

# Bis (cyclopentadienyl) tungsten (IV) dihydride : sc-227386



The Power to Question

## MATERIAL SAFETY DATA SHEET

### 1 Identification of substance:

**Product Name:** Bis(cyclopentadienyl) tungsten (IV) dihydride

**Catalog Number:** sc-227386

**Supplier:** Santa Cruz Biotechnology, Inc.  
2145 Delaware Avenue  
Santa Cruz, California 95060  
800.457.3801 or 831.457.3800

**Emergency:** ChemWatch  
Within the US & Canada: 877-715-9305  
Outside the US & Canada: +800 2436 2255  
(1-800-CHEMCALL) or call +613 9573 3112

### 2 Hazard(s) identification

**Classification of the substance or mixture**  
**Classification according to Regulation (EC) No 1272/2008**



GHS02 Flame

Flam. Sol. 2 H228 Flammable solid.  
Water-react. 3 H261 In contact with water releases flammable gas.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2A H319 Causes serious eye irritation.  
STOT SE 3 H335 May cause respiratory irritation.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

R10-14: Flammable. Reacts violently with water.

**Information concerning particular hazards for human and environment:** Not applicable  
**Hazards not otherwise classified** Reacts violently with water.

#### Label elements

**Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labeled according to the CLP regulation.

#### Hazard pictograms



GHS02



GHS07

**Signal word** Warning

#### Hazard statements

H228 Flammable solid.  
H261 In contact with water releases flammable gas.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.

#### Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P231+P232 Handle under inert gas. Protect from moisture.  
P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P305+P351+P338 *IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*

P405 *Store locked up.*

P501 *Dispose of contents/container in accordance with local/regional/national/international regulations.*

**WHMIS classification**

B4 - Flammable solid

B6 - Reactive flammable material

D2B - Toxic material causing other toxic effects



**Classification system**

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

**(Hazardous Materials Identification System)**

HEALTH	1
FIRE	2
REACTIVITY	2

Health (acute effects) = 1

Flammability = 2

Physical Hazard = 2

**Other hazards**

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

### 3 Composition/information on ingredients

**Chemical characterization: Substances**

**CAS# Description:**

1271-33-6 Bis(cyclopentadienyl)tungsten dihydride

### 4 First-aid measures

**Description of first aid measures**

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**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**

In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

**For safety reasons unsuitable extinguishing agents** Water

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

Reacts violently with water

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

Metal oxide fume

**Advice for firefighters**

**Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

### Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Do not allow product to reach sewage system or any water course.

Do not allow to penetrate the ground/soil.

### Methods and material for containment and cleaning up:

Keep away from ignition sources.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

**Prevention of secondary hazards:** Keep away from ignition sources.

### 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.

## 7 Handling and storage

### Handling

#### Precautions for safe handling

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

#### Information about protection against explosions and fires:

Protect against electrostatic charges.

#### Conditions for safe storage, including any incompatibilities

**Storage** Store at room temperature.

**Requirements to be met by storerooms and receptacles:** No special requirements.

#### Information about storage in one common storage facility:

Store away from oxidizing agents.

Store away from air.

Store away from water/moisture.

#### Further information about storage conditions:

Store under dry inert gas.

This product is moisture sensitive.

This product is air sensitive.

Protect from humidity and water.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

### Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

### Control parameters

**Components with limit values that require monitoring at the workplace:**

Tungsten and compounds (as W)

	mg/m <sup>3</sup>
ACGIH TLV	5; 10-STEL (metal) 1; 3-STEL (soluble compounds)
	5; 10-STEL (insoluble compounds)
Belgium TWA	1 (soluble compounds) 5; 10-STEL (insoluble compounds)
Finland TWA	5 (metal) 1 (soluble compounds) 5 (insoluble compounds)
Netherlands MAC-TGG	5 (metal) 1 (soluble compounds) 5 (insoluble compounds)
Poland TWA	5 (metal) 1 (soluble compounds) 5 (insoluble compounds)
Sweden NGV	5 (metal) 1 (soluble compounds) 5 (insoluble compounds)

United Kingdom TWA 5; 10-STEL (metal)  
 1; 3-STEL (soluble compounds)  
 5; 10-STEL (insoluble compounds)  
 MSHA TWA 1 (soluble compounds)  
 5 (insoluble compounds)

**1271-33-6 Bis(cyclopentadienyl)tungsten dihydride (100.0%)**

TLV (USA)	Short-term value: 10 mg/m <sup>3</sup> Long-term value: 5 mg/m <sup>3</sup> as W
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**Additional information:** No data

**Exposure controls**

**Personal protective equipment**

**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use suitable respirator when high concentrations are present.

**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

**Eye protection:**

Safety glasses

Full face protection

**Body protection:** Protective work clothing.

**9 Physical and chemical properties**

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**

Form: Crystalline

Formula: C10H12W

Weight: 316.04

pH-value: Not applicable.

**Change in condition**

Melting point/Melting range: >350 °C (>662 °F)

Boiling point/Boiling range: Not determined

Sublimation temperature / start: Not determined

Flash point: Not applicable

Flammability (solid, gaseous) Flammable.

Ignition temperature: Not determined

Decomposition temperature: Not determined

Auto igniting: Not determined.

Danger of explosion: Not determined.

**Explosion limits:**

Lower: Not determined

Upper: Not determined

Vapor pressure: Not applicable.

Density: Not determined

Relative density: Not determined.

Vapor density: Not applicable.

Evaporation rate: Not applicable.

**Solubility in / Miscibility with**

Water: Reacts violently

Partition coefficient (n-octanol/water): Not determined.

**Viscosity:**

dynamic: Not applicable.

kinematic: Not applicable.

**Other information** No further relevant information available.

## 10 Stability and reactivity

**Reactivity** Reacts violently with water.

**Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** Reacts violently with water

**Incompatible materials:**

Air

Oxidizing agents

Water/moisture

**Hazardous decomposition products:**

Carbon monoxide and carbon dioxide

Metal oxide fume

## 11 Toxicological information

**Information on toxicological effects**

**Acute toxicity:** No effects known.

**LD/LC50 values that are relevant for classification:** No data

**Skin irritation or corrosion:** Causes skin irritation.

**Eye irritation or corrosion:** Causes serious eye irritation.

**Sensitization:** No sensitizing effects known.

**Germ cell mutagenicity:** No effects known.

**Carcinogenicity:**

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**Reproductive toxicity:** No effects known.

**Specific target organ system toxicity - repeated exposure:** No effects known.

**Specific target organ system toxicity - single exposure:** May cause respiratory irritation.

**Aspiration hazard:** No effects known.

**Subacute to chronic toxicity:**

Tungsten compounds may be irritating to the eyes and respiratory tract. Chronic exposure may result in permanent lung damage.

**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

## 12 Ecological information

**Toxicity**

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

**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:**

Do not allow material to be released to the environment without proper governmental permits. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Avoid transfer into the environment.

**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** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**




**Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

**UN-Number**

**DOT, ADR, IMDG, IATA**

UN3396

<b>UN proper shipping name</b>	
<b>DOT</b>	Organometallic substance, solid, water-reactive, flammable (Bis(cyclopentadienyl)tungsten dihydride)
<b>ADR</b>	3396 Organometallic substance, solid, water-reactive, flammable (Bis(cyclopentadienyl)tungsten dihydride)
<b>IMDG, IATA</b>	ORGANOMETALLIC SUBSTANCE, SOLID, WATER- REACTIVE, FLAMMABLE (Bis(cyclopentadienyl)tungsten dihydride)
<b>Transport hazard class(es)</b>	
<b>DOT</b>	
	
<b>Class</b>	4.3 Substances which, in contact with water, emit flammable gases.
<b>Label</b>	4.3+4.1
<b>ADR</b>	
	
<b>Class</b>	4.3 (WF2) Substances which, in contact with water, emit flammable gases
<b>Label</b>	4.3+4.1
<b>IMDG, IATA</b>	
	
<b>Class</b>	4.3 Substances which, in contact with water, emit flammable gases.
<b>Label</b>	4.3+4.1
<b>Packing group</b>	
<b>DOT, ADR, IMDG, IATA</b>	III
<b>Environmental hazards:</b>	Not applicable.
<b>Special precautions for user</b>	Warning: Substances which, in contact with water, emit flammable gases
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>DOT</b>	
<b>Marine Pollutant (DOT):</b>	No
<b>UN "Model Regulation":</b>	UN3396, Organometallic substance, solid, water-reactive, flammable (Bis(cyclopentadienyl)tungsten dihydride), 4.3 (4.1), III

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**National regulations**

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only. This product must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.

Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer** Substance is not listed.

**Prop 65 - Developmental toxicity** Substance is not listed.

**Prop 65 - Developmental toxicity, female** Substance is not listed.

**Prop 65 - Developmental toxicity, male** Substance is not listed.

**Information about limitation of use:** For use only by technically qualified individuals.

**Other regulations, limitations and prohibitive regulations**

**Substances of very high concern (SVHC) according to REACH, Article 57**

Substance is not listed.

**REACH - Pre-registered substances** Substance is not listed.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information:**

The above information is believed to be correct but does not purport to be complete and should be used only as a guide. The burden of safe use of this material rests entirely with the user.

3/26/2014