

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Name:** Tris(2,2,6,6-tetramethyl-3,5-heptanedionato)ruthenium(III)

**Product Number:** All applicable American Elements product codes, e.g. RU-TMHD3-02-C , RU-TMHD3-03-C , RU-TMHD3-04-C

**CAS #:** 38625-54-6

**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:**

Domestic, North America: +1 800-424-9300  
International: +1 703-527-3887

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## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

The substance is not classified according to the Globally Harmonized System (GHS).

GHS label elements not applicable

Hazard pictograms not applicable

Signal word not applicable

Hazard statements not applicable

Precautionary statements

P262 Do not get in eyes, on skin, or on clothing.

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.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

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

Classification system:

NFPA ratings (scale 0 - 4)

0

0  
0  
Health = 0  
Fire = 0  
Reactivity = 0  
HMIS-ratings (scale 0 - 4)  
HEALTH  
FIRE  
REACTIVITY  
0  
0  
0  
Health = 0  
Fire = 0  
Reactivity = 0  
Other hazards  
Results of PBT and vPvB assessment  
PBT: N/A  
vPvB: N/A

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances  
CAS # / Substance Name  
38625-54-6 Tris(2,2,6,6-tetramethyl-3,5-heptanedionato)ruthenium(III),  
99% (99.9%-Ru) [Ru(TMHD)3]

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### SECTION 4. FIRST AID MEASURES

Description of first aid measures  
General information: No special measures required.  
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

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### SECTION 5. FIREFIGHTING MEASURES

Extinguishing media  
Suitable extinguishing agents:  
CO<sub>2</sub>, 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.

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

Personal precautions, protective equipment and emergency procedures Not required.

Environmental precautions: No special measures required.

Methods and materials for containment and cleanup:

Dispose contaminated material as waste according to item 13.

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.

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

Handling:

Precautions for safe handling No special measures required.

Information about protection against explosions and fires: No special measures required.

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: Not required.

Further information about storage conditions: None.

Specific end use(s) No data available

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## **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:

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment: Not required.

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: Safety glasses

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Powder

Color: Orange

Odor: Odorless

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 210-213 °C (410-415 °F)

Boiling point/Boiling range: dec.250 subl.12 °C (dec.482 subl.54 °F)

Flash point: N/A

Flammability (solid, gas): Product is not flammable.

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: subl. 12 hPa (subl. 9 mm Hg)

Density: No data available.

Relative density No data available.

Vapor density N/A

Evaporation rate N/A

Solubility in / Miscibility with

Water: Insoluble.

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: N/A

Kinematic: N/A

Solvent content:

Organic solvents: 0.0 %

VOC content: 0.0 g/l / 0.00 lb/gl

Solids content: 100.0 %

Other information No data available

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## 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.

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## 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:

When used and handled according to specifications, the product does not have any harmful effects according to

our experience and the information provided to us.

The substance is not subject to classification.

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.

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## 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: Not known to be hazardous to water.

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

Other adverse effects No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation: Disposal must be made according to official regulations.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

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## SECTION 14. TRANSPORT INFORMATION

UN-Number

DOT, ADN, IMDG, IATA not regulated

UN proper shipping name

DOT, ADN, IMDG, IATA not regulated

Transport hazard class(es)  
DOT, ADN, IMDG, IATA  
Class not regulated  
Packing group  
DOT, IMDG, IATA not regulated  
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  
UN "Model Regulation": not regulated

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## 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 not applicable

Hazard pictograms not applicable

Signal word not applicable

Hazard statements not applicable

Precautionary statements

P262 Do not get in eyes, on skin, or on clothing.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

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

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

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## **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 1997-2018 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.