



### SECTION 1: Product Identification

|                      |   |
|----------------------|---|
| Chemical Name:       | Dichlorotris(triphenylphosphine)ruthenium (II), 99% |
| Product Number:      | 403   |
| CAS Registry Number: | 15529-49-4  |
| Formula:             | $\text{RuCl}_2(\text{P}(\text{C}_6\text{H}_5)_3)_3$ |
| EINECS Number:       | 239-569-7   |
| Chemical Family:     | metal-phosphine complexes                           |
| Synonym:             | Tris(triphenylphosphine)dichlororuthenium (II)      |

### SECTION 2: Composition and Information on Ingredients

| Ingredient     | CAS Number | Percent | ACGIH (TWA) | OSHA (PEL) |
|----------------|------------|---------|-------------|------------|
| Title Compound | 15529-49-4 | 100     | no data     | no data    |

### SECTION 3: Hazards Identification

|                             |   |
|-----------------------------|---|
| Emergency Overview:         | No particular hazard associated with this material.                   |
| Primary Routes of Exposure: | Ingestion   |
| Eye Contact:                | May cause slight to mild irritation of the eyes                       |
| Skin Contact:               | May cause slight to mild irritation of the skin.                      |
| Inhalation:                 | May be irritating to the nose, mucous membranes and respiratory tract |
| Ingestion:                  | No information on the physiological effects of ingestion.             |
| Acute Health Effects:       | May be irritating to skin, eyes and respiratory tract.                |
| Chronic Health Effects:     | No information available on long-term chronic effects.                |
| NTP:                        | No  |
| IARC:                       | No  |
| OSHA:                       | No  |

### SECTION 4: First Aid Measures



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| Eye Exposure:                                    | Immediately flush the eyes with copious amounts of water for at least 10-15 minutes. A victim may need assistance in keeping their eye lids open. Get immediate medical attention.                           |
| Skin Exposure:                                   | Wash the affected area with water. Remove contaminated clothes if necessary. Seek medical assistance if irritation persists.   |
| Inhalation:                                      | Remove the victim to fresh air. Closely monitor the victim for signs of respiratory problems, such as difficulty in breathing, coughing, wheezing, or pain. In such cases seek immediate medical assistance. |
| Ingestion:                                       | Seek medical attention immediately. Keep the victim calm. Give the victim water (only if conscious). Induce vomiting only if directed by medical personnel.  |
| <b>SECTION 5: Fire Fighting Measures</b>         |  |
| Flash Point:                                     | not applicable   |
| Autoignition Temperature:                        | none   |
| Explosion Limits:                                | none   |
| Extinguishing Medium:                            | carbon dioxide, foam or dry powder   |
| Special Fire Fighting Procedures:                | If this product is involved in a fire, fire fighters should be equipped with a NIOSH approved positive pressure self-contained breathing apparatus and full protective clothing.                             |
| Hazardous Combustion and Decomposition Products: | If involved in a fire this material may emit irritating fumes.   |
| Unusual Fire or Explosion Hazards:               | No unusual fire or explosion hazards.  |
| <b>SECTION 6: Accidental Release Measures</b>    |  |
| Spill and Leak Procedures:                       | Small spills can be mixed with vermiculite or sodium carbonate and swept up.   |
| <b>SECTION 7: Handling and Storage</b>           |  |
| Handling and Storage:                            | Store in a tightly sealed container. Keep away from heat and direct sunlight.  |



## SECTION 8: Exposure Controls and Personal Protection

|                        |   |
|------------------------|---|
| Eye Protection:        | Always wear approved safety glasses when handling a chemical substance in the laboratory.   |
| Skin Protection:       | Wear protective clothing and gloves.  |
| Ventilation:           | If possible, handle the material in an efficient fume hood.   |
| Respirator:            | If ventilation is not available a respirator should be worn. The use of respirators requires a Respiratory Protection Program to be in compliance with 29 CFR 1910.134. |
| Additional Protection: | No additional protection required.  |

## SECTION 9: Physical and Chemical Properties

|                      |            |
|----------------------|------------|
| Color and Form:      | black xtl. |
| Molecular Weight:    | 958.85     |
| Melting Point:       | no data    |
| Boiling Point:       | no data    |
| Vapor Pressure:      | no data    |
| Specific Gravity:    | no data    |
| Odor:                | none       |
| Solubility in Water: | insoluble  |

## SECTION 10: Stability and Reactivity

|                           |   |
|---------------------------|---|
| Stability:                | air sensitive   |
| Hazardous Polymerization: | no hazardous polymerization   |
| Conditions to Avoid:      | prolonged contact with air.   |
| Incompatibility:          | strong oxidizing agents   |
| Decomposition Products:   | carbon dioxide, carbon monoxide, organic fumes, hydrogen chloride, ruthenium compounds. |

## SECTION 11: Toxicological Information

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| RTECS Data: | No information available in the RTECS files. |
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| Carcinogenic Effects:                      | No data available   |
| Mutagenic Effects:                         | No data available   |
| Teratogenic Effects:                       | No data available   |
| <b>SECTION 12: Ecological Information</b>  |   |
| Ecological Information:                    | No information available                                      |
| <b>SECTION 13: Disposal Considerations</b> |   |
| Disposal:                                  | Dispose of according to local, state and federal regulations. |
| <b>SECTION 14: Transportation</b>          |   |
| Shipping Name (CFR):                       | Non-hazardous   |
| Hazard Class (CFR):                        | NA  |
| Additional Hazard Class (CFR):             | NA  |
| Packaging Group (CFR):                     | NA  |
| UN ID Number (CFR):                        | NA  |
| Shipping Name (IATA):                      | Non-hazardous   |
| Hazard Class (IATA):                       | NA  |
| Additional Hazard Class (IATA):            | NA  |
| Packaging Group (IATA):                    | NA  |
| UN ID Number (IATA):                       | NA  |
| <b>SECTION 15: Regulatory Information</b>  |   |
| TSCA:                                      | Not listed in the TSCA inventory.                             |
| SARA (Title 313):                          | Title compound not listed.                                    |



Second Ingredient: none

Third Ingredient: none