

<a href="#">Ruthenium Acetylacetonate</a>	<a href="#">Pricing &gt;</a>
<a href="#">Ruthenium(III) 2,4-pentanedionate</a>	<a href="#">Pricing &gt;</a>

Linear Formula	Ru(CH <sub>3</sub> COCHCOCH <sub>3</sub> ) <sub>3</sub>
Pubchem CID	421900
MDL Number	MFCD00000030
EC No.	238-193-0
IUPAC Name	N/A
Beilstein/Reaxys No.	N/A
SMILES	[Ru+3].O=C(/C=C([O-])C)C.[O-]C(=C/C(=O)C)C.[O-]C(=C/C(=O)C)C
Inchl Identifier	InChI=1S/3C5H8O2.Ru/c3*1-4(6)3-5(2)7;/h3*3,6H,1-2H3/q;;;+3/p-3/b3*4-3-;
Inchl Key	RTZYCRSRNSTRGC-LNTINUHCSA-K

Signal Word	Warning
Hazard Statements	H315-H319-H335
Hazard Codes	Xi
Risk Codes	36/37/38
Safety Statements	26-36
RTECS Number	N/A
Transport Information	N/A
WGK Germany	3

[Create Printable PDF](#)

## SAFETY DATA SHEET

Date Accessed: 04/20/2024

Date Revised: 01/15/2022

### SECTION 1. IDENTIFICATION

**Product Identifiers:** All applicable American Elements product codes for CAS #14284-93-6

**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:

## SECTION 2. HAZARDS IDENTIFICATION

Hazard(s) identification

Classification of the substance or mixture in  
accordance with 29 CFR 1910 (OSHA HCS)  
GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

Hazards not otherwise classified No data available

GHS label elements, including precautionary  
statements



Hazard pictograms

GHS07

Signal word Warning

Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statements

P261 Avoid breathing

dust/fume/gas/mist/vapors/spray.

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.

P304+P340 IF INHALED: Remove person to fresh air  
and keep comfortable for breathing.

P405 Store locked up.

P501 Dispose of contents/container in accordance  
with local/regional/national/international regulations.

WHMIS classification

D2B - Toxic material causing other toxic effects

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH

FIRE

REACTIVITY

1

1

1

Health (acute effects) = 1

Flammability = 1

Physical Hazard = 1

Other hazards  
Results of PBT and vPvB assessment  
PBT: N/A  
vPvB: N/A

---

### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances  
CAS No. / Substance Name:  
14284-93-6 Ruthenium(III) 2,4-pentanedionate  
Identification number(s):  
EC number: 238-193-0

---

### **SECTION 4. FIRST AID MEASURES**

Description of first aid measures  
If inhaled:  
Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.  
Seek immediate medical advice.  
In case of skin contact:  
Immediately wash with soap and water; rinse thoroughly.  
Seek immediate medical advice.  
In case of eye contact:  
Rinse opened eye for several minutes under running water. Consult a physician.  
If swallowed:  
Seek medical treatment.  
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 Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.  
Special hazards arising from the substance or mixture  
If this product is involved in a fire, the following can be released:  
Carbon monoxide and carbon dioxide  
Metal oxide fume  
Advice for firefighters

Protective equipment:  
Wear self-contained respirator.  
Wear fully protective impervious suit.

---

## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures  
Use personal protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Environmental precautions: Do not allow material to be released to the environment without official permits.  
Methods and materials for containment and cleanup:  
Ensure adequate ventilation.  
Prevention of secondary hazards: No special measures required.  
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  
Precautions for safe handling  
Keep container tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation at the workplace.  
Information about protection against explosions and fires: No data available  
Conditions for safe storage, including any incompatibilities  
Requirements to be met by storerooms and receptacles: No special requirements.  
Information about storage in one common storage facility: Store away from oxidizing agents.  
Further information about storage conditions:  
Keep container tightly sealed.  
Store in cool, dry conditions in well-sealed containers.  
Specific end use(s) No data available

---

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

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

None.

Additional information: No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

Breathing equipment: Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Inspect gloves prior to use.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Penetration time of glove material (in minutes) No data available

Eye protection: Safety glasses

Body protection: Protective work clothing.

---

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

Information on basic physical and chemical properties

Appearance:

Form: Crystalline

Color: Red

Odor: No data available

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 260 °C (500 °F) (dec)

Boiling point/Boiling range: No data available

Sublimation temperature / start: No data available

Flammability (solid, gas) No data available.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: No data available.

Danger of explosion: No data available.

Explosion limits:

Lower: No data available

Upper: No data available

Vapor pressure: N/A  
Density: No data available  
Relative density: No data available.  
Vapor density: N/A  
Evaporation rate: N/A  
Solubility in / Miscibility with  
Water: Partly soluble  
Partition coefficient (n-octanol/water): No data available.  
Viscosity:  
Dynamic: N/A  
Kinematic: N/A  
Other information: No data available

---

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

Reactivity: No data available  
Chemical stability: Stable under recommended storage conditions.  
Thermal decomposition / conditions to be avoided:  
Decomposition will not occur if used and stored according to specifications.  
Possibility of hazardous reactions: Reacts with strong oxidizing agents  
Conditions to avoid: No data available  
Incompatible materials: Oxidizing agents  
Hazardous decomposition products:  
Carbon monoxide and carbon dioxide  
Metal oxide fume

---

## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects  
Acute toxicity: No effects known.  
LD/LC50 values that are relevant for classification: No data  
Skin irritation or corrosion: Causes skin irritation.  
Eye irritation or corrosion: Causes serious eye irritation.  
Sensitization: No sensitizing effects known.  
Germ cell mutagenicity: No effects known.  
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.  
Reproductive toxicity: No effects known.  
Specific target organ system toxicity - repeated exposure: No effects known.  
Specific target organ system toxicity - single exposure: May cause respiratory irritation.  
Aspiration hazard: No effects known.

Subacute to chronic toxicity: No effects known.  
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

---

## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity

Aquatic toxicity: No data available

Persistence and degradability No data available

Bioaccumulative potential No data available

Mobility in soil No data available

Additional ecological information:

Do not allow material to be released to the environment without official permits.

Avoid transfer into the environment.

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 Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

---

## **SECTION 14. TRANSPORT INFORMATION**

UN-Number

DOT, ADN, IMDG, IATA N/A

UN proper shipping name

DOT, ADN, IMDG, IATA N/A

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class N/A

Packing group

DOT, IMDG, IATA N/A

Environmental hazards: N/A

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

Marine Pollutant (DOT): No

## **SECTION 15. REGULATORY INFORMATION**

Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS label elements, including precautionary statements

Hazard pictograms

GHS07

Signal word Warning

Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statements

P261 Avoid breathing

dust/fume/gas/mist/vapors/spray.

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.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.



Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

---

## **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.