

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (3N) 99.9% Ruthenium Sulfate Solution

**Product Code:** RU-SAT-03-SOL

**CAS Number:** 41860-99-5

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

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## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

no data available

GHS label elements, including precautionary statements

Pictogram(s) no data available

Signal word

no data available

Hazard statement(s)

no data available

Precautionary statement(s)

Prevention

no data available

Response

no data available

Storage

no data available

Disposal

no data available

Other hazards which do not result in classification

no data available

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name

RUTHENIUM SULFATE

Common names and synonyms

RUTHENIUM SULFATE

CAS number

41860-99-5

EC number

none

Concentration

100%

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## SECTION 4. FIRST AID MEASURES

Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

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

In case of skin contact

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.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms/effects, acute and delayed

no data available

Indication of immediate medical attention and special treatment needed, if necessary

no data available

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## SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

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

Specific hazards arising from the chemical

no data available

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas.

Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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## **SECTION 7. HANDLING AND STORAGE**

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

Appropriate engineering controls

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

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. 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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

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## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state liquid

Colour no data available

Odour no data available

Melting point/ freezing point no data available

Boiling point or initial boiling point and boiling range no data available

Flammability no data available

Lower and upper explosion limit / flammability limit no data available  
Flash point no data available  
Auto-ignition temperature no data available  
Decomposition temperature no data available  
pH no data available  
Kinematic viscosity no data available  
Solubility no data available  
Partition coefficient n-octanol/water (log value) no data available  
Vapour pressure no data available  
Density and/or relative density no data available  
Relative vapour density no data available  
Particle characteristics no data available

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## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity  
no data available  
Chemical stability  
Stable under recommended storage conditions.  
Possibility of hazardous reactions  
no data available  
Conditions to avoid  
no data available  
Incompatible materials  
no data available  
Hazardous decomposition products  
no data available

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Acute toxicity  
Oral: no data available  
Inhalation: no data available  
Dermal: no data available  
Skin corrosion/irritation  
no data available  
Serious eye damage/irritation  
no data available  
Respiratory or skin sensitization  
no data available  
Germ cell mutagenicity  
no data available  
Carcinogenicity  
no data available  
Reproductive toxicity  
no data available  
STOT-single exposure  
no data available  
STOT-repeated exposure  
no data available  
Aspiration hazard

no data available

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

Other adverse effects

no data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## **SECTION 14. TRANSPORT INFORMATION**

UN Number

ADR/RID: no data available IMDG: no data available IATA: no data available

14.2

UN Proper Shipping Name

ADR/RID: no data available

IMDG: no data available

IATA: no data available

Transport hazard class(es)

ADR/RID: no data available IMDG: no data available IATA: no data available

Packing group, if applicable

ADR/RID: no data available IMDG: no data available IATA: no data available

Environmental hazards

ADR/RID: no IMDG: no IATA: no

Special precautions for user

no data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

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## SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

Chemical name Common names and synonyms CAS number EC number

RUTHENIUM SULFATE RUTHENIUM SULFATE 41860-99-5 none

European Inventory of Existing Commercial Chemical Substances (EINECS) Not Listed.

EC Inventory Not Listed.

United States Toxic Substances Control Act (TSCA) Inventory Not Listed.

China Catalog of Hazardous chemicals 2015 Not Listed.

New Zealand Inventory of Chemicals (NZIoC) Not Listed.

Philippines Inventory of Chemicals and Chemical Substances (PICCS) Not Listed.

Vietnam National Chemical Inventory Not Listed.

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) Not Listed.

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## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.