

## Product Data Sheet

### Brown Fused Alumina (BFA) - Abrasive & Refractory Grade

#### Description

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b>  | Brown Fused Alumina (BFA) is a high-toughness aluminium oxide produced by fusing calcined bauxite with coke and iron filings in an electric arc furnace at high temperature. The controlled reduction process retains titanium dioxide and iron oxide in solid solution within the alumina crystal structure, giving BFA significantly greater toughness than white fused alumina (WFA) at a lower material cost. It is the most widely used abrasive grain in the bonded and coated abrasives industry, and a cost-effective alumina source for refractory applications not requiring extreme purity. |
| <b>Applications</b> | Bonded abrasives – grinding wheels for steel and high-tensile-strength metals<br>Coated abrasives – sandpaper, abrasive belts and discs<br>Sandblasting and surface-preparation media<br>Refractory castables and bricks; non-slip flooring additive and tumbling/deburring media                                                                                                                                                                                                                                                                                                                      |
| <b>Grade</b>        | Standard Commercial Grade, Al <sub>2</sub> O <sub>3</sub> Min. 95.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>CAS No.</b>      | 1344-28-1 (mixture; primary component aluminium oxide with retained titanium/iron oxide content)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

#### Key Benefits

1. High toughness from retained TiO<sub>2</sub> content in the crystal structure – outperforms WFA in heavy-duty grinding of high-tensile-strength steels
2. Cost-effective alternative to white fused alumina for applications not requiring extreme purity
3. Widely available across a full range of grit sizes (F-grade) and refractory sand/powder mesh grades
4. Good thermal shock resistance suited to refractory applications
5. Consistent hardness and toughness supporting reliable abrasive/refractory performance

## Chemical Analysis & Physical Data

### Typical Specification

| Parameter                      | Unit              | Specification                       |
|--------------------------------|-------------------|-------------------------------------|
| Al <sub>2</sub> O <sub>3</sub> | wt%               | Min. 95.0 (typical 94.0–96.0)       |
| TiO <sub>2</sub>               | wt%               | 2.5 – 3.5                           |
| Fe <sub>2</sub> O <sub>3</sub> | wt%               | Max. 0.30                           |
| SiO <sub>2</sub>               | wt%               | Max. 1.0                            |
| CaO                            | wt%               | Max. 0.4                            |
| True Density                   | g/cm <sup>3</sup> | 3.85 – 3.90                         |
| Bulk Density                   | g/cm <sup>3</sup> | 1.85 – 2.05 (grain-size dependent)  |
| Hardness (Mohs)                | –                 | ≈ 9                                 |
| Melting Point                  | °C                | ≈ 2,000                             |
| Appearance                     | –                 | Brown to dark brown granules/powder |

## Packaging

**Packaging**     25 kg / 50 kg PP Woven Bags (with liner)  
1,000 kg Jumbo Bags (FIBC)  
Bulk (bulker/hopper truck) available on request for large sand/powder orders  
Custom packaging available on request.

## Storage & Handling

1. Store in a dry, covered warehouse away from moisture and contamination
2. Keep bags sealed until point of use to prevent cross-contamination between grades
3. Segregate different size/mesh/grit grades clearly to avoid mix-up during storage and dispatch
4. Stack on pallets, away from direct ground contact
5. Use appropriate PPE (dust mask, goggles) when handling – avoid dust generation

## Quality Assurance

1. Every batch is tested against the specification above before dispatch
2. A batch-specific Certificate of Analysis (COA) accompanies each shipment, reporting Al<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub>, Fe<sub>2</sub>O<sub>3</sub> and SiO<sub>2</sub> content, and particle size distribution, against this TDS
3. COA available on request prior to shipment for buyer pre-approval
4. Third-party inspection (SGS/Intertek) can be arranged on request for regulated-market shipments

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*Disclaimer: The information provided in this document is based on our current knowledge and is intended as a general guide. Ochnology Solution Pvt. Ltd. reserves the right to modify specifications without prior notice. Buyers are advised to conduct their own testing for specific applications. A batch-specific Certificate of Analysis (COA) is available on request for each shipment.*