



TCI AMERICA

SAFETY DATA SHEET

Revision number: 1
Revision date: 07/06/2018

1. IDENTIFICATION

Product name: Tris(triphenylphosphine)ruthenium(II) Dichloride
Product code: D1997

Product use: For laboratory research purposes.
Restrictions on use: Not for drug or household use.

Company:
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TCI America (8:00am - 5:00pm) PST
+1-503-286-7624
Transportation Emergencies:
Chemtrec 24-Hour
+1-800-424-9300 (U.S.A.)
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Responsible department:
TCI America
Environmental Health Safety and Security
+1- 503-286-7624

2. HAZARD(S) IDENTIFICATION

OSHA Haz Com: CFR 1910.1200: Acute Toxicity - Oral [Category 4]
WHMIS 2015: Acute Toxicity - Dermal [Category 4]
Acute Toxicity - Inhalation [Category 4]

Signal word: Warning!

Hazard Statement(s): Harmful if swallowed, in contact with skin or if inhaled

Pictogram(s) or Symbol(s):



Precautionary Statement(s):
[Prevention]

Avoid breathing dust, fume, mist, vapors or spray. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling. Wear protective gloves, protective clothing.

[Response]

If swallowed: Call a poison center or doctor if you feel unwell. Rinse mouth. If on skin: Wash with plenty of soap and water. Call a poison center or doctor if you feel unwell. Take off contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.

[Disposal]

Dispose of contents and container in accordance with local, regional, national regulations (e.g. US: 40 CFR Part 261, EU:91/156/EEC, JP: Waste Disposal and Cleaning Act, etc.).

Hazards not otherwise classified: None.
[HNOC]

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture: Substance
Components: Tris(triphenylphosphine)ruthenium(II) Dichloride
Percent: >90.0%(T)
CAS RN: 15529-49-4
Molecular Weight: 958.85
Chemical Formula: C₅₄H₄₅Cl₂P₃Ru
Synonyms: Dichlorotris(triphenylphosphine)ruthenium(II)

4. FIRST-AID MEASURES

Description of first aid measures

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact:	Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention.
Eye contact:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Ingestion:	Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Symptoms/effects:

Acute:	No data available
Delayed:	No data available

Indication of any immediate medical attention:

Not available.

Notes to physician:

No data available

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:	Dry chemical, foam, water spray, carbon dioxide.
Specific hazards arising from the chemical:	Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume.
Hazardous combustion products:	These products include: Carbon oxides Halogenated compounds Phosphates Metallic oxides
Other specific hazards:	WARNING: Highly toxic HCl gas is produced during combustion.
Advice for firefighters:	Wear self-contained breathing apparatus if possible.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Keep people away from and upwind of spill/leak. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.
Environmental precautions:	Prevent product from entering drains.
Methods and materials for containment and cleaning up:	Sweep dust to collect it into an airtight container, taking care not to disperse it. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

7. HANDLING AND STORAGE

Precautions for safe handling:	Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent dispersion of dust. Wash hands and face thoroughly after handling. Use a local exhaust if dust or aerosol will be generated. Avoid contact with skin, eyes and clothing.
Conditions for safe storage, including any incompatibilities	
Storage conditions:	Keep container tightly closed. Store in a cool and dark place. Store under inert gas. Store away from incompatible materials such as oxidizing agents. Air-sensitive
Packaging material:	Comply with laws.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Appropriate engineering controls:	Follow safe industrial engineering/laboratory practices when handling any chemical. Install a closed system or local exhaust as possible so that workers should not be exposed directly. Also install safety shower and eye bath.
Personal protective equipment	
Respiratory protection:	Dust respirator. Follow local and national regulations.
Hand protection:	Protective gloves.
Eye protection:	Safety glasses. A face-shield, if the situation requires.
Skin and body protection:	Protective clothing. Protective boots, if the situation requires.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C):	Solid		
Form:	Crystal - Powder		
Colour:	Deep green - Black		
Odour:	No data available		
Odor threshold:	No data available		
Odour threshold:	No data available		
Melting point/freezing point:	No data available	pH:	No data available
Boiling point/range:	No data available	Vapour pressure:	No data available.
Decomposition temperature:	No data available	Vapour density:	No data available
Relative density:	No data available	Dynamic Viscosity:	No data available
Kinematic viscosity:	No data available		
Log Pow:	No data available	Evaporation rate(Butyl Acetate=1):	No data available
Flash point:	No data available	Autoignition temperature:	No data available
Flammability(solid, gas):	No data available	Flammability or explosive limits:	
		Lower:	No data available
		Upper:	No data available
Solubility(ies):			
[Water]	No data available		
[Other solvents]	No data available		

10. STABILITY AND REACTIVITY

Reactivity:	No data available
Chemical stability:	Stable under proper conditions.
Possibility of hazardous reactions:	No special reactivity has been reported.
Incompatible materials:	Oxidizing agents
Hazardous decomposition products:	Carbon dioxide, Carbon monoxide, Hydrogen chloride, Phosphorus oxides

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:
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

IARC: No data available

NTP: No data available

OSHA: No data available

Reproductive toxicity:
No data available

Target organ(s): No data available

12. ECOLOGICAL INFORMATION**Ecotoxicity:**

Fish:	No data available
Crustacea:	No data available
Algae:	No data available

Persistence / degradability: No data available**Bioaccumulative potential(BCF):** No data available**Mobility in soil****Log Pow:** No data available**Soil adsorption (Koc):** No data available**Henry's Law (PaM³/mol):** No data available**13. DISPOSAL CONSIDERATIONS**

Disposal of product: Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.

Disposal of container: Dispose of as unused product. Do not re-use empty containers.

Other considerations: Observe all federal, state and local regulations when disposing of the substance.

14. TRANSPORT INFORMATION

DOT (US) Non-hazardous for transportation.

IATA Non-hazardous for transportation.

IMDG Non-hazardous for transportation.

15. REGULATORY INFORMATION**Toxic Substance Control Act (TSCA 8b.):**

This product is NOT on the EPA Toxic Substances Control Act (TSCA) inventory. The following notices are required by 40 CFR 720.36 (C) for those products not on the inventory list:

(i) These products are supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in 40 CFR 720.0 et sec.

(ii) The health risks of these products have not been fully determined. Any information that is or becomes available will be supplied on a SDS sheet.

US Federal Regulations**CERCLA Hazardous substance and Reportable Quantity:**

SARA 313: Not Listed

SARA 302: Not Listed

State Regulations**State Right-to-Know**

Massachusetts Not Listed

New Jersey Not Listed

Pennsylvania Not Listed

California Proposition 65: Not Listed

Other Information**NFPA Rating:**

Health: 2
Flammability: 0
Instability: 0

HMIS Classification:

Health: 2
Flammability: 0
Physical: 0

International Inventories

EC-No: 239-569-7

16. OTHER INFORMATION

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TCI chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.