

# SAFETY DATA SHEET

SDS No.1050-12100

Revised date August 27, 2024

1/6 page

## 1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : Nickel catalyst  
NAME OF SUPPLIER : GL Sciences Inc.  
ADDRESS : 22-1 Nishishinjuku 6-chome Shinjuku-ku Tokyo 163-1130, Japan  
CHARGE SECTION : International Sales Section  
TELEPHONE No. : +81-3-5323-6620  
FACSIMILE No. : +81-3-5323-6621  
PRODUCT No. : 1050-12100, 5010-  
SDS No. : 1050-12100  
Research use only.

## 2. HAZARDS IDENTIFICATION

GHS CLASSIFICATION : Self-heating substances : Category 1  
Eye damage/irritation : Category 2  
Respiratory sensitization : Category 1  
Skin sensitization : Category 1  
Carcinogenic : Category 1A  
Specific target organ toxicity (Single exposure) : Category 1<respiratory system>  
Category 2< systemic toxicity>  
Specific target organ toxicity (Repeated exposure) : Category 1<respiratory system>  
Hazardous to the aquatic environment - Acute hazard : Category 1  
Hazardous to the aquatic environment - Chronic hazard : Category 1

HAZARDS SYMBOL :



SIGNAL WORD : Danger

HAZARD STATEMENTS :

H251 Self-heating; may catch fire  
H317 May cause an allergic skin reaction  
H319 Causes serious eye irritation  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H350 May cause cancer  
H370 Causes damage to organs Respiratory system,Kidneys  
H371 May cause damage to organs Systemic toxicity  
H372 Causes damage to organs through prolonged or repeated exposure Respiratory organs,Immune system,Kidneys  
H410 Very toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENTS :

P202 Do not handle until all safety precautions have been read and understood.  
P235 Keep cool.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P284 Wear respiratory protection.  
P302+P352 IF ON SKIN: Wash with plenty of water/...

P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P314	Get medical advice/attention if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+313	If eye irritation persists: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/...
P362+P364	Take off contaminated clothing and wash it before reuse.
P391	Collect spillage.
P405	Store locked up.
P407	Maintain air gap between stacks or pallets.
P410	Protect from sunlight.
P420	Store separately.
P501	Dispose of contents/container in accordance with all applicable regulations.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL IDENTITY	: Mixture
COMMON CHEMICAL NAME	: Nickel catalyst
SYNONYMS	: - - -

CHEMICAL NAME	CONTENT	CHEMICAL FORMULA	CAS RN	TSCA INVENTORY	EINECS No.
Nickel	17~23%	Ni	7440-02-0	Listed	231-111-4
Nickel monoxide	34~42%	NiO	1313-99-1	Listed	215-215-7
Silica gel	24~28%	SiO <sub>2</sub>	7631-86-9	Listed	231-545-4
Copper (II) oxide	2%	CuO	1317-38-0	Listed	215-269-1
Chromium (III) oxide	2%	Cr <sub>2</sub> O <sub>3</sub>	1308-38-9	Listed	215-160-9
Other	6~7%	—	—	—	—
Water	3.5~7.5%	H <sub>2</sub> O	7732-18-5	Listed	231-791-2

## 4. FIRST AID MEASURES

GENERAL ADVICE	: Wash off immediately with soap and plenty of water. In the case of respirable dust, use self-contained breathing apparatus and dust impervious protective suit. Use personal protective equipment.
INHALATION	: Move victim to fresh air. If breathing is difficult, give oxygen. If irritation persists, consult a physician.
SKIN CONTACT	: Remove contaminated clothes and shoes, rinse skin with plenty of water or shower. Use soap to help assure removal. If irritation persists, consult a physician.
EYE CONTACT	: Remove any contact lenses at once. Flush eyes well with flooding large amounts of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a physician. Never rub your eyes.
INGESTION	: Rinse mouth, give plenty of water to dilute the substance. Do not induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician.

## 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA	: Powder, foam (alcohol foam), carbon dioxide, water spray.
FIRE & EXPLOSION HAZARDS	: Toxic and irritating dust, fumes or smoke may be emitted.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS	: Fireman should wear normal protective equipment (full bunker gear) and positive-pressure self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

- PERSONAL PRECAUTIONS : Remove ignition sources and ventilate the area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid raising dust and avoid contact with skin and eyes.
- ENVIRONMENTAL PRECAUTIONS : Prevent spills from entering sewers, watercourses or low areas.  
Comply with local disposal regulations.
- METHODS FOR CLEANING UP : Do not touch spilled material without suitable protection. After material is completely picked up, wash the spill site with soap and water and ventilate the area. Pull all wastes in a plastic bag for disposal and seal it tightly. Remove, clean, or dispose contaminated clothing.

7. HANDLING AND STORAGE

- HANDLING : In case of insufficient ventilation, wear suitable respiratory equipment.  
Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Handle this product with suitable protection.  
After using this product, dispose of contents/container in accordance with all applicable regulations and appropriate ways.
- STORAGE : Store away from sunlight, heat and all ignition sources in well-ventilated dry place. Keep container tightly closed.
- INCOMPATIBLE PRODUCTS : Strong oxidizers, acids, reductants.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

- ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits.  
Use adequate ventilation.
- VENTILATION : Local Exhaust ; Necessary, Mechanical(General) ; Recommended
- CONTROL PARAMETERS

CHEMICAL NAME	ACGIH	OSHA PEL	NIOSH REL
Silica gel	Inhalable dust TWA=10mg/m <sup>3</sup> , Respirable dust TWA=3mg/m <sup>3</sup> (as PNOS)	TWA 20mppcf (80mg/m <sup>3</sup> /%SiO <sub>2</sub> ) (as amorphous silica)	TWA 6mg/m <sup>3</sup> (as amorphous silica)

PERSONAL PROTECTION

- RESPIRATORY PROTECTION : Use respirators approved under appropriate government standards and follow all regulations.
- HAND PROTECTION : Chemical resistant gloves
- EYE PROTECTION : Safety glasses(goggles)
- SKIN PROTECTION : Protective clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

- PHYSICAL STATE : Solid
- COLOUR : Black powder
- ODOR : Odorless
- MELTING POINT / FREEZING POINT : No data available
- BOILING POINT OR INITIAL BOILING POINT AND BOILING RANGE : No data available
- FLAMMABILITY : No data available
- LOWER AND UPPER EXPLOSION LIMIT / FLAMMABILITY LIMIT : No data available
- FLASH POINT : No data available
- AUTO-IGNITION TEMPERATURE : No data available
- DECOMPOSITION TEMPERATURE : No data available
- pH : No data available
- KINEMATIC VISCOSITY : Not applicable
- SOLUBILITY : Insoluble in water
- PARTITION COEFFICIENT : No data available
- n-octanol/water (log value) : No data available
- VAPOR PRESSURE : No data available

**DENSITY AND/OR RELATIVE DENSITY**

	: 1.0 kg/L
RELATIVE VAPOUR DENSITY	: Not applicable
PARTICLE CHARACTERISTICS	: Granular

**10. STABILITY AND REACTIVITY**

REACTIVITY	: Stable under recommended storage conditions.
CHEMICAL STABILITY	: May oxidize and generate heat when released in air for long periods of time.
Hazardous Reactivity	: Stable under suitable storage conditions.
CONDITION TO AVOID	: High temperature, high pressure, and hazardous gas atmosphere.
INCOMPATIBLE MATERIALS	: No data available
HAZARDOUS DECOMPOSITION PRODUCTS	: No data available

**11. TOXICOLOGICAL INFORMATION**

ACUTE TOXICITY -oral-	: The classification is not possible in this product.
ACUTE TOXICITY -dermal-	: The classification is not possible in this product.
ACUTE TOXICITY -inhalation-	: The classification is not possible in this product.
SKIN CORROSION/IRRITATION	: The classification is not possible in this product.
EYE DAMAGE/EYE IRRITATION (Silica gel)	: This product is classified in Category 2. : In an eye irritation test (OECD TG 405) using rabbits, it was reported that application of precipitated silica (CAS No.: 112926-00-8) did not cause irritation (SIDS (2006), ECETOC JACC (2006)). There are several reports of studies in which precipitated silica or amorphous silica (CAS No.: 112945-52-5) in different forms were applied to rabbits and no eye irritation was reported, as well as reports of mild conjunctivitis, mild to moderate conjunctival redness, and corneal opacity, but all symptoms were reported to be recoverable. However, all symptoms were reported to be recoverable (SIDS (2006), ECETOC JACC (2006)).
SKIN SENSITIZATION (Nickel)	: This product is classified in Category 1. : Human cases of eczema (NITE Initial Risk Assessment ver. 1.0, No. 69, 2008; EHC No. 108, 1991) and contact dermatitis (NITE Initial Risk Assessment ver. 1.0, No. 69, 2008; EHC No. 108, 1991; IARC vol. 49, 1990), positive reactions in patch tests (NITE Initial Risk Assessment ver. 1.0, No. 69, 2008; EHC No. 108, 1991) have been reported.
(Nickel oxide)	: EU classification R43 and is classified as a skin sensitizer by the DFG (MAK/BAT No. 43 (2007)).
(Chromium oxide)	: It has been reported that application of trivalent chromium to guinea pigs resulted in sensitization (EHC 61 (1988)). It is further stated that although trivalent chromium can function as a haptenic antigenic determinant, the sensitizing capacity of trivalent chromium salts is low due to their weak penetration into the skin (CICAD 76 (2009)).
GERM CELL MUTAGENICITY	: The classification is not possible in this product.
CARCINOGENICITY (Nickel oxide)	: This product is classified in Category 1A. : It is classified as Group 1 by IARC (IARC 49 (1990)), A1 by ACGIH (ACGIH (2001)), and Carc.Cat.1 by EU (EU-Annex I (2009)).
(Silica gel)	: The substance group indicated by this CAS number is silica (SiO <sub>2</sub> ), which includes all forms of silica (ECETOC JACC No. 51 (2006)). This substance group includes crystalline silica and its carcinogenicity classification result is considered applicable.
REPRODUCTIVE TOXICITY	: The classification is not possible in this product.
SPECIFIC TARGET ORGAN TOXICITY - single exposure - (Nickel)	: This product is classified in Category 1. : In an inhalation (single intratracheal administration) exposure study in male rats, it caused damage to alveolar epithelial cells at doses of 0.5 mg or higher (NITE Initial Risk Assessment ver. 1.0, No. 69 (2008)).

(Copper oxide) : In humans, inhalation of fine particulate dust of this material has been described as potentially causing sneezing, coughing, digestive disturbances and fever (DFGOT vol. 22 (2004)). Acute inhalation exposure to copper fumes during the process of copper welding has also been reported to cause metal fume fever with high fever, chills, headache, dry mouth and throat, abnormal taste, nausea, shortness of breath, and muscle pain (DFGOT vol. 22 (2004), Ministry of Environment Risk Assessment Vol. 13 (2015), HSDB ( Accessed on September 2016)).

SPECIFIC TARGET ORGAN TOXICITY - repeated exposure -

(Nickel) : This product is classified in Category 1.  
 : In a 21-month inhalation exposure study in rats, pleurisy, pneumonia, congestion, and edema were observed at a dose of 15 mg/m<sup>3</sup> (0.015 mg/L), which corresponds to Category 1 in the guidance (CaPSAR (1994)). In a 6-month inhalation exposure study in rabbits, pneumonia occurred at 1 mg/m<sup>3</sup> (0.001 mg/L). In the EU classification, it is classified as T; R48/23.

(Nickel oxide) : In animal studies, granulomatous inflammation of the lungs and hyperplasia of bronchial and mediastinal lymph nodes were observed at 0.004 mgNi/L, which is equivalent to guidance category 1, in a 13-week inhalation study in rats (ATSDR (2005)). In a 104-week inhalation exposure study in rats, squamous cell growth of alveoli, hyperplasia of alveoli, and fibrosis were observed at 0.0006 mg/L, which corresponds to category 1 in the guidance (NTP TR-451 (1996)).

(Silica gel) : In humans, silicosis has been reported with quartz and cristobalite. Fibroplastic properties have also been reported in experimental animals with quartz and cristobalite, in addition to reports of autoimmune disease, chronic renal disease and asymptomatic renal degeneration with quartz, and regression fever such as metal fume fever with fused silica (ACGIH (7th, 2006)).

(Chromium oxide) : In humans, it has been reported that in a group of workers engaged in the production of chromium oxide at a factory in Germany, there was a mild increase in the frequency of acute respiratory illness, but the symptoms were not chronic and no abnormal findings in the respiratory system were found in lung function, chest X-ray, blood tests, etc. in a group of workers who had worked at the factory for more than 10 years. (Ministry of the Environment, Risk Assessment Volume 8 (2010)).

ASPIRATION HAZARD : This is not possible in this product.

12. ECOLOGICAL INFORMATION

Hazardous to the aquatic environment - Acute hazard –

(Copper oxide) : This product is classified in Category 1.  
 : LC50 for Pseudokirchneriella subcapitata (time unknown) = 3.1 ppb (U.S. EPA: RED, 2009).

Hazardous to the aquatic environment - Chronic hazard –

(Copper oxide) : This product is classified in Category 1.  
 : Inorganic compound, environmental fate unknown, NOEC (time unknown) for algae (Pseudokirchneriella subcapitata) = 0.2 ppb (US EPA: RED, 2009).

BIODEGRADABILITY : No data available

BIOACCUMULATIVE POTENTIAL : No data available

MOBILITY IN SOIL : No data available

HAZARDOUS TO THE OZONE LAYER

: Not listed in Montreal Protocol list.

13. DISPOSAL INFORMATION

Dispose in a hazardous-waste site in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations (contact country, local or state environment agency for specific rules).

14. TRANSPORT INFORMATION

International Regulations

Maritime regulations : Conform to the provisions of IMO.  
 UN No. : 3190  
 Proper Shipping Name : SELF-HEATING SOLID, INORGANIC, N.O.S.  
 Class : 4.2  
 Packing Group : II  
 Marine Pollutant : Not applicable  
 Aviation regulations : Conform to the provisions of ICAO/IATA.  
 UN No. : 3190

---

Proper Shipping Name : Self-heating solid, inorganic, n.o.s.  
Class : 4.2  
Packing Group : II

---

**15. REGULATORY INFORMATION**

For classification and labeling of chemicals in accordance with the applicable rules and regulations in the EU or each country, refer to GHS classification of this product (See Section 2).

US REGULATION : OSHA HCS 2012/29 CFR 1910.1200

EU REGULATION : CLP Regulation ((EC) No. 1272/2008)

---

**16. OTHER INFORMATION****NOTICE:**

The information contained in the SDS description is applicable exclusively to the chemical substance identified herein and for its intended use as an analytical reference standard or reagent and to the unit quantity intended for that purpose. The information does not relate to, and may not be appropriate for, any application or larger quantity of the substance described. Our products are intended for the use by individuals possessing sufficient technical skill and qualification on use the material potential hazardous chemical. Accordingly, no representation or warranty, express or implied, with respect to merchantability and fitness for a particular purpose is made with respect to the information contained herein.

**Attention:**

This product in terms of chemical identity and the unit amount provide is intended for use in chemical analysis and not for human consumption, nor any other purpose.