

Safety Data Sheet

1. Products and company identification

Product name: EPO ROVAL
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
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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:		Category 1
Germ Cell Mutagenicity:		Category 2
Carcinogenicity:		Category 1
Reproductive Toxicity:		Category 2
TOST: Single Exposure:		Category 1 (respiratory system) Category 2 (central nerve system, systemic toxicity) Category 3 (---)
Repeated Exposure:		Category 1 (central nerve system, bone) Category 2 (peripheral nervous system)
Acute Aquatic Toxicity:		Category 1
Chronic Aquatic Toxicity:		Category 1
Hazard to ozone layer:		Classification not possible

Hazard Symbols:



Signal Word: DANGER

Hazard Statement:

- Highly flammable liquid and vapor
- Harmful if inhaled
- Causes skin irritation
- Causes serious eye irritation
- May cause cancer
- May cause allergic skin reaction
- Suspected of damaging fertility or the unborn child
- Causes damage to organs
- Causes damage to organs through prolonged or repeated exposure
- Toxic to aquatic life with long lasting effects
- Suspected of causing genetic defects

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
- Do not take away contaminated clothes from work area
- Avoid release to the environment

[FIRST AID]

- IF SWALLOWED: Get medical attention immediately.
- 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.
- Do not force victim to vomit.
- 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
Butyl acetate	123-86-4	5~10
Ethanol	64-17-5	<1.0
Cyclohexanone	108-94-1	10~15
Methyl Ethyl Ketone	78-93-3	<5.0
Zinc	7440-66-6	70~75
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, form, 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/flame. Keep out of the reach of children.

8. Exposure controls/ Personal protection

Control parameters:

Chemical Identity	ACGIH TLV (2014)
Butyl acetate	150ppm (TWA)
Ethanol	1000ppm(TWA)
Cyclohexanone	20ppm (TWA)
Methyl Ethyl Ketone	200ppm (TWA)
Zinc	-
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:	Gray
Odor:	Smells like solvent.	Density (g/ml):	2.60
Flash Point:	15.3°C	Explosion Limits(vol%):	LEL 1.1 UEL 9.4
Vapor Pressure:	9.5kPa (20°C)	Auto-ignition Temp:	420°C
Boiling Point:	76.6~155.7°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
Butyl acetate	14.13 g / kg	Not classified	>17.6 g / kg	Not classified
Ethanol	>5.0 g / kg	Not classified	>20.0 g / kg	Not classified
Cyclohexanone	1.3 g / kg	Category 4	1.0 g / kg	Category 3
Methyl Ethyl Ketone	2.5 g / kg	Not classified	>5.0g / kg	Not classified
Zinc	>2.0 g / kg	Not classified	Not possible	
Zinc oxide	>5.0 g / kg	Not classified	Not possible	

Material	Inhalation Gas	Category	Inhalation Vapor	Category	Inhalation Dust/Mist	Category
Butyl acetate	Conclusive but not sufficient for classification		2000 ppm	Category 3	156 ppm	Category 3
Ethanol	Conclusive but not sufficient for classification		20661 ppm	Not classified	Not possible	
Cyclohexanone	Conclusive but not sufficient for classification		2450 ppm	Category 3	8000 ppm	Not classified
Methyl Ethyl Ketone	Conclusive but not sufficient for classification		11700 ppm	Category 4	Not possible	
Zinc	Conclusive but not sufficient for classification		Not possible		>5.41 mg / L	Not classified
Zinc oxide	Conclusive but not sufficient for classification		Not possible		>5.7 mg / L	Not classified

Material	Skin corrosion/irritation	Eye damage/irritation	Respiratory sensitization	Skin sensitization
Butyl acetate	Not classified	Category 2B	Not possible	Not classified
Ethanol	Not classified	Category 2B	Not possible	Not possible
Cyclohexanone	Category 2	Category 2A	Not possible	Category 1
Methyl Ethyl Ketone	Category 2	Category 2B	Not possible	Not possible
Zinc	Not classified	Category 2B	Not possible	Not classified
Zinc oxide	Not classified	Not classified	Not possible	Not classified

Material	Germ cell mutagenicity	Carcinogenicity	Reproductive toxicity
Butyl acetate	Not possible	Not possible	Not possible
Ethanol	Category 1B	Category 1	Category 1A
Cyclohexanone	Category 2	Not classified	Category 2
Methyl Ethyl Ketone	Not classified	Not classified	Not classified
Zinc	Not possible	Not possible	Not possible
Zinc oxide	Not possible	Not classified	Category 2

Material	TOST (single)	TOST (Chronic)	Aspiration hazard
Butyl acetate	Category 2 (central nerve system, respiratory system)	Not possible	Not possible
Ethanol	Category 3 (respiratory tract irritation, anesthetic action)	Category 1 (liver)	Not possible
		Category 2 (central nerve system)	
Cyclohexanone	Category 1 (respiratory system)	Category 1 (central nerve system, bone)	Not possible
	Category 2 (central nerve system)		
	Category 3 (anesthetic action)		
Methyl Ethyl Ketone	Category 1 (central nerve system)	Category 1 (central nerve system, peripheral nervous system)	Category 2
	Category 2 (kidney)		
	Category 3 (respiratory tract irritation)		
Zinc	Not possible	Not possible	Not possible
Zinc Oxide	Category 1 (lung, systemic toxicity)	Not possible	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.

[Environmental Hazard]

Material	Acute Aquatic Toxicity	Chronic Aquatic Toxicity	Hazard to Ozone
Butyl acetate	Category 3	Not classified	Not possible
Ethanol	Not classified	Not classified	Not possible
Cyclohexanone	Not classified	Not classified	Not possible
Methyl Ethyl Ketone	Not classified	Not classified	Not possible
Zinc	Category 1	Category 1	Not possible
Zinc oxide	Category 1	Category 1	Not possible

Persistence and Degradative: Has rapid degradative, Butyl acetate

No rapid degradative (Metal compound), Zinc

Bioaccumulation potential: Butyl acetate; may be low potential ($\log K_{ow} = 1.78$)

13. Disposal considerations

[Residual Wastage and Contaminated container/package]

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 arouse 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. Keep away source of flame and do not inhale mist during outgassing. In case incinerating the residue, incinerate it by bits

after absorbing the rest of paint with diatom earth or something, or spray the rest of paint into incinerator. In case the generation of harmful gas (dioxin) is expected, entrust disposal of them to industrial waste disposal contractor.

The product, its residue, and incinerated ash are industrial waste specified as toxic, which must be disposed in accordance with Waste Disposal and Public Cleaning Law and other concerning laws.

Contaminated clothes or papers should be stored in impermeable containers. Dispose of them with licensed industrial waste disposers.

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.