

SAFETY DATA SHEET

Issue Date 19-Nov-2025
Revision Number 1.08

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Dichloro[1,2-bis(diphenylphosphino)ethane]nickel(II)
Other means of identification
Product Code(s) 043-27552,045-27551

Recommended use of the chemical and restrictions on use

Recommended Use For research use only.
Uses advised against Seek expert judgment when using for purposes other than those recommended.

Details of the supplier of the safety data sheet

| | |
|--|---|
| Manufacturer Address FUJIFILM Wako Pure Chemical Corporation 1-2, Doshomachi 3-Chome, Chuo-ku Osaka 540-8605, Japan Tel : +81-6-6203-3741 Fax: +81-6-6201-5964 | Distributor FUJIFILM Irvine Scientific E. Warner Avenue, Santa Ana, CA 92705-5505, U.S.A.: +1 949 261 7800 Fax: +1 949 261 6522 |
|--|---|

2. HAZARDS IDENTIFICATION

GHS classification**Classification of the substance or mixture**

| | |
|--|-------------|
| Serious eye damage/eye irritation | Category 2B |
| Respiratory sensitization | Category 1 |
| Skin sensitization | Category 1 |
| Carcinogenicity | Category 1A |

Pictograms

Signal word Danger

Hazard statements

H320 - Causes eye irritation
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H350 - May cause cancer
H317 - May cause an allergic skin reaction

Precautionary statements-(Prevention)

Obtain special instructions before use Do not handle until all safety precautions have been read and understood Use personal protective equipment as required Wash face, hands and any exposed skin thoroughly after handling Avoid breathing dust/fume/gas/mist/vapors/spray In case of inadequate ventilation wear respiratory protection Contaminated work clothing should not be allowed out of the workplace Wear protective gloves

Precautionary statements-(Response)

IF exposed or concerned: Get medical advice/attention
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 If skin irritation or rash occurs: Get medical advice/attention Wash

contaminated clothing before reuse

IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

Precautionary statements-(Storage)

Store locked up

Precautionary statements-(Disposal)

Dispose of contents/container to an approved waste disposal plant

Others

Other hazards Not available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula [(C₆H₅)₂PCH₂CH₂P(C₆H₅)₂]NiCl₂

| Chemical Name | Molecular weight | CAS RN | Weight-% |
|--|------------------|------------|----------|
| Dichloro[1,2-bis(diphenylphosphino)ethane]nickel(II) | 528.02 | 14647-23-5 | 95.0 |

Impurities and/or Additives: Not applicable

4. FIRST AID MEASURES

First aid measures

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water.

Inhalation Remove to fresh air.

Ingestion Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing media

Water spray (fog). Carbon dioxide (CO₂). Foam. Extinguishing powder. Sand.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Explosion data

Sensitivity to Mechanical none.

Impact

Sensitivity to Static Discharge none.

Protective equipment and precautions 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, protective equipment and emergency procedures Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods and material for containment and cleaning up Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical measures Avoid contact with strong oxidizing agents.
Protective measures Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage conditions Keep container protect from light, store in well-ventilated place at room temperature (preferably cool). Keep container tightly closed.

Packaging materials Glass.

Incompatible materials Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits Not applicable

| Chemical Name | ACGIH | OSHA PEL | NIOSH IDLH |
|--|-------|----------|--|
| Dichloro[1,2-bis(diphenylphosphino)ethane]nickel(II) 14647-23-5 | N/A | N/A | IDLH: 10 mg/m ³ Ni TWA: 0.015 mg/m ³ except Nickel carbonyl Ni |

Personal protective equipment

Respiratory protection Dust mask (JIS T 8151)
Hand protection chemical protective gloves (JIS T 8116)
Eye protection protective eyeglasses or chemical safety goggles (JIS T 8147)
Skin and body protection Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|--------------------------------|
| Form | |
| Color | yellow - brown |
| Appearance | crystals - crystalline powder |
| Odor | no data available |
| pH | no data available |
| Melting point/freezing point | 263-265 °C |
| Boiling point, initial boiling point and boiling range | no data available |
| Flash point | no data available |
| Evaporation rate: | no data available |
| Flammability (solid, gas): | no data available |
| Upper/lower flammability or explosive limits | |
| Upper: | no data available |
| Lower: | no data available |
| Vapour pressure | no data available |
| Vapour density | no data available |
| Specific Gravity / Relative density | no data available |
| Solubilities | dimethyl sulfoxide : soluble . |
| n-Octanol/water partition coefficient:(log Pow) | no data available |
| Auto-ignition temperature: | no data available |
| Decomposition temperature: | no data available |
| Viscosity (coefficient of viscosity) | no data available |
| Dynamic viscosity | no data available |
| Particle characteristics | no data available |

10. STABILITY AND REACTIVITY

Stability

| | |
|---|--|
| Chemical stability | May be altered by light. |
| Reactivity | no data available |
| Hazardous reactions | None under normal processing |
| Conditions to avoid | Extremes of temperature and direct sunlight |
| Incompatible materials | Strong oxidizing agents |
| Hazardous decomposition products | Carbon monoxide (CO), Carbon dioxide (CO ₂), Phosphorus oxide, Halides |

11. TOXICOLOGICAL INFORMATION

| | |
|-----------------------|-------------------|
| Acute toxicity | no data available |
|-----------------------|-------------------|

| | |
|--|-------------------|
| Skin irritation/corrosion | no data available |
| Serious eye damage/ irritation | no data available |
| Respiratory or skin sensitization | no data available |
| Reproductive cell mutagenicity | no data available |
| Carcinogenicity | |

| Chemical Name | NTP | IARC | ACGIH | JSOH |
|--|-------|------|-------|---------------------|
| Dichloro[1,2-bis(diphenylphosphino)ethane]nickel(II) 14647-23-5 | Known | N/A | N/A | Group 1 Group 2B |

| | |
|------------------------------|-------------------|
| Reproductive toxicity | no data available |
| STOT-single exposure | no data available |

STOT-repeated exposure
Aspiration hazard

no data available
 no data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

no data available

Persistence and degradability

No information available

Bioaccumulative potential

No information available

Mobility

no data available

Mobility in soil

No information available

Other Data

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Precautionary including method of disposing contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

DOT

UN/ID No

Not regulated

Proper shipping name:

Not applicable

UN classification

Subsidiary hazard class

Packing group

Marine pollutant

Not applicable

IATA

UN/ID No

Not regulated

Proper shipping name:

-

UN classification

Subsidiary hazard class

Packing group

Environmentally Hazardous Substance

Not applicable

IMDG

UN/ID No

Not regulated

Proper shipping name:

-

UN classification

Subsidiary hazard class

Packing group

Marine pollutant (Sea)

Not applicable

15. REGULATORY INFORMATION**US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

| Chemical Name | CAS RN | Weight-% | SARA 313 - Threshold Values % |
|---|------------|----------|-------------------------------|
| Dichloro[1,2-bis(diphenylphosphino)ethane]nickel(II) - 14647-23-5 | 14647-23-5 | 95.0 | 0.1 |

SARA 311/312 Hazard Categories

| | |
|-----------------------------------|----|
| Acute health hazard | No |
| Chronic Health Hazard | No |
| Fire hazard | No |
| Sudden release of pressure hazard | No |
| Reactive Hazard | No |

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---|-----------------------------|------------------------|---------------------------|----------------------------|
| Dichloro[1,2-bis(diphenylphosphino)ethane]nickel(II) 14647-23-5 | N/A | X | N/A | N/A |

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations**California Proposition 65**

This product does not contain any chemicals regulated by Proposition 65

| Chemical Name | California Proposition 65 |
|---|---------------------------|
| Dichloro[1,2-bis(diphenylphosphino)ethane]nickel(II) - 14647-23-5 | Carcinogen |

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations

| Chemical Name | New Jersey | Massachusetts | Pennsylvania |
|---|------------|---------------|--------------|
| Dichloro[1,2-bis(diphenylphosphino)ethane]nickel(II) 14647-23-5 | X | N/A | X |

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

Issue Date

19-Nov-2025

Revision Note

No information available

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The

information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet