlled industrial wastes, which must be disposed of by a licensed industrial waste disposer.

14. Transport information

[Regulation] UN No.: 1263 UN Class: 3 (Flammable liquid) PG: II

General: Read sections concerning handling and storage. Confirm that there is no leakage and load the products without rolling, falling, or damage. Avoid load collapse.

Land: Follow local regulation, such as Fire Defense Law, Industrial Safety and Health Act, or Poisonous Material Act. Transporter must follow the precaution on the product labels.

Sea: Follow local regulations, such as Ship Safety Act or Act for the Prevention of Marine Pollution and Maritime Disasters.

Air: Follow local regulations, such as Aviation Law.

Other: Keep the container under the temperature less than 40°C. Be careful not to roll, fall, or damage.

Safety measure: Read the section regarding handling and storage. Confirm that there is no leakage and load the products without rolling, falling, or damage. Avoid load collapse.

15. 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.

16. Other Information

References:

- 1) GHS Classification Guidance for Enterprises. (United Nations 2009)
- 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.
