

Material Safety Data Sheet

1. Product and company identification

Product name : Ruthenium(III) chloride n-hydrate
Name of manufacturer : KANTO CHEMICAL CO., INC.
Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, Japan
Name of section : Reagent division, catalog and products information section
Telephone number : +81-3-6214-1090
Facsimile number : +81-3-3241-1047
Mail address : BC32@gms.kanto.co.jp
MSDS No. : 36502

2. Summary of danger and Hazard

GHS classification

Physical and chemical hazard

Flammable solids : Out of category
Pyrophoric solids : Out of category
Self-heating substances and mixtures : Out of category

Human health hazard

Acute toxicity(oral) : Category 4

Pictogram or symbol



Signal word : Warning
Hazard statement : Harmful if swallowed

Cautions

Safety measurements : Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.
First-aid measures : If swallowed: Rinse mouth. Get medical treatment if you feel unwell.
Disposal : Dispose of contents and containers appropriately in accordance with related regulations.

3. Composition/Information on ingredients

Substance/Mixture : Substance
Chemical name or commercial name : Ruthenium(III) chloride n-hydrate
Synonyms : Ruthenium trichloride n-hydrate
Ingredients and composition : Ruthenium(III) chloride n-hydrate min. 80.0% (as anhydrous)
Chemical formula : $\text{RuCl}_3 \cdot n\text{H}_2\text{O}$
CAS No. : 14898-67-0
TSCA Inventory : Not registered



EINECS No. : -

4. First aid measures

- Inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.
- Skin contact : Wash the affected areas under running water.
- Eye contact : Wash the affected areas under running water for at least 15 minutes. Get medical treatment.
- Ingestion : Give the victim water or salt water and make him vomit. Get medical attention.

5. Fire fighting measures

- Extinguishing media : This product is noncombustible.
- Prohibited extinguishing media : None
- Particular fire fighting : Firefighters should wear proper protective equipment because toxic chlorine gas will emit upon combustion.
- The product is noncombustible. In case of surrounding fire, move containers from fire areas if it can be done without risk. If it cannot be done, apply water from a safe distance to cool and protect surrounding area.
- Protection for firefighters : Firefighters should wear protective equipment.

6. Accidental release measures

- Cautions for personnel : Wear proper equipment and avoid contact with skin and inhalation of dust. Keep away personnel except for authorized ones from spillage area by stretching ropes.
- Cautions for environment : Attention should be given not to cause damage to the environment by flowing of spillage to rivers. In case of the dilution of copious water, do not cause damage to the environment by untreated wastewater.
- Removal measure : Sweep up in a chemical waste container. Flush residual area with copious amounts of water.

7. Cautions of handling and storage

Handling

- Engineering measures : If necessary, wear proper protective equipment not to contact with skin or inhale the dust.
- Cautions for safety handling : Handle the chemical not to generate aerosol or dust.

Storage

- Adequate storage condition : As the chemical has deliquescent property, keep the bottle tightly closed and store at a cool place.
- Safety adequate container materials : Glass, polyethylene, polypropylene

8. Exposure control/Personal protection

- Engineering measures : Install a local ventilation system under dusty condition.
- Control parameters

ACGIH(2009) : Not established

Protective equipment

Respiration protective equipment : Dust mask

Hands protective equipment : Impervious protective gloves

Eyes protective equipment : Safety goggles

9. Physical and chemical properties

Appearance : Small solid or powder

Color : Black

Odor : Odorless

Boiling point : Decomposition

Melting point : Decomposition

Flash point : Noncombustible

Specific gravity : 3.1g/ml (20°C)

Solubility

Solubility in solvents : Water ; Soluble

10. Stability and reactivity

Stability : Stable under normal usage.

Reactivity : May react with oxidizing substances.

Incompatible conditions : Light, heat

Hazardous decomposition products : Chlorine, hydrogen chloride

11. Toxicological information

Acute toxicity : Harmful if swallowed(category 4)

Dermal : Not possible to classify because of insufficient data.

Inhalation(vapor) : Not possible to classify because of insufficient data.

Inhalation(dust, mist) : Not possible to classify because of insufficient data.

If inhaled the dust, nose, throat, or trachea are irritated.

rat oral LD50=1250mg/kg

mouse oral LD50=660mg/kg

mouse intraperitoneal LD50=108mg/kg

Skin corrosiveness : Not possible to classify because of insufficient data.

Irritation to skin, eyes : Not possible to classify because of insufficient data.

Respiratory sensitization or Skin sensitization : Respiratory sensitization : Not possible to classify because of insufficient data.

Skin sensitization : Not possible to classify because of insufficient data.

Mutagenicity : Not possible to classify because of insufficient data.



Carcinogenic effects : Not possible to classify because of insufficient data

Effects on the reproductive system

: Not possible to classify because of insufficient data.

Specific target organ systemic toxicity single exposure

: Not possible to classify because of insufficient data.

Specific target organ systemic toxicity repeated exposure

: Not possible to classify because of insufficient data.

Aspiration hazard

: Not possible to classify because of insufficient data.

12. Ecological information

Ecotoxicity

Fish toxicity

: Acute aquatic toxicity : Not possible to classify because of insufficient data.

Chronic aquatic toxicity : Not possible to classify because of insufficient data.

Rediualbility and degradability

: Not available

Ecorediualbility

: Not available

13. Disposal consideration

Residual disposal

: Bury in a landfill site approved for the disposal of chemical and hazardous wastes. Or entrust approved waste disposal companies with the disposal.

Containers

: In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

UN class

: Not applicable

15. Regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

References

Encyclopaedia Chemica, Kyoritsu Shuppan Co., Ltd. (1963)

Dangerous Properties of Industrial Materials, 6th ed. N. I. Sax Van Nostrand Reinhold Company (1984)

Handbook of 15710 Chemical Products, The Chemical Daily Co. (2010)

The information contained herein is based on several references and the present state of our knowledge. However the MSDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product.