Ruthenium(III) chloride: sc-253439



MATERIAL SAFETY DATA SHEET

The Power to Question

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Ruthenium(III) chloride

Product Number: sc-253439

Supplier: Santa Cruz Biotechnology, Inc.

> 2145 Delaware Avenue Santa Cruz, CA 95060

800.457.3801 or 831.457.3800

Emergency: ChemWatch

Within the US & Canada: 877-715-9305

Outside the US & Canada: +800 2436 2255 (1-800-CHEMCALL) or call +613 9573 3112

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Corrosive

GHS Classification

Skin corrosion (Category 1B) Serious eye damage (Category 1)

GHS Label elements, including precautionary statements

Pictogram



Signal word Danger

Hazard statement(s)

H314 Causes severe skin burns and eye damage.

Precautionary statement(s)

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact

lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/ physician. P310

HMIS Classification

Health hazard: 3 Flammability: 0 Physical hazards: 0

NFPA Rating

Health hazard: 3 Fire: 0 **Reactivity Hazard:**

Potential Health Effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous

membranes and upper respiratory tract.

Skin May be harmful if absorbed through skin. Causes skin burns.

Eves Causes eve burns.

Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: RuCl3 Molecular Weight: 207.43

CAS-No.	EC-No.	Index-No.	<u>Concentration</u>
Ruthenium trichloride			
10049-08-8	233-167-5	-	-

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions - hydrogen chloride gas, ruthenium oxide.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature. Hygroscopic.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form Melting point/freezing point	crystalline no data available	pH Boiling point	no data available no data available
Flash point	not applicable	Ignition temperature	no data available
Autoignition temperature	no data available	Lower explosion limit	no data available
Upper explosion limit	no data available	Vapor pressure	no data available
Density at 25 °C	3.11 g/mL	Water solubility	no data available
Relative vapor density	no data available	Odor	no data available
Odor Threshold	no data available	Evaporation rate	no data available
Partition coefficient	no data available		

n-octanol/water

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Materials to avoid

7inc

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions - hydrogen chloride gas, ruthenium oxide.

Other decomposition products

no data available

Thermal decomposition

> 360 °C

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50 no data available Inhalation LC50 no data available

Dermal LD50 no data available

Other information on acute toxicity LD50 Intraperitoneal - rat - 360 mg/kg

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as

probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a

carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a

known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a

carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential Health Effects

Inhalation May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous

membranes and upper respiratory tract.

Skin May be harmful if absorbed through skin. Causes skin burns.

Eyes Causes eye burns.

Ingestion May be harmful if swallowed.

Signs and Symptoms of Exposure

Cough, Shortness of breath, Headache, Nausea, Vomiting

Synergistic effects no data available Additional Information RTECS: VM2650000

12. ECOLOGICAL INFORMATION

Toxicity Persistence and degradability

no data available

Bioaccumulative potential
no data available

PBT and vPvB assessment
no data available

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 3260 Class: 8 Packing group: II

Proper shipping name: Corrosive solid, acidic, inorganic, n.o.s. (Ruthenium trichloride)

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG

UN number: 3260 Class: 8 Packing group: II EMS-No: F-A. S-B

Proper shipping name: CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (Ruthenium trichloride)

Marine pollutant: No

IATA

UN number: 3260 Class: 8 Packing group: II

Proper shipping name: Corrosive solid, acidic, inorganic, n.o.s. (Ruthenium trichloride)

15. REGULATORY INFORMATION

OSHA Hazards

Corrosive

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Ruthenium trichloride CAS-No. 10049-08-8

New Jersey Right To Know Components

Ruthenium trichloride CAS-No. 10049-08-8

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.

11/20/2013