1 Identification

- **Product name**
- **Trade name:** trans-Dichlorobis(triphenylphosphine)palladium(II), 99% (99.9+%-Pd)
- **Item number:** 46-0530
- **CAS Number:** 13965-03-2
- **EC number:** 237-744-2

Details of the supplier of the safety data sheet

- **Manufacturer/Supplier:** Strem Chemicals, Inc.
  7 Mulliken Way
  NEWBURYPORT, MA 01950
  USA
  info@strem.com

- **Information department:** Technical Department
- **Emergency telephone number:**
  EMERGENCY: CHEMTREC: + 1 (800) 424-9300
  During normal opening times: +1 (978) 499-1600

2 Hazard(s) identification

- **Classification of the substance or mixture**

  ![GHS07]

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

- **Label elements**
- **GHS label elements**
  The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**

  ![GHS07]

- **Signal word** Warning

  - **Hazard-determining components of labeling:**
    dichlorobis(triphenylphosphine)palladium
  - **Hazard statements**
    H315 Causes skin irritation.
    H319 Causes serious eye irritation.
    H335 May cause respiratory irritation.
  - **Precautionary statements**
    P262 Do not get in eyes, on skin, or on clothing.
    P280 Wear protective gloves/protective clothing/eye protection/face protection.
    P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Trade name: trans-Dichlorobis(triphenylphosphine)palladium(II), 99% (99.9+-Pd)

- Classification system:
- NFPA ratings (scale 0 - 4)
  - Health = 1
  - Fire = 0
  - Reactivity = 0

- HMIS-ratings (scale 0 - 4)
  - HEALTH Health = 1
  - FIRE Fire = 0
  - REACTIVITY Reactivity = 0

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

3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  - 13965-03-2 dichlorobis(triphenylphosphine)palladium
- Identification number(s)
  - EC number: 237-744-2

4 First-aid measures

- Description of first aid measures
  - After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: Immediately wash with water and soap and rinse thoroughly.
  - After eye contact:
    - Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - After swallowing: If symptoms persist consult doctor.
- 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: Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture: No further relevant information available.
- Advice for firefighters
- Protective equipment: No special measures required.
6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**: Not required.
- **Environmental precautions**: No special measures required.
- **Methods and material for containment and cleaning up**:
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- **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.
- **Protective Action Criteria for Chemicals**
  - **PAC-1**: Substance is not listed.
  - **PAC-2**: Substance is not listed.
  - **PAC-3**: Substance is not listed.

7 Handling and storage

- **Handling**
  - **Precautions for safe handling**: No special precautions are necessary if used correctly.
  - **Information about protection against explosions and fires**: No special measures required.
- **Conditions for safe storage, including any incompatibilities**
  - **Storage**
    - **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**: Keep receptacle tightly sealed.
- **Specific end use(s)**: No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems**: No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace**: Not required.
- **Additional information**: The lists that were valid during the creation were used as basis.
- **Exposure controls**
  - **Personal protective equipment**
    - **General protective and hygienic measures**:
      - Keep away from foodstuffs, beverages and feed.
      - Immediately remove all soiled and contaminated clothing.
      - Wash hands before breaks and at the end of work.
      - Avoid contact with the eyes and skin.
    - **Breathing equipment**: A NIOSH approved respirator in accordance with 29 CFR 1910.134.
Trade name: trans-Dichlorobis(triphenylphosphine)palladium(II), 99% (99.9+%-Pd)

- **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:**
  
  Tightly sealed goggles

9 **Physical and chemical properties**

- **Information on basic physical and chemical properties**
  
  - **General Information**
  
    - **Appearance:**
      
      Form: Powder
      Color: Yellow
      Odor: Odorless
      Odor threshold: Not determined.
    
    - **pH-value:**
      
      Not applicable.

- **Change in condition**
  
  - Melting point/Melting range: Undetermined.
  
    - Boiling point/Boiling range: Undetermined.

- **Flash point:**
  
  Not applicable.

- **Flammability (solid, gaseous):**
  
  Not determined.

- **Ignition temperature:**
  
  - Decomposition temperature: Not determined.
  
    - Auto igniting: Not determined.
  
    - Danger of explosion: Product does not present an explosion hazard.

- **Explosion limits:**
  
  - Lower: Not determined.
  
    - Upper: Not determined.

- **Vapor pressure:**
  
  Not applicable.

- **Density:**
  
  Not determined.

- **Relative density**
  
  Not determined.
Safety Data Sheet  
according to OSHA HCS

Trade name: trans-Dichlorobis(triphenylphosphine)palladium(II), 99% (99.9+-Pd)

- Vapor density  
  Not applicable.
- Evaporation rate  
  Not applicable.
- Solubility in / Miscibility with Water: 
  Insoluble.
- Partition coefficient (n-octanol/water): Not determined.
- Viscosity:  
  Dynamic: Not applicable.
  Kinematic: Not applicable.
- Solvent content:  
  Organic solvents: 0.0 %
  VOC content: 0.0 g/l / 0.00 lb/gl
- Solids content: 100.0 %
- Other information  
  No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity:
    - Primary irritant effect:
      - on the skin: Irritant to skin and mucous membranes.
      - on the eye: Irritating effect.
    - Sensitization: No sensitizing effects known.
  - Additional toxicological information:
    - Carcinogenic categories
      - IARC (International Agency for Research on Cancer)
        Substance is not listed.
      - NTP (National Toxicology Program)
        Substance is not listed.
      - OSHA-Ca (Occupational Safety & Health Administration)
        Substance is not listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
44.1.1
· Behavior in environmental systems:
· Bioaccumulative potential No further relevant information available.
· Mobility in soil No further relevant information available.
· Additional ecological information:
· General notes: Not known to be hazardous to water.
· 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: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
· Uncleaned packagings:
· Recommendation: Disposal must be made according to official regulations.

14 Transport information
· UN-Number
· DOT, ADN, IMDG, IATA not regulated
· UN proper shipping name
· DOT, ADN, IMDG, IATA not regulated
· Transport hazard class(es)
· DOT, ADN, IMDG, IATA not regulated
· Class not regulated
· Packing group
· DOT, IMDG, IATA not regulated
· Environmental hazards:
· Marine pollutant: No
· Special precautions for user Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.
· UN "Model Regulation": not regulated

15 Regulatory information
· Safety, health and environmental regulations/legislation specific for the substance or mixture
· Sara
· Section 355 (extremely hazardous substances):
Substance is not listed.
· Section 313 (Specific toxic chemical listings):
Substance is not listed.
Trade name: trans-Dichlorobis(triphenylphosphine)palladium(II), 99% (99.9+%-Pd)

· TSCA (Toxic Substances Control Act):
  Substance is not listed.

· Proposition 65
  Substance is not listed.

· Chemicals known to cause cancer:
  Substance is not listed.

· Chemicals known to cause reproductive toxicity for females:
  Substance is not listed.

· Chemicals known to cause reproductive toxicity for males:
  Substance is not listed.

· Chemicals known to cause developmental toxicity:
  Substance is not listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)
  Substance is not listed.

· TLV (Threshold Limit Value established by ACGIH)
  Substance is not listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)
  Substance is not listed.

· GHS label elements
  The substance is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms

GHS07

· Signal word Warning

· Hazard-determining components of labeling:
  dichlorobis(triphenylphosphine)palladium

· Hazard statements
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H335 May cause respiratory irritation.

· Precautionary statements
  P262 Do not get in eyes, on skin, or on clothing.
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.
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
- Date of preparation / last revision 07/18/2021 / -

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
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3