

## Safety Data Sheet

### 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1 Product Identifiers

Product Name: **Bis(cyclopentadienyl)zirconium(IV) chloride hydride**

Product Code: BM1724

CAS-No.: 37342-97-5

#### 1.2 (Schwartz's reagent

#### 1.3 Relevant identified uses of the substance or mixture and uses advised against

Identified uses Laboratory chemicals, Manufacture of substances

#### 1.4 Details of the supplier of the safety data sheet

Company	Boron Molecular Pty Ltd
Address	500 Princes Hwy (PO Box 756), Noble Park, Vic, 3174 Australia
Telephone Number	+61 3 8558 8000
Emergency Telephone Number	+1 703 527 3887 (Chemtrec) +61 413 777887, +61 412 191161 (Australia)

### 2 HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

Flammable liquids  
Skin Irritation  
Eye Irritation  
Specific target organ toxicity - single exposure

#### 2.2 Label elements

Pictogram



Signal word Danger

Hazard statement(s)

H226	Flammable Liquid and vapour
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

Prevention

P261	Avoid breathing dust/fume/gas/mist/vapors/spray
P264	Wash skin thoroughly after handling
P280	Wear protective gloves / protective clothes / eye protection / face protection

Response

P301+P310	IF SWALLOWED Immediately call Poison Centre or Physician
P302+P352	IF ON SKIN: Immediately flush skin with plenty of soap and water.
P305+P338+P351	IF IN EYES: Immediately flush eyes with plenty of water for at least 20 minutes.
P333+P313	If skin irritation or rash occurs: Get medical advice
P337+P313	If eye irritation persists: Get medical advice
P363	Wash contaminated clothing before reuse

**2.3 Other hazards - none****3 COMPOSITION/INFORMATION ON INGREDIENTS****3.1 Substances**

Synonyms	Schwartz's reagent	
Formula	C <sub>10</sub> H <sub>11</sub> ClZr	
Molecular weight	257.8700	amu
CAS Number	37342-97-5	
Concentration		

**4 FIRST AID MEASURES****4.1 Description of first aid measures****General Advice**

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

**Ingestion**

If swallowed do not induce vomiting. If Victim is conscious, wash out mouth with copious amounts of water. Seek immediate medical assistance.

**Eye**

Immediately flush eyes with plenty of water for at least 20 minutes while holding eyelids open.

**Skin**

Immediately flush skin with plenty of water for at least 20 minutes while removing contaminated clothing and shoes. Dispose of contaminated clothing and shoes in compliance with all local, state and federal laws and regulations.

**Inhalation**

Remove affected person to fresh air. If not breathing, give artificial respiration & seek immediate medical attention. If breathing is difficult, give oxygen.

**Chronic**

No specific information available on toxicity or the effects of overexposure

**SEEK IMMEDIATE MEDICAL ASSISTANCE IN ALL CASES****4.2 Most important symptoms and effects, both acute and delayed**

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

**4.3 Indication of any immediate medical attention and special treatment needed.**

No data available

**5 FIRE FIGHTING MEASURES****5.1 Extinguishing media**

Suitable extinguishing media  
Foam / Carbon dioxide / Dry powder

**5.2 Special hazards arising from the substance or mixture**

Not Determined – May include carbon monoxide, carbon dioxide, boron oxides, Nitrous Oxides &/or organic fumes.

**5.3 Advise for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary

**5.4 Further information**

No data available

**6 ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing dust, vapours, mist or gas. Ensure adequate ventilation. For respiratory protection, wear a NIOSH/MSHA approved dust mask or self contained breathing apparatus.

**6.2 Environmental precautions**

Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**

Pickup and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

**7 HANDLING AND STORAGE****7.1 Precautions for safe handling**

Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling. Keep container tightly closed. Do not breathe vapours or mist. Use only with adequate ventilation

**7.2 Conditions for safe storage, including any incompatibilities**

Handle and store in a DRY closed system, preferably under DRY nitrogen.  
Storage conditions: Store  $\leq 25^{\circ}\text{C}$  and protect from light

**7.3 Specific end uses**

Apart from the uses mentioned in section 1.3, no other specific uses are stipulated.

**8 EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters**

No data available

**8.2 Exposure controls**

**Personal protective equipment**

**Eye/face protection**

Safety glass with side shields

**Skin protection**

Handle with chemical resistant gloves. Gloves must be inspected before use.

**Body protection**

Impervious clothing

**Respiratory protection**

When inhalation of vapor or mist is possible, wear a NIOSH/MSHA approved dust mask or self-contained breathing apparatus with full face-piece operated in positive-pressure mode.

**Engineering controls**

Eye wash and safety showers must be available and in good working order.

**9 PHYSICAL AND CHEMICAL PROPERTIES**

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

a)	Appearance (Color and Form)	White to tan solid
b)	Odour	Not Determined
c)	Odour Threshold	Not Determined
d)	pH	Not Determined
e)	Melting Point	
f)	Boiling Point	Not Determined
g)	Flashpoint	Not Determined
h)	Evaporation rate	Not Determined
i)	Flammability	Not Determined
j)	Upper/lower flammability or explosive limits	Not Determined
k)	Vapour Pressure	Not Determined
l)	Vapour density	Not Determined
m)	Relative density	Not Determined
n)	Water solubility	Not Determined
o)	partition coefficient:	Not Determined
p)	Autoignition temperature	Not Determined
q)	Decomposition temperature	Not Determined
r)	Viscosity	Not Determined
s)	Explosive properties	Not Determined
t)	Oxidizing properties	Not Determined

**9.2 Other safety information**

No data available

**10 STABILITY AND REACTIVITY**

**10.1 Reactivity**

Not Determined.

**10.2 Chemical stability**

Not Determined.

**10.3 Possibility of hazardous reactions**

Not Determined - Not expected to occur.

**10.4 Conditions to avoid**

Keep away from heat, sparks, and flame.

**10.5 Incompatible materials**

Strong Oxidisers

**10.6 Hazardous decomposition products**

Not Determined – May include carbon monoxide, carbon dioxide, boron oxides, Nitrous Oxides &/or organic fumes.

**11 TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

a)	Acute toxicity	Not Determined.
b)	Skin corrosion/irritation	Not Determined.
c)	Serious eye damage	Not Determined.
d)	Respiratory or skin sensitization	Not Determined.
e)	Germ cell mutagenicity	Not Determined.
f)	Carcinogenicity	Not Determined.
g)	Reproductive toxicity	Not Determined.
h)	Specific target organ toxicity – single exposure	Inhalation – May cause respiratory irritation.
i)	Specific target organ toxicity – repeated exposure	Not Determined.
j)	Aspiration hazard	Not Determined.

**12 ECOLOGICAL INFORMATION**

12.1	Toxicity	Not Determined.
12.2	Persistence	Not Determined.
12.3	Bioaccumulative potential	Not Determined.
12.4	Mobility in soil	Not Determined.
12.5	Results of PBT and vPvB assessment	Not Determined.
12.6	Other adverse effects	Not Determined.

**13 DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state & local environmental regulations.

**14 TRANSPORTATION INFORMATION**

**14.1 UN number**

ADR/RID: 3131                      IMDG: 3131                      IATA-DGR: 3131

**14.2 UN proper shipping name**

ADR/RID: WATER-REACTIVE SOLID, CORROSIVE, N.O.S. (Bis(3-



cyclopentadienyl)chlorohydrozirconium)  
IMDG: WATER-REACTIVE SOLID, CORROSIVE, N.O.S. (Bis(3-  
cyclopentadienyl)chlorohydrozirconium)  
IATA-DGR: WATER-REACTIVE SOLID, CORROSIVE, N.O.S. (Bis(3-  
cyclopentadienyl)chlorohydrozirconium)

**14.3 Transport hazard class(es)**

ADR/RID: 4.3 (8)      IMDG: 4.3 (8)      IATA-DGR: 4.3 (8)

**14.4 Packaging group**

ADR/RID: II      IMDG: II      IATA-DGR: II

**14.5 Environmental hazard**

ADR/RID: No      IMDG: No      IATA-DGR: No

**14.6 Special precautions for user**

N/A

**15 REGULATORY INFORMATION**

Safety, health and environment regulations/legislation specific for the substance or mixture  
Not Applicable.

**16 OTHER INFORMATION**

Date of Preparation      03/04/2018  
Revision No.      8

**Disclaimer:**

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**THE END**