

**Safety Data Sheet**  
**acc. to OSHA HCS**

Issued date 01/29/2024

Reviewed on 01/29/2024

**1 Identification**

- **Product identifier**
- **Trade name:** Benzylidenebis(tricyclohexylphosphine)dichlororuthenium

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- **Product Code:** 8151
- **CAS Number:**  
172222-30-9
- **Application of the substance / the mixture** Laboratory synthesis/Raw material
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Colonial Metals, Inc.  
505 Blue Ball Road  
Elkton, MD 21922
- **Department:** Product safety department
- **Emergency telephone number:**  
Fax: +1 (410)-398-2918  
During normal operating times: +1 (410)-398-7200  
Chemtrec: 1-800-424-9300  
World wide - Call COLLECT to U.S.: +1 (703)-527-3887

**2 Hazard(s) identification**

- **Classification of the substance or mixture**  
Eye Irritation 2B H320 Causes eye irritation.  
Specific Target Organ Toxicity - Single Exposure 3 H335 May cause respiratory irritation.

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- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard statements**  
H320 Causes eye irritation.  
H335 May cause respiratory irritation.
- **Precautionary statements**  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
P264+P265 Wash thoroughly after handling. Do not touch eyes.  
P271 Use only outdoors or in a well-ventilated area.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
  
P312 Call a poison center/doctor if you feel unwell.  
P337+P317 If eye irritation persists: Get medical help.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

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(Contd. of page 1)

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**3 Composition/information on ingredients**

- **Chemical characterization: Substances**
- **CAS No. Description**  
172222-30-9 Benzylidenebis(tricyclohexylphosphine)dichlororuthenium

**4 First-aid measures**

- **Description of first aid measures**
- **After inhalation:** Move to fresh air. Seek medical attention if symptoms occur.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for 15 minutes under running water. Seek medical attention.
- **After swallowing:** Seek medical treatment.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**5 Fire-fighting measures**

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained breathing apparatus for firefighting when necessary.

**6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Do not allow to enter sewers, surface or ground water.
- **Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to section 13.  
Ensure adequate ventilation.

(Contd. on page 3)

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(Contd. of page 2)

- **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.
- **Protective Action Criteria for Chemicals**

· <b>PAC-1:</b>
Substance is not listed.

· <b>PAC-2:</b>
Substance is not listed.

· <b>PAC-3:</b>
Substance is not listed.

**7 Handling and storage**

- **Handling:**
- **Precautions for safe handling**  
 Do not handle until all safety precautions have been read and understood. Wear personal protective equipment (see section 8). Keep respiratory protective device available. Ensure adequate ventilation. Avoid contact with eyes, skin, clothing, shoes. Remove any contaminated clothing/shoes and wash prior to re-use. Wash hands thoroughly after handling. Avoid prolonged exposure, breathing in dust, fumes, gas, mist and/or vapors.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:**  
 Store away from heat and combustible/oxidizing materials in a segregated and approved area. Do not store in an unlabelled container. See section 10 for incompatible materials.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

- **Additional information about design of technical systems:**  
 Use only with adequate ventilation; use process enclosures, closed ventilation system (laboratory fume hood), local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.  
 Follow safe industrial engineering/laboratory practices when handling any chemical. Verify a closed system or local exhaust is utilized in work area to keep worker exposure to airborne contaminants below any recommended or statutory limits. Safety shower and eye wash station in close proximity of work area.
- **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.  
 Immediately remove all soiled and contaminated clothing.  
 Wash hands before breaks and at the end of work.

(Contd. on page 4)

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(Contd. of page 3)

- Avoid contact with the eyes.
- Avoid contact with the eyes and skin.
- **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.
- **Protection of hands:**  
The glove material must 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:** Approved safety glasses with side shields or tightly sealed goggles or face shield.
- **Body protection:**  
Clean protective work clothing/apron which covers skin and prevents exposures.  
Choose body protective equipment according to the concentration and amount of dangerous substances, and to the specific work-place.
- **Limitation and supervision of exposure into the environment** Do not allow product to enter drains or water sources.

**9 Physical and chemical properties**

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

- **Form:** Solid/Powder
- **Color:** Purple
- **Odor:** None
- **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

- **Melting point/Melting range:** Undetermined.
- **Boiling point/Boiling range:** Undetermined.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Decomposition temperature:** Not determined.

· **Ignition temperature:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

- **Lower:** Not determined.
- **Upper:** Not determined.

· **Vapor pressure:** Not applicable.

· **Density:** Not determined.

(Contd. on page 5)

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(Contd. of page 4)

· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not applicable.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with Water:</b>	Soluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
<b>VOC content:</b>	0.00 %
<b>Solids content:</b>	100.0 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Possibility of Hazardous Reactions; Safety Issues** No dangerous reactions known.
- **Conditions to avoid (e.g., static discharge, impact, electrical sparks or vibration):**  
No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products (produced with use, storage or heating):**  
No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No known sensitization effects.
- **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.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.

(Contd. on page 6)

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(Contd. of page 5)

- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
 Water hazard class 3 (Self-assessment): extremely hazardous for water  
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
 Danger to drinking water if even extremely small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

- **Waste treatment methods**
- **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

· <b>UN-Number</b>	
· <b>DOT, IMDG, IATA</b>	not regulated
· <b>UN proper shipping name</b>	
· <b>DOT, IMDG, IATA</b>	not regulated
· <b>Transport hazard class(es)</b>	
· <b>DOT, ADN, IMDG, IATA</b>	
· <b>Class</b>	not regulated
· <b>Packing group</b>	
· <b>DOT, IMDG, IATA</b>	not regulated
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b>	Not applicable.
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
· <b>UN "Model Regulation":</b>	not regulated

**15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
 No further relevant information available.

(Contd. on page 7)

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(Contd. of page 6)

· **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.

· **Hazardous Air Pollutants**

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.

· **New Jersey Right-to-Know List:**

Substance is not listed.

· **Pennsylvania Right-to-Know List:**

Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **TLV (Threshold Limit Value)**

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**



GHS07

· **Signal word** Warning

· **Hazard statements**

H320 Causes eye irritation.

H335 May cause respiratory irritation.

· **Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P264+P265 Wash thoroughly after handling. Do not touch eyes.

(Contd. on page 8)

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(Contd. of page 7)

- P271 Use only outdoors or in a well-ventilated area.
  - P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P312 Call a poison center/doctor if you feel unwell.
  - P337+P317 If eye irritation persists: Get medical help.
  - P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

**16 Other information**

**Disclaimer:** In compliance with the OSHA Hazard communication Standard, 29 C.F.R 1910.1200, we are providing you with a Safety Data Sheet (SDS) for the hazardous material you are purchasing.

It is your responsibility to educate your employees on the safe use of the hazardous material. With this in mind, a copy should be forwarded to the supervisor of the user or to the user themselves, and copy should be retained in your files for future reference.

Our company makes no presentation as to the accuracy of the information in the SDS. The information is believe to be correct; however, you (the customer), should perform your own investigation and independent verification. If you resell the product, you are responsible to forward the information in the SDS to your customer.

- **Department issuing SDS:** EHS Department of Colonial Metals, Inc.
- **Contact:** EHS Dept at +1 (410)-398-7200
- **Date of preparation / last revision** 01/29/2024
- **Abbreviations and acronyms:**
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - VOC: Volatile Organic Compounds (USA, EU)
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Eye Irritation 2B: Serious eye damage/eye irritation – Category 2B
  - Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3
- Data compared to the previous version altered.