SAFETY DATA SHEET

Date Accessed: 03/28/2024
Date Revised: 01/15/2022

SECTION 1. IDENTIFICATION

Product Name: Ruthenium(VIII) Oxide

Product Number: All applicable American Elements product codes, e.g. RU8-OX-O2-LIQ , RU8-OX-O3-LIQ , RU8-OX-O4-LIQ , RU8-OX-O5-LIQ , RU8-OX-01-LIQ

CAS #: 20427-56-9

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
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Emergency telephone number:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture
GHS03 Flame over circle
Ox. Liq. 2 H272 May intensify fire; oxidizer.
GHS label elements
The substance is classified and labeled according to the Globally Harmonized System (GHS).



Hazard pictograms
GHS03
Signal word Danger
Hazard statements
H272 May intensify fire; oxidizer.
Precautionary statements
P231 Handle under inert gas.
P235 Keep cool.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present
and easy to do. Continue rinsing.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P422 Store contents under inert gas.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
Classification system:
NFPA ratings (scale 0 - 4)
0
3
0
OX
Health = 0
Fire = 3
Reactivity = 0
The substance possesses oxidizing properties.
HMIS-ratings (scale 0 - 4)
HEALTH
FIRE
REACTIVITY
0
3
0
Health = 0
Fire = 3
Reactivity = 0
Other hazards
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
CAS # / Substance Name
20427-56-9 Ruthenium(VIII) oxide (0.5% stabilized aqueous solution)

SECTION 4. FIRST AID MEASURES

Description of first aid measures
If inhaled: Supply fresh air; consult doctor in case of complaints.
In case of skin contact: Immediately rinse with water.
In case of eye contact: Rinse opened eye for several minutes under running water. Consult a physician.
If swallowed: If symptoms persist consult doctor.
Information for doctor:
Most important symptoms and effects, both acute and delayed:
No data available
Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture No data available
Advice for firefighters
Protective equipment: No special measures required.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Not required.
Environmental precautions: Do not allow to enter sewers/ surface or groundwater.
Methods and materials for containment and cleanup:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

Handling: Handle under inert gas.
Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
Information about protection against explosions and fires: No special measures required.
Conditions for safe storage, including any incompatibilities:
Keep cool.
Store contents under inert gas.
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: None.
Recommended storage temperature: Store at temperatures not exceeding 4 °C.
Specific end use(s) No data available

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems: No further data; see item 7.
Control parameters
Components with limit values that require monitoring at the workplace: Not required.
Additional information: The lists that were valid during the creation were used as basis.
Exposure controls
Personal protective equipment:
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.

Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use
respiratory protective device that is independent of circulating air.
Use suitable respiratory protective device in case of insufficient ventilation.
Protection of hands:
SProtective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the
chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and
varies from manufacturer to manufacturer.
Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be
observed.
Eye protection: Goggles recommended during refilling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance:
Form: Liquid
Color: Yellow
Odor: Acrid
Odor threshold: No data available.
pH: No data available.
Melting point/Melting range: no data °C
Boiling point/Boiling range: 100 °C (212 °F)
Flash point: N/A
Flammability (solid, gas): N/A
Ignition temperature:
Decomposition temperature: No data available.
Autoignition: No data available.
Danger of explosion: Product does not present an explosion hazard.
Explosion limits:
Lower: No data available.
Upper: No data available.
Vapor pressure: no data hPa
Density: No data available.
Relative density No data available.
Vapor density No data available.
Evaporation rate No data available.
Solubility in / Miscibility with
Water: Not miscible or difficult to mix.
Partition coefficient (n-octanol/water): No data available.
Viscosity:

Dynamic: No data available.
Kinematic: No data available.
Solvent content:
Organic solvents: 0.0 %
VOC content: 0.0 g/l / 0.00 lb/gl
Other information No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity No data available
Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
Possibility of hazardous reactions No dangerous reactions known.
Conditions to avoid No data available
Incompatible materials: No data available
Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
Primary irritant effect:
on the skin: No irritant effect.
on the eye: No irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
Carcinogenic categories
IARC (International Agency for Research on Cancer)
Substance is not listed.
NTP (National Toxicology Program)
Substance is not listed.
OSHA-Ca (Occupational Safety & Health Administration)
Substance is not listed.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity: No data available
Persistence and degradability No data available
Behavior in environmental systems:
Bioaccumulative potential No data available
Mobility in soil No data available
Additional ecological information:
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach groundwater, water courses, or sewage systems.
Results of PBT and vPvB assessment
PBT: N/A
vPvB: N/A

Other adverse effects No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation:
Must not be disposed of together with household garbage. Do not allow product to enter drains, sewage systems, or other water courses system.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

UN-Number
DOT, IATA UN3139
UN proper shipping name
DOT, IATA Oxidizing liquid, n.o.s.
Transport hazard class(es)
DOT
Class 5.1 Oxidizing substances
Label 5.1
IATA
Class 5.1 Oxidizing substances
Label 5.1
Packing group
DOT, IATA II
Environmental hazards:
Marine pollutant: No
Special precautions for user N/A
Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code N/A
Transport/Additional information:
DOT
Quantity limitations On passenger aircraft/rail: 1 L
On cargo aircraft only: 5 L
UN "Model Regulation": UN 3139 OXIDIZING LIQUID, N.O.S., 5.1, II

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
Sara
Section 355 (extremely hazardous substances):
Substance is not listed.
Section 313 (Specific toxic chemical listings):
Substance is not listed.
TSCA (Toxic Substances Control Act):
Substance is not listed.
Proposition 65
Chemicals known to cause cancer:
Substance is not listed.

Chemicals known to cause reproductive toxicity for females:
Substance is not listed.
Chemicals known to cause reproductive toxicity for males:
Substance is not listed.
Chemicals known to cause developmental toxicity:
Substance is not listed.
Carcinogenic categories
EPA (Environmental Protection Agency)
Substance is not listed.
TLV (Threshold Limit Value established by ACGIH)
Substance is not listed.
NIOSH-Ca (National Institute for Occupational Safety and Health)
Substance is not listed.
GHS label elements
The substance is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms
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Signal word Danger
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P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P422 Store contents under inert gas.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
National regulations:
Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 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.