

## 1 - Product and Company Information

ProductName **BENZYLIDENE-BIS(TRICYCLOHEXYLPHOSPHINE)-DICHLORORUTHENIUM**

## 2 - Hazards Identification

### SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Irritating to eyes, respiratory system and skin.

## 3 - Composition/Information on Ingredients

| Product Name | CAS # | EC no | Annex I |
|--------------|-------|-------|---------|
|--------------|-------|-------|---------|

**BENZYLIDENE-BIS(TRICYCLOHEXYLPHOSP** 172222-30-9 **None**  
**HINE)-DICHLORORUTHENIUM**

Formula C43H72Cl2P2Ru  
Molecular Weight 822.96 AMU  
Synonyms Grubbs Catalyst 1st Generation \*  
Bis(tricyclohexylphosphine)benzylidene  
ruthenium(IV) chloride

## 4 - First Aid Measures

### AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give  
artificial respiration. If breathing is difficult, give oxygen.

### AFTER SKIN CONTACT

In case of contact, immediately wash skin with soap and copious  
amounts of water.

### AFTER EYE CONTACT

In case of contact, immediately flush eyes with copious amounts  
of water for at least 15 minutes.

### AFTER INGESTION

If swallowed, wash out mouth with water provided person is  
conscious. Call a physician.

## 5 - Fire Fighting Measures

### EXPLOSION DATA

Dust Potential: This material, like most materials in powder  
form, is capable of creating a dust explosion.

### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or  
appropriate foam.

### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing  
to prevent contact with skin and eyes.

## 6 - Accidental Release Measures

### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and  
heavy rubber gloves.

### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid  
raising dust. Ventilate area and wash spill site after material  
pickup is complete.

## 7 - Handling and Storage

### HANDLING

Directions for Safe Handling: Do not breathe dust. Avoid contact  
with eyes, skin, and clothing. Avoid prolonged or repeated  
exposure.

### STORAGE

Conditions of Storage: Keep tightly closed.

Store at 2-8°C

### SPECIAL REQUIREMENTS: Air and light sensitive. Handle and store under inert gas.

## 8 - Exposure Controls / Personal Protection

### ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Use respirators and components tested and  
approved under appropriate government standards such as NIOSH (US)  
or CEN (EU). Where risk assessment shows air-purifying respirators  
are appropriate use a dust mask type N95 (US) or type P1 (EN 143)  
respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

## 9 - Physical and Chemical Properties

Appearance Color: Violet  
Form: Powder

| Property | Value | At Temperature or Pressure |
|----------|-------|----------------------------|
|----------|-------|----------------------------|

|                       |        |
|-----------------------|--------|
| pH                    | N/A    |
| BP/BP Range           | N/A    |
| MP/MP Range           | 153 °C |
| Flash Point           | N/A    |
| Flammability          | N/A    |
| Autoignition Temp     | N/A    |
| Oxidizing Properties  | N/A    |
| Explosive Properties  | N/A    |
| Explosion Limits      | N/A    |
| Vapor Pressure        | N/A    |
| Partition Coefficient | N/A    |
| Viscosity             | N/A    |
| Vapor Density         | N/A    |
| Saturated Vapor Conc. | N/A    |
| Evaporation Rate      | N/A    |
| Bulk Density          | N/A    |
| Decomposition Temp.   | N/A    |
| Solvent Content       | N/A    |
| Water Content         | N/A    |
| Surface Tension       | N/A    |
| Conductivity          | N/A    |
| Miscellaneous Data    | N/A    |
| Solubility            | N/A    |

## 10 - Stability and Reactivity

### STABILITY

Stable: Stable.

Conditions to Avoid: Air. Light.

Materials to Avoid: Strong oxidizing agents, Aluminum, Chemically  
active metals, Acids, Bases.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide,

Hydrogen chloride gas, Phosphorous oxides.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

## 11 - Toxicological Information

### SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and  
toxicological properties have not been thoroughly investigated.

### ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to

mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

## 12 - Ecological Information

No data available.

## 13 - Disposal Considerations

### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose  
of this material. Dissolve or mix the material with a combustible  
afterburner and scrubber. Observe all federal, state, and local  
environmental regulations.

## 14 - Transport Information

### RID/ADR

Non-hazardous for road transport.

### IMDG

Non-hazardous for sea transport.

### IATA

Non-hazardous for air transport.

## 15 - Regulatory Information

### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

Irritant.

R-PHRASES: 36/37/38

Irritating to eyes, respiratory system and skin.

S-PHRASES: 26-36

In case of contact with eyes, rinse immediately with plenty of

water and seek medical advice. Wear suitable protective

clothing.

Caution: Substance not yet fully tested (EU).

### COUNTRY SPECIFIC INFORMATION

#### Germany

WGK: 3

Self-Classification

## 16 - Other Information



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For R&D use only. Not for drug, household or other uses.

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. Lookchem 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.