

# SAFETY DATA SHEET

Preparation Date: 10/7/2013

Revision Date: 10/07/2013

Revision Number: G1

## 1. IDENTIFICATION

### Product identifier

**Product code:** B3186  
**Product Name:** [1.1'-Bis(diphenylphosphino)ferrocene] palladium(ii) Dichloride Dichloromethane Adduct (1:1)

### Other means of identification

**Synonyms:** No information available  
**CAS #:** 95464-05-4  
**RTECS #** Not available  
**CI#:** Not available

### Recommended use of the chemical and restrictions on use

**Recommended use:** No information available.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemicals and Laboratory Products, Inc.  
 14422 South San Pedro St.  
 Gardena, CA 90248  
 (310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>

**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Martin LaBenz (West Coast)  
**Contact Person:** Regina Wachenheim (East Coast)

## 2. HAZARDS IDENTIFICATION

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A

### Label elements

**Product code:** B3186

**Product name:** [1.1'-  
 Bis(diphenylphosphino)ferrocene]  
 palladium(ii) Dichloride Dichloromethane  
 Adduct (1:1)

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**Warning****Hazard statements**

Harmful if swallowed  
Harmful in contact with skin  
Harmful if inhaled  
Causes skin irritation  
Causes serious eye irritation

**Hazards not otherwise classified (HNOC)**

Not Applicable

**Other hazards**

Not available

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Wear protective gloves/protective clothing/eye protection/face protection  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area

**Precautionary Statements - Response**

Specific measures (see .? on this label)  
Specific treatment (see .? on this label)  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.  
IF ON SKIN: Wash with plenty of soap and water  
Call a POISON CENTER or doctor/physician if you feel unwell  
If skin irritation occurs: Get medical advice/attention  
Take off contaminated clothing and wash before reuse  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Components	CAS-No.	Weight %	Trade Secret
[1,1'- Bis(diphenylphosphino)ferrocene]palladium(II) Dichloride Dichloromethane Adduct (1:1) 95464-05-4	95464-05-4	100	*

Product code: B3186

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## 4. FIRST AID MEASURES

### First aid measures

#### **General Advice:**

Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)

#### **Skin Contact:**

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

#### **Eye Contact:**

Flush eye with water for 15 minutes. Get medical attention.

#### **Inhalation:**

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

#### **Ingestion:**

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

### Most important symptoms and effects, both acute and delayed

#### **Symptoms**

Irritating to eyes and skin. May cause irritation of respiratory tract.

### Indication of any immediate medical attention and special treatment needed

#### **Notes to Physician:**

Treat symptomatically

### Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

## 5. FIRE-FIGHTING MEASURES

### Extinguishing Media

#### **Suitable Extinguishing Media:**

Carbon dioxide (CO<sub>2</sub>). Dry chemical. Water spray mist or foam.

#### **Unsuitable Extinguishing Media:**

No information available.

### Specific hazards arising from the chemical

#### **Hazardous Combustion Products:**

Carbon monoxide; Carbon dioxide; halogenated compounds; phosphates; some metallic oxides; Hydrogen chloride

#### **Specific hazards:**

May be combustible at high temperatures.

### Special Protective Actions for Firefighters

#### **Specific Methods:**

No information available.

#### **Special Protective Equipment for Firefighters:**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

#### **Personal Precautions:**

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Remove all sources of ignition.

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**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

**Methods and material for containment and cleaning up****Methods for containment**

Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

**Methods for cleaning up**

Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

**7. HANDLING AND STORAGE****Precautions for safe handling****Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials. All equipment used when handling the product must be grounded.

**Safe Handling Advice:**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities****Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store away from incompatible materials.

**Incompatible Materials:**

Oxidizing agents.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters****National occupational exposure limits**

U.S Occupational Exposure Limits: Not determined

**United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1) - 95464-05-4	None	None	None	None

**Canada**

Canada Occupational Exposure Limits: Not determined

Components	Alberta	British Columbia	Ontario	Quebec
[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1) - 95464-05-4	None	None	None	None

**Australia and Mexico**

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**Product name:** [1,1'-Bis(diphenylphosphino)ferrocene]palladium(ii) Dichloride Dichloromethane Adduct (1:1)

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Occupational Exposure Limits for Australia and Mexico: Not determined

Components	Australia	Mexico
[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1) 95464-05-4	None	None

**Appropriate engineering controls**

**Engineering measures to reduce exposure:**

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment**

- Eye protection:** Safety glasses. Safety glasses with side-shields.
- Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.
- Respiratory protection:** Effective dust mask. Wear respirator with dust filter..
- Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state:</b> Solid.	<b>Appearance:</b> Powder.	<b>Color:</b> Yellowish-Red.
<b>Odor:</b> No information available	<b>Taste</b> No information available	<b>Formula:</b> C35H30Cl4FeP2Pd or C34H28Cl2FeP2Pd.CH2Cl2
<b>Molecular/Formula weight:</b> 816.64	<b>Flash point (°C):</b> Not applicable	<b>Flashpoint (°C/°F):</b> Not applicable
<b>Flash Point Tested according to:</b> Not applicable	<b>Lower Explosion Limit (%):</b> No information available	<b>Upper Explosion Limit (%):</b> No information available
<b>Autoignition Temperature (°C/°F):</b> No information available	<b>pH:</b> No information available	<b>Melting point/range(°C/°F):</b> 275-280 °C/527-536 °F
<b>Boiling point/range(°C/°F):</b> No information available	<b>Decomposition temperature(°C/°F):</b> No information available	<b>Specific gravity:</b> No information available
<b>Density (g/cm3):</b> No information available	<b>Bulk density:</b> No information available	<b>Vapor pressure @ 20°C (kPa):</b> No information available
<b>Evaporation rate:</b> No information available	<b>Vapor density:</b> No information available	<b>VOC content (g/L):</b> No information available
<b>Odor threshold (ppm):</b> No information available	<b>Partition coefficient (n-octanol/water):</b> No information available	<b>Viscosity:</b> No information available
<b>Miscibility:</b> No information available	<b>Solubility:</b> No information available	

## 10. STABILITY AND REACTIVITY

### Reactivity

No information available

### Chemical stability

**Stability:** Stable at normal conditions

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Avoid dust formation. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Incompatible materials.

**Incompatible Materials:** Oxidizing agents.

**Hazardous decomposition products:** Carbon monoxide. Carbon dioxide. Hydrogen chloride gas. Metal oxide fumes. Halogenated compounds. Phosphorus oxides.

### Other Information

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

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## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

#### Principal Routes of Exposure:

Ingestion. Inhalation.

### Numerical measures of toxicity Product Information

#### Acute Toxicity

#### Component Information

[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1) - 95464-05-4

**LD50/oral/rat** = No information available

**LD50/oral/mouse** = No information available

**LD50/dermal/rabbit** =

No information available

**LD50/dermal/rat** = No information available

**LC50/inhalation/rat** =

No information available

**LC50/inhalation/mouse** = No information available

**Other LD50 or LC50 information** =

No information available

#### Product Information

**LD50/oral/rat** =

**VALUE- Acute Tox Oral** = No information availablemg/kg

**LD50/oral/mouse** =

**Value - Acute Tox Oral** = No information available

**LD50/dermal/rabbit**

**VALUE-Acute Tox Dermal** = No information available

**LD50/dermal/rat**

**VALUE -Acute Tox Dermal** = No information available

**LC50/inhalation/rat**

**VALUE-Vapor** = No information available

**VALUE-Gas** = No information available

**VALUE-Dust/Mist** = No information available

**LC50/Inhalation/mouse**

**VALUE-Vapor** = No information available

**VALUE - Gas** = No information available

**VALUE - Dust/Mist** = No information available

#### Symptoms

**Skin Contact:** Causes skin irritation. Harmful in contact with skin.

**Eye Contact:** Causes eye irritation.

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**Inhalation** Harmful by inhalation. May cause irritation of respiratory tract.  
**Ingestion** Harmful if swallowed.

**Aspiration hazard** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic Toxicity** No information available.  
**Sensitization:** No information available

**Mutagenic Effects:** May affect genetic material  
Mutagenic effects in mammalian somatic cells  
Experiments with human lymphocytes have shown mutagenic effects

**Carcinogenic effects:** No information available.

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1)	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available

**Developmental Effects:** No information available  
**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** No information available  
**STOT - repeated exposure** No information available  
**Target Organs:** No information available

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:** No data available.

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available

**Mobility:** No information available

**13. DISPOSAL CONSIDERATIONS**

**Product code:** B3186

**Product name:** [1,1'-Bis(diphenylphosphino)ferrocene]palladium(ii) Dichloride Dichloromethane Adduct (1:1)

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## 13. DISPOSAL CONSIDERATIONS

### Disposal Methods

**Waste from residues / unused products:**

Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1)	None	None	None	None

## 14. TRANSPORT INFORMATION

**DOT**

**UN-No:** Not regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** Not applicable  
**Packing Group:** None  
**Marine Pollutant:** No data available  
**ERG No:** No information available  
**DOT RQ (lbs):** No information available

**TDG (Canada)**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

**ADR**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Packing Group:** No information available  
**Subsidiary Risk:** No information available  
**Classification Code:** No information available  
**Description:** No information available  
**CEFIC Tremcard No:** No information available

**IMO / IMDG**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available  
**IMDG Page:** No information available  
**Marine Pollutant:** No information available

**Product code:** B3186

**Product name:** [1,1'-Bis(diphenylphosphino)ferrocene]palladium(ii) Dichloride Dichloromethane Adduct (1:1)

**14. TRANSPORT INFORMATION**

**MFAG:** No information available  
**Maximum Quantity:** No information available

**RID**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Classification Code:** No information available  
**Description:** No information available

**ICAO**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

**IATA**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Description:** No information available

**15. REGULATORY INFORMATION****International Inventories**

Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1)	Not Listed	Not present	Not present	Not present	Not present	Not present	Not present

**U.S. Regulations****California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.****Chemicals Known to the State of California to Cause Cancer:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

**Chemicals Known to the State of California to Cause Reproductive Toxicity:**

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1)	Not Listed	Not Listed	Not Listed	Not Listed

**Product code:** B3186

**Product name:** [1,1'-Bis(diphenylphosphino)ferrocene]palladium(ii) Dichloride Dichloromethane Adduct (1:1)

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**CERCLA/SARA**

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1)	None	None	None	None	None

**U.S. TSCA**

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1)	Not Applicable	Not Applicable

**Canada**

**WHMIS hazard class:**

D2B Toxic materials

**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

**Inventory**

Components	Canada (DSL)	Canada (NDSL)
[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1)	Not Listed	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
[1,1'-Bis(diphenylphosphino)ferrocene]palladium(II)Dichloride Dichloromethane Adduct (1:1)	Not listed	Not listed

**EU Classification**

**R-phrase(s)**

- R20 - Harmful by inhalation.
- R21 - Harmful in contact with skin.
- R22 - Harmful if swallowed.
- R36/38 - Irritating to eyes and skin.

**S -phrase(s)**

S46 - If swallowed, seek medical advice immediately and show this container or label.

**Product code:** B3186

**Product name:** [1,1'-Bis(diphenylphosphino)ferrocene]palladium(ii) Dichloride Dichloromethane Adduct (1:1)

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**

Xn - Harmful.



**16. OTHER INFORMATION**

NFPA	HMIS	Personal Protective Equipment
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Health Hazard	2
Fire Hazard	1
Reactivity	0



See Section 8.

Preparation Date: 10/7/2013  
Revision Date: 10/07/2013  
Prepared by: Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

**End of Material Safety Data Sheet**

Product code: B3186

Product name: [1.1'-  
Bis(diphenylphosphino)ferrocene]  
palladium(ii) Dichloride Dichloromethane  
Adduct (1:1)

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