

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: 1,3-Bis(diphenylphosphino)propane nickel(II) dichloride

Synonym(s): 1,3-Bis(diphenylphosphino)propane nickel dichloride

Product Code: 5981

General Use: Catalyst

Product Description: Yellowish red solid

MSDS Number: 5981US070601

MANUFACTURER: Company Name: NICHIA CORPORATION

Address: 491 Oka, Kaminaka-cho, Anan-shi, TOKUSHIMA 774-860 JAPAN

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IMPORTER/DISTRIBUTOR ESTABLISHED in Japan

(Company name) NICHIA CORPORATION TOKYO SALES OFFICE

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108-0014, JAPAN

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EMERGENCY TELEPHONE NUMBER: +81-3-3456-3784

2. COMPOSITION/ INFORMATION ON INGREDIENTS

Chemical Composition:

Component	Chemical name	Wt%	CAS Registry#
$[(C_6H_5)_2PCH_2CH_2CH_2P(C_6H_5)_2]NiCl_2$	1,3-Bis(diphenylphosphino)propane nickel dichloride	≥ 97.0	15629-92-2

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Causes eye and skin burns. Causes digestive and respiratory tract burns. Cancer hazard. Harmful if swallowed, inhaled, or absorbed through the skin. Moisture sensitive. The toxicological properties of this material have not been fully investigated.

POTENTIAL HEALTH EFFECTS:

Inhalation: Harmful if inhaled. May cause allergic respiratory reaction. Causes chemical burns to the respiratory tract.

Eye: Causes eye irritation.

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Skin: Harmful if absorbed through the skin. Causes skin burns. Causes "nickel itch" which is a dermatitis resulting from sensitization to nickel, which is characterized by skin eruptions, followed by discrete ulcers that may discharge and become crusted, or by eczema.

Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns.

POTENTIAL ENVIRONMENTAL EFFECTS: No information available.

4. FIRST AID MEASURES

INHALATION: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

EYE: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

SKIN: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

INGESTION: If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

PROTECTION TO FIRST-AIDERS: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

EXTINGUISHING MEDIA: Use water spray, dry chemical, carbon dioxide, or chemical foam.

FIREFIGHTING INSTRUCTIONS: Wear full fire fighting turn-out gear (full-bunker gear) and respiratory protection (self-contained breathing apparatus).

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6. ACCIDENTAL RELEASE MEASURES

LAND SPILL: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section.

WATER SPILL: Dike spill. Prevent material from entering sewers, waterways, or low areas.

7. HANDLING AND STORAGE

HANDLING: Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Use only in a chemical fume hood. Discard contaminated shoes.

STORAGE: Store in a cool, dry place. Keep container closed when not in use. Store in a tightly closed container. Keep under a nitrogen blanket.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING LIMIT VALUE:

OSHA PEL : 1 mg/m³ (as Ni) (listed under Nickel soluble compounds).

ACGIH(2007): 1.5 mg/m³ (as Ni)

EXPOSURE CONTROLS:

OCCUPATIONAL EXPOSURE CONTROLS

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Personal Protection

Respiratory Protection: Follow the OSHA respirator regulations found in 29 CFR 1910.134 .

Always use a NIOSH approved respirator when necessary.

Eye Protection: Safety glasses are required.

Skin Protection: Protective gloves are recommended.

Environmental Exposure Controls: No information found.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State: Solid

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Color: Yellowish red

Odor: Not available.

pH: Not available.

Melting Point: 213 deg C (Decompose)

Flash Point: Not available.

Flammability: Not available.

Specific Gravity: Not available.

Solubility in Water: may decompose

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Not available.

STABILITY: Moisture sensitive.

MATERIAL TO AVOID: Strong oxidizing agents.

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS: Hydrogen chloride,
phosphine, carbon monoxide, oxides of phosphorus, carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity: No information available.

Eye Irritation: No information available.

Skin Irritation: No information available.

Sensitization: No information available.

Mutagenicity: No information available.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA: No information available.

PERSISTENCE AND DEGRADABILITY: No information available.

BIOACCUMULATIVE POTENTIAL: No information available.

13. DISPOSAL CONSIDERATIONS

Comply with all federal, state and local regulations.

Do not dump this material into sewers, on the ground or into any body of water.

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14. TRANSPORT INFORMATION

US DEPARTMENT OF TRANSPORTATION (DOT)

Hazardous Materials: Not Applicable

SEA TRANSPORT

IMDG

Class: Not Applicable.

Packing Group(PG): Not Applicable.

UN Number: Not Applicable.

Proper Shipping Name: Not Applicable.

Marine Pollutant: Not Applicable.

AIR TRANSPORT

ICAO/IATA

Class: Not Applicable.

Packing Group(PG): Not Applicable.

UN Number: Not Applicable.

Proper Shipping Name: Not Applicable.

15. REGULATORY INFORMATION

OSHA STATUS: This product is hazardous under 29 CFR 1910.1200
about Ni compounds.

TSCA STATUS: This material on TSCA INVENTORY.

SARA TITLE III Section 313: Ni Compounds

Refer to any other federal, state and local regulations.

16. OTHER INFORMATION

This information is furnished without warranty, express or implied, except that it is accurate to the best knowledge of NICHIA Corporation.

It relates only to the specific product designated herein, and does not relate to use in combination with any other material or process. NICHIA Corporation assumes no legal responsibility for use or reliance upon this information.