



## SAFETY DATA SHEET

### 1. Chemical Product and Company Identification

ProductName Ru (Chip,Grain,Powder,Sheet,Tablet,Target,Code #:RUE01PB)

Reference NO. RUE01PAG-001

Creation Date 2026/05/15

Company Name : Kojundo Chemical Laboratory Co.,Ltd.  
information  
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Product Use For research purposes

Restriction of use Seek expert judgment when using the product for applications other than those recommended

### 2. Hazards identification

[GHS CLASSIFICATION]

PHYSICAL HAZARDS

Not Classification criteria.

HEALTH HAZARDS

Not Classification criteria.

ENVIRONMENTAL HAZARDS

Not Classification criteria.

[GHS LABEL ELEMENTS]

Pictogram : Not applicable

Signal Word : Not applicable

Hazard Statement : Not applicable

Precautionary Statement

Safety measures : Not applicable

First aid measures : Not applicable

Storage : Not applicable

Disposal : Not applicable

### 3. Composition/information on ingredients

Classification of the substance or mixture : Substance

Chemical or generic name : Ruthenium

Chemical name	Concentration(%)	CAS RN®
Ruthenium	100.00	7440-18-8

### 4. First aid measures

Inhalation : Remove the exposed person immediately and provide fresh air.  
Get medical attention.

- Skin contact : Promptly flush contaminated skin with soap or mild detergent and water.  
Contact Dermatologist if irritation continues.
- Eye contact : Rinse cautiously with water for 15 minutes. Get medical attention from an ophthalmologist.  
When washing your eyes, hold your eyelids open with your fingers to allow water to reach every corner of your eyeballs and eyelids.
- Ingestion : Rinse mouth and throat with water. Get medical attention immediately.
- Necessary precautions for protection of person performing first aid measures : Rescue workers wear appropriate eye and skin protection equipment according to the situation.
- Special precautions for doctors : The doctor should carry out treatment that corresponds to the patient's symptoms.

## 5. Fire fighting measures

- Suitable extinguishing media : Use media appropriate for surrounding fire.
- Unsuitable extinguishing media : If there are overlapping items between "Suitable extinguishing media" and "Unsuitable extinguishing media", the use of that extinguishing media is prohibited.
- Special hazards arising from the substance or mixture : In the case of powders, there is a risk of dust explosions due to surrounding heat or ignition sources.
- Special protective equipment and precautions for fire-fighters : Wear appropriate respiratory air and the protective clothing (heat resistance).

## 6. Accidental release measures

- Personal precautions, protective equipment and emergency procedures : Remove all ignition sources.  
  
: Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its vapor/dusts.  
Indoor leakage: Ventilate as much as possible until the cleaning is completed.  
Outdoor leakage: Work from the windward and evacuate the leeward crowd.
- Environmental precautions : Prevent flow out to river, etc. so as not to badly affect.
- Methods and material for containment and cleaning up : Shut off leak if without risk.  
Avoid unnecessary contacts with spills.  
: Gather up, pack in closed DOT-approved waste container as much as possible.  
Carefully collect remnant and move to a safe place.
- Measures to prevent secondary disasters : Prevent leakage into sewer, rivers and etc., and take measures to prevent environmental pollution.

## 7. Handling and storage

- Handling
  - Technical measures : No information available
  - Precautions for safe handling : If dust is generated.  
Use explosion-proof electrical/ventilating/lighting equipment.  
Fine powder originated from the products (excluding non-oxidizing oxides) has very high reactivity.
  - Avoid contact : Use protective wears and local ventilation equipment, if inhalation or skin contact is foreseen.  
Avoid prolonged or repeated exposure.
  - Hygiene measures : Do not eat, drink or smoke when using this product.

## Storage

- Safe storage conditions : Store the material in a sealed container.  
Store in a cool, dry, well ventilated and dark place away from incompatible materials.  
: Store molded products such as targets in an unopened condition.
- Safe container packaging materials : No information available

## 8. Exposure controls / Personal protection

## Control parameters

Chemical name	ACGIH	OSHA
Ruthenium	-	-

- Equipment : Install the appropriate general ventilation equipment, local exhaust ventilation in the workplace.
- Personal protection
- Respiratory protection : Wear appropriate NIOSH/MSHA-approved respirator.
- Hand protection : Wear appropriate NIOSH/MSHA-approved impervious gloves.
- Eye and face protection : Wear appropriate NIOSH/MSHA-approved safety goggles.
- Skin and body protection : Wear appropriate NIOSH/MSHA-approved impervious protective wear, protective boots.
- Special precautions : Regularly check your protective gear.  
: The notes for the table are as follows.  
D: Dust, M: Mist, F: Fumes, I: Inhalable particles, R: Respirable particles, IFV: Inhalable particles and vapors, T: Total dust, V: Vapors, C: Ceiling limit

## 9. Physical and chemical properties

- Physical state : Solid
- Color : Silver white
- Odour : No information available
- Melting point/Freezing point : 2310°C
- Boiling point, initial boiling point and boiling range : 3900°C
- Flammability : Non-combustible (Powders are flame retardant.)
- Range of explosion (lower bound - upper bound) : No information available
- Flash point : No information available
- Autoignition temperature : No information available
- Decomposition temperature : No information available
- pH : No information available
- Kinematic viscosity : No information available
- Solubility : Insoluble in water(Soluble in aqua regia containing oxygen, and gradually dissolves in hydrochloric acid.)
- Partition coefficient (n-octanol/water) : No information available
- Vapor pressure : No information available
- Density/Specific gravity : 12.37g/cm<sup>3</sup>
- Relative vapor density : No information available
- Particle characteristics : No information available
- Other : F.W. : 101.1      Oxidizing property: None

## 10. Stability and reactivity

Reactivity	: No information available
Chemical stability	: Stable when stored in sealed container (at room temperature).
Possibility of hazardous reactions	: No information available
Conditions to avoid	: Keep away from direct sunlight. Store in a cool, dark place.
Incompatible materials	: No information available
Hazardous decomposition products	: No information available

## 11. Toxicological information

Acute toxicity(oral)	No information available
Acute toxicity(dermal)	No information available
Acute toxicity(inhalation:gases)	No information available
Acute toxicity(inhalation:vapours)	No information available
Acute toxicity(inhalation:dusts and mists)	No information available
Skin corrosion/Skin irritation	No information available
Serious eye damage/Eye Irritation	No information available
Respiratory sensitizer	No information available
Skin sensitizer	No information available
Germ cell mutagenicity	No information available
Carcinogenicity	No information available
Toxic to reproduction/Effects on or via lactation	No information available
Specific target organ toxicity(single exposure)	No information available
Specific target organ toxicity(repeated exposure)	No information available
Aspiration hazard	No information available

## 12. Ecological information

Hazard to the aquatic environment (acute)	No information available
Hazard to the aquatic environment (chronic)	No information available
Hazardous to the ozone layer	No information available

- Ecotoxicity/ Fish toxicity  
No information available
- Ecotoxicity/ Invertebrate toxicity  
No information available
- Ecotoxicity/ Algal toxicity  
No information available
- Persistence and degradability  
No information available
- Bioaccumulative potential  
No information available
- Mobility in soil  
No information available

### 13. Disposal considerations

- Remained waste : Discard in accordance with the standards of the local government and relevant legislation.
- A polluted container and packing : When disposing of empty containers, empty containers are processed in accordance with the standards of the local government as well as the related laws and regulations and waste disposal method after contents are completely removed.

### 14. Transport information

- UN number : No information available
- Guideline Number : -
- Shipping name : No information available
- UN Class : No information available
- Packing group : No information available
- Subsidiary risk(s) : -
- MARINE POLLUTANT : Not applicable
- Transport in bulk according to MARPOL 73/78, Annex II, and the IBC code : Not applicable
- Special safety measures for transport or means of transport : Follow "7. Handling and storage"  
: Check no leak of container, handle without overturning, falling and damaging, then reliably prevent from cargo shift.
- Domestic regulations
  - Ground transport : Follow the transportation method specified in the Fire Service Law and the Industrial Safety and Health Law.
  - Marine transport : Follow the transportation method specified in the Ship Safety Law.
  - Air transport : Follow the transportation method specified in the Aviation Law.

### 15. Regulatory information

Follow relevant national and local regulations.

### 16. Other information

This " Safety Data Sheet(SDS)" is for provision of information, and it does not represent a guarantee the properties or safeties of the product.

Since not all materials and literature have been investigated, information may be omitted, and changes may occur in the content due to the discovery of new findings or corrections of previous theories.

The information contained herein is based on information in our possession, but we do not guarantee the completeness of the information.

It is subject to revision based on changes in laws and regulations and new findings.

When using this information for important decisions, we recommend that you carefully review the source of the information or verify it through testing.

Values of ingredients, content, physicochemical properties, etc., are not quality assurance values.

Prior to use, please investigate the laws and regulations of the organization, area and country where the product is to be used.

The information is intended to ordinary usage, in case of special handling, sufficient care should be taken.

Special Notes (displayed only if applicable)