

## Technical Data Sheet (TDS)

### 1. Product Overview

- Product Name: Iron(III) Oxide
- English Name: Iron(III) Oxide
- CAS Number: 1309-37-1
- Formula: Fe<sub>2</sub>O<sub>3</sub>
- Molecular Weight: 159.69 g/mol
- Product Characteristics: High-purity red-brown fine powder, odorless, chemically stable. Excellent tinting strength, heat resistance, and weather resistance. Insoluble in water, compatible with most organic and inorganic materials.

### 2. Technical Specifications

Item	Specification
Appearance	Red-brown fine powder
Purity (Fe <sub>2</sub> O <sub>3</sub> )	≥ 99.0%
Moisture Content	≤ 0.5%
Heavy Metals (Pb)	≤ 0.001%
Heavy Metals (As)	≤ 0.0005%
Fe Content	69.5-70.5%
Water Insoluble Matter	≤ 0.1%
Acid Insoluble Matter	≤ 0.05%
Particle Size	1-10 μm
Heat Resistance	≥ 1200°C (no decomposition)
Tinting Strength	≥ 95% (relative to standard sample)

### 3. Product Advantages

- High purity and consistent quality ensure stable performance.
- Excellent tinting strength and color fastness.
- Good heat and weather resistance for outdoor applications.
- Non-toxic and environmentally friendly (meets cosmetic and food contact standards).
- Wide compatibility with paints, plastics, ceramics, and other materials.

### 4. Application Fields

- Paints & Coatings: Architectural coatings, industrial coatings, wood coatings, anti-corrosion coatings.
- Plastics & Rubber: Colorant for PE, PP, PVC, rubber products.
- Ceramics & Glass: Glaze colorant, glass pigment (red/brown shade).
- Metallurgy: Raw material for ironmaking, magnetic materials production.
- Cosmetics: Colorant for lipsticks, eye shadows, blushes (cosmetic grade).
- Other: Printing inks, construction materials (tiles, concrete), fertilizer additives.



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### 5. Usage Methods

- Paints: Add 5-20% (mass ratio) to paint base, stir evenly.
- Plastics: Mix 3-10% with plastic resin, extrude or inject mold.
- Ceramics: Add 2-8% to glaze slurry, spray or dip coating before firing.
- Optimal Conditions: Use at 20-30°C; avoid mixing with strong reducing agents.

### 6. Packaging & Storage

- Packaging Specifications: 10 kg/bag (plastic-lined kraft bag), 25 kg/drum (HDPE), 1000 kg/IBC tote.
- Storage Conditions: Store in cool, dry, well-ventilated warehouse. Avoid moisture and direct sunlight. Temperature  $\leq 30^{\circ}\text{C}$ .
- Shelf Life: 36 months (unopened).
- Transportation: Handled as non-dangerous goods; avoid collision and moisture.

### 7. Safety & Protection

- Wear dust mask, protective gloves, and safety goggles during handling.
- Avoid dust inhalation and eye contact; rinse immediately if contact occurs.
- Keep away from strong reducing agents.

### 8. Quality Assurance

- Manufactured under ISO 9001 quality management system.
- Cosmetic-grade products meet FDA and EU cosmetic regulations.
- Each batch accompanied by COA.

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