

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 18.07.2021

Revision: 18.07.2021

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **1.1 Product identifier**
- **Trade name:** Tetrakis(triphenylphosphine)palladium(0), 99% (99.9+%-Pd)
- **Item number:** 46-2150
- **CAS Number:**  
14221-01-3
- **EC number:**  
238-086-9
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Strem Chemicals, Inc.  
7 Mulliken Way  
NEWBURYPORT, MA 01950  
USA  
info@strem.com
- **Further information obtainable from:** Technical Department
- **1.4 Emergency telephone number:**  
EMERGENCY: CHEMTREC: + 1 (800) 424-9300  
During normal opening times: +1 (978) 499-1600

**SECTION 2: Hazards identification**

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



GHS09 environment

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS09

- **Signal word** Warning
- **Hazard statements**  
H410 Very toxic to aquatic life with long lasting effects.
- **Precautionary statements**
  - P101 If medical advice is needed, have product container or label at hand.
  - P102 Keep out of reach of children.
  - P103 Read label before use.
  - P231 Handle under inert gas.
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  - P411+P235 Store at temperatures not exceeding -18°C. Keep cool.

(Contd. on page 2)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 18.07.2021

Revision: 18.07.2021

**Trade name: Tetrakis(triphenylphosphine)palladium(0), 99% (99.9+%-Pd)**

(Contd. of page 1)

P422 Store contents under inert gas.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Description**  
14221-01-3 Tetrakis(triphenylphosphine)palladium(0), 99% (99.9+%-Pd)
- **Identification number(s)**
- **EC number:** 238-086-9

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:**  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to item 13.
- **6.4 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.

GB

(Contd. on page 3)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 18.07.2021

Revision: 18.07.2021

**Trade name: Tetrakis(triphenylphosphine)palladium(0), 99% (99.9+%-Pd)**

(Contd. of page 2)

**SECTION 7: Handling and storage**

- **7.1 Precautions for safe handling** Open and handle receptacle with care.
- **Handling:** Handle under inert gas.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**  
Keep cool.  
Store contents under inert gas.
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Recommended storage temperature:** Store at temperatures not exceeding -18 °C. Keep cool.
- **7.3 Specific end use(s)** No further relevant information available.

**SECTION 8: Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Not required.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses

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

**General Information**

**Appearance:**

- **Form:** Powder
- **Colour:** Yellow
- **Odour:** Characteristic
- **Odour threshold:** Not determined.

- **pH-value:** Not applicable.

(Contd. on page 4)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 18.07.2021

Revision: 18.07.2021

**Trade name: Tetrakis(triphenylphosphine)palladium(0), 99% (99.9+%-Pd)**

(Contd. of page 3)

· <b>Change in condition</b> <b>Melting point/freezing point:</b> <b>Initial boiling point and boiling range:</b>	Undetermined. Undetermined.
· <b>Flash point:</b>	Not applicable.
· <b>Flammability (solid, gas):</b>	Not determined.
· <b>Ignition temperature:</b>	
<b>Decomposition temperature:</b>	Not determined.
· <b>Auto-ignition temperature:</b>	Not determined.
· <b>Explosive properties:</b>	Product does not present an explosion hazard.
· <b>Explosion limits:</b> <b>Lower:</b> <b>Upper:</b>	Not determined. Not determined.
· <b>Vapour pressure:</b>	Not applicable.
· <b>Density:</b> · <b>Relative density</b> · <b>Vapour density</b> · <b>Evaporation rate</b>	Not determined. Not determined. Not applicable. Not applicable.
· <b>Solubility in / Miscibility with water:</b>	Insoluble.
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b> <b>Dynamic:</b> <b>Kinematic:</b>	Not applicable. Not applicable.
· <b>Solvent content:</b> <b>Organic solvents:</b> <b>VOC (EC)</b>	0.0 % 0.00 %
<b>Solids content:</b>	100.0 %
· <b>9.2 Other information</b>	No further relevant information available.

**SECTION 10: Stability and reactivity**

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

**SECTION 11: Toxicological information**

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

(Contd. on page 5)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 18.07.2021

Revision: 18.07.2021

**Trade name: Tetrakis(triphenylphosphine)palladium(0), 99% (99.9+%-Pd)**

(Contd. of page 4)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.  
Also poisonous for fish and plankton in water bodies.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

### SECTION 14: Transport information

- |  |               |
|--|---------------|
| · <b>14.1 UN-Number</b>                  |               |
| · <b>ADR, ADN, IMDG, IATA</b>            | not regulated |
| · <b>14.2 UN proper shipping name</b>    |               |
| · <b>ADR, ADN, IMDG, IATA</b>            | not regulated |
| · <b>14.3 Transport hazard class(es)</b> |               |
| · <b>ADR, ADN, IMDG, IATA</b>            |               |
| · <b>Class</b>                           | not regulated |

(Contd. on page 6)

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 18.07.2021

Revision: 18.07.2021

**Trade name: Tetrakis(triphenylphosphine)palladium(0), 99% (99.9+%-Pd)**

(Contd. of page 5)

- |  |                        |
|--|------------------------|
| · <b>14.4 Packing group</b><br>· <b>ADR, IMDG, IATA</b>                          | <i>not regulated</i>   |
| · <b>14.5 Environmental hazards:</b>   | <i>Not applicable.</i> |
| · <b>14.6 Special precautions for user</b>                                       | <i>Not applicable.</i> |
| · <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b> | <i>Not applicable.</i> |
| · <b>UN "Model Regulation":</b>  | <i>not regulated</i>   |

**SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I Substance is not listed.**
- **Seveso category E1 Hazardous to the Aquatic Environment**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t**
- **Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t**
- **National regulations:**
- **Waterhazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.**
- **15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

**SECTION 16: Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Department issuing SDS: Technical Department.**
- **Contact: Technical Director**
- **Abbreviations and acronyms:**  
*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*  
*IMDG: International Maritime Code for Dangerous Goods*  
*IATA: International Air Transport Association*  
*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*  
*EINECS: European Inventory of Existing Commercial Chemical Substances*  
*CAS: Chemical Abstracts Service (division of the American Chemical Society)*  
*VOC: Volatile Organic Compounds (USA, EU)*  
*PBT: Persistent, Bioaccumulative and Toxic*  
*vPvB: very Persistent and very Bioaccumulative*  
*Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1*