

**Material Safety Data Sheet**

Version 3.0  
Revision Date 08/29/2009  
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**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Bis(methylcyclopentadienyl)zirconium(IV) dichloride

Product Number : 481238  
Brand : Aldrich

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +18003255832  
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Emergency Phone # : (314) 776-6555

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula :  $C_{12}H_{14}Cl_2Zr$   
Molecular Weight : 320.37 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Bis(methylcyclopentadienyl)zirconium(IV) dichloride</b>			
12109-71-6	-	-	-

**3. HAZARDS IDENTIFICATION****Emergency Overview****OSHA Hazards**

No known OSHA hazards

**HMIS Classification**

Health Hazard: 0  
Flammability: 0  
Physical hazards: 0

**NFPA Rating**

Health Hazard: 0  
Fire: 0  
Reactivity Hazard: 0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.  
**Skin** May be harmful if absorbed through skin. May cause skin irritation.  
**Eyes** May cause eye irritation.  
**Ingestion** May be harmful if swallowed.

**4. FIRST AID MEASURES**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

**In case of skin contact**

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**5. FIRE-FIGHTING MEASURES****Flammable properties**

Flash point no data available

Ignition temperature no data available

**Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>) Dry powder

**Extinguishing media which shall not be used for safety reasons**

Water

**Special protective equipment for fire-fighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions**

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

**Environmental precautions**

Do not let product enter drains.

**Methods for cleaning up**

Pick up and arrange disposal without creating dust. Do not flush with water. Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE****Handling**

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

**Storage**

Keep container tightly closed in a dry and well-ventilated place.

Never allow product to get in contact with water during storage.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

For prolonged or repeated contact use protective gloves.

#### Eye protection

Face shield and safety glasses

#### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	solid
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### Safety data

pH	no data available
Melting point	180.5 - 184 °C (356.9 - 363 °F) - lit.
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	no data available

## 10. STABILITY AND REACTIVITY

### Storage stability

Stable under recommended storage conditions.

### Conditions to avoid

Avoid moisture.  
Exposure to moisture.

### Materials to avoid

Strong oxidizing agents, acids, Bases, Chemically active metals

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas, Zirconium oxides

**11. TOXICOLOGICAL INFORMATION****Acute toxicity**

no data available

**Irritation and corrosion**

no data available

**Sensitisation**

no data available

**Chronic exposure**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Signs and Symptoms of Exposure**

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

**Potential Health Effects**

<b>Inhalation</b>	May be harmful if inhaled. May cause respiratory tract irritation.
<b>Skin</b>	May be harmful if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation.
<b>Ingestion</b>	May be harmful if swallowed.

**12. ECOLOGICAL INFORMATION****Elimination information (persistence and degradability)**

no data available

**Ecotoxicity effects**

no data available

**Further information on ecology**

no data available

**13. DISPOSAL CONSIDERATIONS****Product**

Observe all federal, state, and local environmental regulations.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION****DOT (US)**

UN-Number: 3261 Class: 8

Packing group: III

Proper shipping name: Corrosive solid, acidic, organic, n.o.s. (Bis(methylcyclopentadienyl)zirconium(IV) dichloride)

Marine pollutant: No

Poison Inhalation Hazard: No

**IMDG**

UN-Number: 3261 Class: 8

Packing group: III

EMS-No: F-A, S-B

Proper shipping name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Bis(methylcyclopentadienyl)zirconium(IV) dichloride)

Marine pollutant: No

**IATA**

UN-Number: 3261 Class: 8

Packing group: III

Proper shipping name: Corrosive solid, acidic, organic n.o.s. (Bis(methylcyclopentadienyl)zirconium(IV) dichloride)

**15. REGULATORY INFORMATION****OSHA Hazards**

No known OSHA hazards

**DSL Status**

This product contains the following components listed on the Canadian NDSL list. All other components are on the Canadian DSL list.

Bis(methylcyclopentadienyl)zirconium(IV) dichloride

CAS-No.

12109-71-6

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

No SARA Hazards

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

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**New Jersey Right To Know Components**

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**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

**16. OTHER INFORMATION****Further information**

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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. Sigma-Aldrich Co., 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.