**OCHNOLOGY SOLUTION PVT. LTD**
**Website:** www.ochnology.com
**Tel:** +91 9286823642/43
**Address:** B-153, Sector-4 Defence Colony, Dehradun, Uttarakhand, India – 248001
**E-Mail:** projects@ochnology.com, bd@ochnology.com

# Material Safety Data Sheet (MSDS / SDS)

## Iron Ore Pellets – 62% Fe Grade

## SECTION 1: Identification

| | |
|---|---|
| **Product Name** | Iron Ore Pellets, Agglomerated Iron Oxide (Primarily Hematite) |
| **Synonyms** | Iron Ore Pellets, Hematite Pellets, Iron Ore Pellets (62% Fe Grade) |
| **CAS No.** | 1309-37-1 (Iron(III) Oxide/Hematite, primary component) |
| **Recommended Use** | Blast furnace burden material and DRI/sponge iron production feedstock |
| **Manufacturer / Supplier** | Ochnology Solution Pvt. Ltd., B-153, Sector-4 Defence Colony, Dehradun, Uttarakhand, India – 248001 |
| **Telephone** | +91 9286823642/43 |
| **Email** | projects@ochnology.com, bd@ochnology.com |

## SECTION 2: Hazard(s) Identification

**GHS Classification: Not classified as hazardous under GHS for acute health or environmental hazards based on available data. May contain crystalline silica; may cause mechanical irritation to eyes and respiratory tract as a nuisance dust if the pellets are crushed or degrade to fines.**

**Signal Word: None (not classified) – general dust-handling precautions apply; crystalline silica caution applies (see below)**

**Hazard Statements:**

- Not classified as a hazardous substance or mixture under GHS/CLP for acute health or environmental hazards based on available data
- May contain trace to moderate crystalline silica ($SiO_2$ content up to ≈5.0% per product specification) – prolonged inhalation of respirable crystalline silica dust is associated with silicosis and is classified by IARC as Group 1 (carcinogenic to humans)
- May cause mechanical irritation to eyes and respiratory tract as a nuisance dust, primarily if pellets degrade to fines or are further processed

**Precautionary Statements:**

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- P264 – Wash hands thoroughly after handling
- P271 – Use only outdoors or in a well-ventilated area
- P280 – Wear protective gloves/eye protection
- P284 – Wear respiratory protection where dust generation is significant (e.g. transfer, crushing, screening)
- P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes; remove contact lenses if present and easy to do; continue rinsing

## SECTION 3: Composition / Information on Ingredients

| Component | CAS No. | Concentration (w/w) |
|---|---|---|
| Iron Oxide ($Fe_2O_3$, as hematite – agglomerated pellet form) | 1309-37-1 | ≈ 62% Fe equivalent |
| Silica ($SiO_2$), Alumina ($Al_2O_3$), Binder (e.g. bentonite) and other residual materials | – | < 8% (combined) |

## SECTION 4: First-Aid Measures

**Eye Contact** — Rinse with plenty of water for several minutes to remove dust particles. Remove contact lenses if present. Seek medical attention if irritation persists.

**Skin Contact** — Wash with soap and water. Generally non-irritating; seek medical attention if irritation develops.

**Inhalation** — Move to fresh air. If coughing or respiratory discomfort from dust persists, seek medical attention. Repeated significant exposure to respirable dust from this product should be medically evaluated given possible crystalline silica content.

**Ingestion** — Rinse mouth with water. Not expected to be harmful in small amounts; seek medical attention if a large quantity is ingested or discomfort occurs.

## SECTION 5: Fire-Fighting Measures

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- Non-flammable, non-combustible agglomerated mineral product; does not itself burn or support combustion
- No specific fire or explosion hazard associated with this product
- Suitable extinguishing media: use media appropriate to the surrounding fire

## SECTION 6: Accidental Release Measures

- Fines generated from pellet degradation during handling should be managed to avoid dust generation – use wet suppression or vacuum with HEPA filtration where practical
- Sweep or collect spilled pellets/fines into suitable containers for reuse or disposal
- Spilled material can create a slip/rolling hazard on hard floors – clean promptly
- Wear appropriate PPE (dust mask, goggles) during clean-up of large spills

## SECTION 7: Handling and Storage

- Minimise repeated handling/rehandling to reduce pellet degradation and consequent fines/dust generation
- Where this product is crushed, ground or otherwise processed by the buyer, follow applicable respirable crystalline silica exposure regulations (e.g. OSHA Respirable Crystalline Silica Standard) given the SiO2 content of this product
- Store in a covered or designated open stockyard away from contamination
- Segregate different grades to avoid mix-up during storage and loading

## SECTION 8: Exposure Controls / Personal Protection

| | |
|---|---|
| **Occupational Exposure Limits** | OSHA PEL / ACGIH TLV for iron oxide dust/fume (as Fe2O3): 5 mg/m³ (respirable, 8-hr TWA). If respirable crystalline silica is confirmed present, the applicable silica PEL (e.g. OSHA 50 µg/m³ respirable, 8-hr TWA) takes precedence – confirm via batch-specific silica testing for dry-processing use |
| **Engineering Controls** | Wet suppression and/or local exhaust ventilation at dust-generating process steps, particularly where pellets are crushed or degrade to fines |
| **Eye/Face Protection** | Safety glasses or goggles recommended in dusty conditions |

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| | |
|---|---|
| **Hand Protection** | General-purpose work gloves sufficient for routine handling |
| **Respiratory Protection** | Dust mask (N95 or equivalent) recommended in dusty conditions; higher-grade respiratory protection (e.g. P100) recommended for crushing/grinding operations given possible crystalline silica content |

## SECTION 9: Physical and Chemical Properties

| Property | Unit | Value |
|---|---|---|
| Appearance | – | Grey-brown to black hard, round pellets (8–16mm) |
| Odour | – | Odourless |
| Melting Point | °C | ≈ 1,560 – 1,600 (hematite) |
| Density | g/cm³ | ≈ 4.9 – 5.3 |
| Solubility in Water | – | Insoluble |
| Flash Point | – | Not applicable (non-combustible inorganic solid) |

## SECTION 10: Stability and Reactivity

- Stable under normal conditions of storage, handling and use
- Chemically inert under ambient conditions; more physically robust than raw fines due to the induration (firing) process, reducing dust generation in normal handling
- Incompatible materials: strong reducing agents (relevant only at high process temperatures, not a room-temperature hazard)
- Hazardous decomposition products: none under normal conditions

## SECTION 11: Toxicological Information

- Low acute oral and dermal toxicity based on published data for iron oxide minerals

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- May contain crystalline silica (see Section 2); relevant primarily where the buyer crushes, grinds, or otherwise generates respirable dust from this material
- Pellet form generates substantially less airborne dust than raw fines under normal handling, given its bound, agglomerated structure
- Not classified as carcinogenic (for the iron oxide component itself), mutagenic, or toxic to reproduction based on available information

## SECTION 12: Ecological Information

- Not classified as hazardous to aquatic organisms under GHS criteria; iron oxide is chemically inert and insoluble
- No significant bioaccumulation potential
- Avoid unnecessary large-scale release to waterways as general environmental good practice

## SECTION 13: Disposal Considerations

- Dispose of product in accordance with local, state and national regulations
- Not classified as hazardous waste under standard criteria
- Recoverable material – typically reused/recycled rather than disposed of, given its value as an iron unit source

## SECTION 14: Transport Information

| | |
|---|---|
| **UN Number** | Not applicable – not classified as Dangerous Goods for chemical hazard purposes |
| **IMSBC Code Classification** | Group C – cargo not liable to liquefy and not otherwise chemically hazardous, given the bound/agglomerated pellet form and larger particle size |
| **Proper Shipping Name** | Iron Ore Pellets (bulk solid cargo) |
| **Packing Group** | Not applicable (bulk cargo) |
| **Environmental Hazards** | None identified under standard transport classification criteria |

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## SECTION 15: Regulatory Information

- Iron oxide is widely listed on major chemical inventories (TSCA, REACH, ECL, etc.) as an existing/registered substance
- Maritime transport: unlike raw iron ore fines, indurated iron ore pellets are classified under the IMSBC Code as a Group C cargo (not liable to liquefy) due to their bound, agglomerated structure and larger particle size – the cargo liquefaction precautions applicable to fines do not apply to properly indurated pellets
- Buyers/importers should confirm current IMSBC Code classification status for their specific shipment, particularly if a significant proportion of fines/degraded material is present in the cargo

## SECTION 16: Other Information

**Revision Date: 18 July 2026**

This SDS has been compiled based on general industry data and knowledge for Iron Ore Pellets products of this type as commercially supplied. It is intended as a general handling and safety guide and does not replace a shipment-specific SDS or professional IMSBC Code compliance review where required.

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