

MATERIAL SAFETY DATASHEET

SECTION 1: IDENTIFICATION

- 1.1 Product Identifier : PLM-TM2
- 1.2 Other means of identification : PLM-TM2AA, PLM-TM2AB, PLM-TM2AC, PLM-TM2BA, PLM-TM2BB, PLM-TM2DA, PLM-TM2DB, PLM-TM2EA, PLM-TM2EB, PLM-TM2TA, PLM-TM2TB, PLM-TM2GA, PLM-TM2GB
- 1.3 Supplier details : INDO-MIM Private Limited
#45[P], KIADB Industrial Area,
Doddaballapur, Bangalore, India - 561203
- 1.4 Contact person : infopowders@indo-mim.com
- 1.5 Emergency Telephone number : +91 80 6141 6633/34
(with hours of operation) IST : Mon – Sat (8.00AM to 5.00PM)s

SECTION 2: HAZARDOUS IDENTIFICATION

- 2.1 GHS classification of the Substance
- Health hazards : Skin Corrosion/irritation (Category 1),
Carcinogenicity (Category 2),
Specific Target Organ Systemic Toxicity-Repeated exposure: (Category 3)
- Physical and Chemical hazards : Not Classified
- Environmental hazards : Not Classified
- In regards to physical and chemical hazards, health hazards, environmental hazards, the items not listed above are “exempt classification”, “cannot classify”, or “not applicable” at present.
- 2.2 GHS Label Elements
- Hazard Statement:
- H317 : May cause allergic dermatitis
- H351 : Suspected of causing cancer
- H373 : May cause damage to respiratory organs through prolonged or repeated exposure
- Precautionary Statement:
- [Prevention
- P201 : Obtain special instruction before use.
- P260 : Do not breathe dust/fumes/gas/mist/vapors/spray.

- P264 : Wash hands and face thoroughly after handling.
- P272 : Contaminated work clothing should not be allowed out Of the workplace.
- P280 : Wear protective gloves/protective clothing/eyes protection/face protection.
- [Emergency Response]
- P308+P313 : If exposed or concerned, Get medical advice/attention.
- P314 : Get medical advice/attention if feel unwell.
- P501 : To dispose of contents/container entrust it to a waste service company admitted by local government.

Fire Service Act

This special alloy powder has been confirmed and registered as non-hazardous by ignition test based on Fire service act No. 11 (Part 4 of Article 1 of cabinet Order No. 358). However, there is a possibility that fine particle dust would fire when it is touched.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

- 3.1 Substance/Mixture : Mixture
- General Product Description : Metallic Powder
- Alias : Alloy Powder

3.2 Chemical Name, Percent and CAS#:

Elements	%	CAS#
Nickel	15 – 20	7440-02-0
Carbon	< 1	7440-44-0
Chromium	1 – 5	7440-47-3
Molybdenum	1 – 10	7439-98-7
Vanadium	1 – 5	7440-62-2
Tungsten	1 – 10	7440-33-7
Iron	60 – 70	7439-89-6

Any concentration shown as a range is to protect the confidentiality or is due to batch variation

- Class Reference Number in the Gazette List : Not Subject
- Impurities and Stabilizing Additives : No Data
- Contribute to Classification
- Pollutant Release and Transfer Register : Not applicable
(PRTR)
- Hazard Symbol : Not harmful

3.3 Risk Phrases

- R40 : limited evidence of a carcinogenic effect
- R43 : May cause sensitization by skin contact
- R48/20 : Harmful: danger of serious damage to health by prolonged exposure through inhalation.

3.4 Safety Phrases

- S16 : Keep away from sources of ignition – No smoking
- S7/9 : Keep the container tightly closed and in a well-ventilated place
- S36/37/39 : Wear suitable protective clothing, gloves and eye/face protection

SECTION 4: FIRST AID MEASURES

- 4.1 Inhalation : If inhaled, remove to fresh air.
Get medical advice/attention if feeling well.
- 4.2 Skin Contact : Immediately remove contaminated clothing and shoes.
Wash with soap and plenty of water.
If irritation develops and persists, get medical attention.
- 4.3 Eye Contact : Flush eyes with plenty of water for at least 15 minutes.
If irritation develops and persists, get medical attention.
- 4.4 Ingestion : Immediately rinse mouth. Get medical aid immediately.
- 4.5 Anticipated Acute & Tardive symptoms : Allergy Symptoms.
- 4.6 Most important Signs and Symptoms : No data is currently available.
- 4.7 Protection for first-aid : Wear protective equipment's according to the situation.
- 4.8 Important notes for Doctor : No data is currently available.

SECTION 5: FIRE FIGHTING MEASURES

- 5.1 Suitable Extinguishing Media : Dry sand, limestone powder, dry powder and special powder against the metal powder.
- 5.2 Extinguishing media, which must not be used for safety reasons: : water and carbon dioxide (CO₂)
- 5.3 Specific Hazards : Non-dangerous. Heavy metals may be released in hazardous concentrations in the form of dust or fumes.

- 5.4 Special firefighting Procedures: : Collect contamination fire extinguishing water separately. This must not be discharged into the drains. Using proper extinguishing media water may be ineffective.
- 5.5 Protection for firefighting: : Firefighting always wears respiratory protection and protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal Precautions, Protective equipment, And emergency measures : Ensure adequate ventilation. Used personal protective equipment. Avoid contact with skin/eyes. Do not breathe vapors/dust. Remove all sources of ignition. Observe "8. Exposure controls/personal protection".
- 6.2 Environmental Precaution : Avoid runoff into sewers and drains.
- 6.3 Collection and Neutralization : Vacuum or sweep-up spills. Containment and clean-up discard collected spills in airtight containers.
- 6.4 Equipment and Methods : Prevention of secondary immediately eliminate all sources of ignition
- 6.5 Disaster : Prevent runoff into sewers and drains.

SECTION 7: HANDLING AND STORAGE

- 7.1 Handling
- Engineering controls : Refer to "Engineering Controls" of "8. Exposure controls/Personal Protection". Wear Proper Protective equipment.
- Exhaust : Use adequate general and local exhaust ventilation to maintain dust concentration levels as low as possible.
- Precaution : The product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Keep away from Heat or Flame. Pay attention to fumes because they may ignite. Take precautionary measures against static discharge.
- Avoiding contact : Refer to "10. Stability and reactivity
- 7.2 Storage
- Engineering controls : The storage area must have a fireproof structure. Prevent hazardous material penetrate into storage area. Provide proper Equipment of lighting and ventilation.

- Incompatibilities : Refer to “10. Stability and Reactivity”.
- Storage conditions : Store in a dry, cool and well-ventilated area from heat, sparks, open flames and all other sources of ignition.
- Packaging material : Use the material which not penetrate any hazardous material for the container.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Concentration and working environment assessment criteria: No Data Exposure Limits:

- Mn : TLV-TWA: 0.2mg/m³ (ACGIH)D
- Ni : TLV-TWA: 1.5mg/m³ (ACGIH)(As inhalable fraction).....2B
- Cr : TLV-TWA: 0.5mg/m³ (ACGIH)A4
- Mo : TLV-TWA: 3mg/m³ (ACGIH)
- Co : TLV-TWA: 0.02mg/m³ (ACGIH)A3
- D : Not suspected as a human carcinogen
- 2B : Possible human carcinogen
- A4 : Not classifiable as a human carcinogen
- A3 : Confirmed animal carcinogen with unknown relevance to humans.
- Engineering control: : Not required

8.2 Protective equipment:

- Respiratory Protection : In case ventilation is not adequate, wear a P2 filter respirator for harmful particles.
- Hand Protection : Wear rubber gloves to meet the regulation of “EU Directive 89/689/EEC” and “EN 374”.
- Eye Protection : Wear Safety goggles meet “EN 166”.
- Skin and Body Protection : Wear suitable clothing with long sleeves.
- Health measures : Replace work clothing every day.

Provide an eyewash unit near the working area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Silver-gray, Powder
- Odor : Odorless
- PH : Not applicable

Melting Point	:	Not available
Boiling Point	:	Not available
Flash Point	:	Not available
Ignition Point	:	Not available
Range of Explosion	:	Not available
Vapour Pressure	:	Not available
Specific Gravity	:	7.5~9.3(g/cm ³)
Solubility	:	Insoluble
Aqueous Solubility	:	Insoluble
Octanol/water	:	Not applicable
Partition coefficient	:	
Decomposition Temperature"	:	Not available
Odor threshold	:	Not available
Evaporation Rates	:	0(%)
Combustibility	:	Not available
Other Physical & Chemical Properties	:	Not available

SECTION 10: STABILITY AND REACTIVITY

Stability	:	Not available
Hazardous Reactivity	:	Not available
Condition to avoid	:	High-Temperature state in the dusty atmosphere
Incompatibilities	:	Oxidizing agents (against Si).
Hazardous Decomposition products	:	No data in general use

SECTION 11: TOXICOLOGICAL INFORMATION

Not available

Acute Toxicity:

Fe: Rat Oral LD50= 30000mg/kg

Mn: Rat Oral LD50= 9000mg/kg

Ni: Rat Oral LD50= 9000mg/kg (Particle size<1mm)

Si: Rat Oral LD50= 3160mg/kg

Skin Corrosion/Irritation	:	Mild Irritation
Serious Eye danger/Eye Irritation	:	The product is not classified as an eye irritant, however high dust levels in the air may cause eye irritation. Nickel: may result in allergic lung sensitization reactions
Respiratory/Skin Sensitizing Potential	:	Nickel: Allergic skin sensitization reactions are the most frequent effect of exposure.
Mutagenicity	:	No information found

Carcinogenicity	:	H351: Suspected of causing cancer
Reproductive effects	:	No information found
Specific target organ systemic Toxicity (Single Exposure)	:	No information found
Specific target organ systemic Toxicity (Repeated Exposure)	:	H372: If inhaled, causes damage to the organ through prolonged or repeated exposure
Aspiratory Toxicity	:	No information found
Other Studies	:	No information found

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	:	No information found
Environmental residue/ biodegradability	:	No information found
Bioaccumulation	:	No information found
Mobility in Soil	:	No information found
Other studies	:	No information found

SECTION 13: DISPOSAL CONSIDERATIONS

Residual wastes	:	Dispose of in accordance with local regulations.
Used Containers	:	Dispose of containers as scrap.

SECTION 14: TRANSPORT INFORMATION

International regulation	:	Not Regulated as per IATA
Domestic regulation	:	Not Regulated as per IATA
Special safety measures	:	Not Regulated as per IATA
Emergency response guide book number	:	Not Regulated as per IATA

SECTION 15: REGULATOR INFORMATION

Chemical Substances Control Law
PRTP (Pollutant Release and Transfer Register)
Fire Service Act No.11 (Part 4 of Article 1 of Cabinet Order No. 358)

SECTION 16: ADDITIONAL INFORMATION

References	:	Ministry of Economy, Trade and Industry: GHS Guidance
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Advanced Information Centre of Safety and Health:
Directive 67/548/EEC
Chemical Substance Information System (kis-net)
Safety management of communication of chemicals-
Learning about MSDS and GHS

[ATTENTION]

The Information above is believed to be accurate and represent the best information currently available to us. However, there is a possibility that the information is not sufficient. Therefore, handle it with great care. Additionally, the safety measures above are only for general handling. In special cases, handle prevention and safety measures that are suitable for your purpose and condition.