

BABHANIYA OVERSEAS OPC PVT LTD

PREMIUM INDUSTRIAL & CONSTRUCTION MATERIALS EXPORTER

TECHNICAL DATA SHEET (TDS)

Product Name:	Zircon Flour / Zirconium Silicate Powder	TDS Ref No:	BO/ZF/325/REV-01
Grade:	Premium 325 Mesh Standard	Date of Issue:	June 22, 2026
HSN Code:	2615.10.00	CAS No:	10101-52-7

PRODUCT DESCRIPTION

Our Zircon Flour is a high-purity Zirconium Silicate powder produced by precision-milling premium grade natural Zircon sand. It is characterized by its exceptionally high melting point, low thermal expansion coefficient, excellent chemical inertness, and superior opacity characteristics. It serves as a vital component in high-end ceramic manufacturing and extreme-temperature metallurgical casting applications.

1. CHEMICAL COMPOSITION (BASED ON XRF ANALYSIS)

CHEMICAL COMPONENT	FORMULA	GUARANTEED SPECIFICATION	TYPICAL VALUE (XRF)
Zirconium Dioxide	ZrO ₂	64.50% Min	64.83%
Hafnium Dioxide	HfO ₂	0.50% - 0.80%	0.65%
Total (Zr + Hf)	ZrO ₂ + HfO ₂	65.00% Min	65.48%
Silicon Dioxide (Total)	SiO ₂	32.50% Max	31.79%
Aluminium Oxide	Al ₂ O ₃	2.50% Max	2.04%
Titanium Dioxide	TiO ₂	0.65% Max	0.59%
Iron Oxide	Fe ₂ O ₃	0.10% Max	0.10%
Loss on Ignition	LOI	0.10% Max	0.00%

2. PHYSICAL & THERMAL PROPERTIES

PHYSICAL PROPERTY / PARAMETER	STANDARD SPECIFICATION VALUE
Appearance / Physical State	Fine Powder, Off-White / Light Creamy White
Particle Size (Mesh Retention)	≤ 0.5% retention on 325 Mesh (99.5% passing)
Average Particle Size (D ₅₀)	11.5 µm – 14.0 µm
Specific Gravity / Density	4.5 – 4.7 g/cm ³
Hardness (Mohs Scale)	7.5
Melting Point	2,200°C – 2,400°C

3. KEY INDUSTRIAL APPLICATIONS

- **Ceramic Industry:** Widely used as a highly effective opacifier in ceramic glazes, sanitaryware, frits, and wall/floor tiles to provide excellent brightness, whiteness, and structural scratch resistance.
- **Foundry & Precision Casting:** Used as a primary mold wash and core coating material for investment casting to ensure an ultra-smooth surface finish on molten steel and iron components.
- **Refractories:** Actively integrated into heavy-duty kiln furniture, glass furnace bricks, and high-temperature monolithic blocks due to its zero thermal distortion.
- **Friction Materials:** Utilized as a premium hard filler in high-end automotive brake linings and friction pads.

4. PACKAGING, SHIPPING & STORAGE

- **Standard Packing:** 25 Kg or 50 Kg multi-layer PP bags with secure internal moisture-proof HDPE liners.
- **Bulk Shipment:** Individual bags packed securely into 1.0 MT or 1.25 MT heavy-duty UV-stabilized Jumbo Bags (FIBC).
- **Palletization:** Uniformly stacked on ISPM-15 compliant standard Fumigated Wooden Pallets or Plastic Pallets, complete with industrial heavy-gauge stretch wrap protection.
- **Storage Conditions:** Must be stored in a dry, tightly enclosed, and well-ventilated warehouse facility. Prevent any direct exposure to atmospheric moisture or rain water.

DISCLAIMER & REGULATORY NOTICE

The technical data and specifications presented in this sheet represent typical properties analyzed under standard laboratory conditions and are provided for informational and guidance purposes only. Since actual industrial processing conditions and end-use applications are entirely beyond our operational control, Babhaniya Overseas OPC Pvt Ltd makes no absolute warranties, express or implied, regarding product performance for specific processes. Buyers are strictly advised to conduct mandatory batch sampling and structural feasibility testing to validate suitability prior to large-scale commercial consumption.

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