



ALMATIS

PREMIUM ALUMINA



Product Data

Bonite / Bonite LD

Chemical Analysis [%]		Bonite typical	Bonite LD typical
Al₂O₃		91	91
CaO		7.7	7.7
Fe₂O₃		0.08	0.08
SiO₂		0.7	0.7
Fe Magnetic		0.01	0.01
Physical properties			
Bulk Specific Gravity [g/cm³]		>3.0	<2.85
Apparent Porosity [%]		9.0	24.0
Water Absorption [%]		2.5	8.5
Phase Composition	Major	CA ₆ (CaO • 6 Al ₂ O ₃)	
	Minor	α – Al ₂ O ₃	

Available Sizes:		
3 – 6 mm	•	•
1 – 3 mm	•	•
0.5 – 1 mm	•	•
0 – 0.5 mm	•	•
– 45 micron	•	
– 20 micron	•	

All data are based upon Almatris standard test methods.
The typical properties are based upon the actual averages from production data.

Think alumina, think Almatris.

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Bonite / Bonite LD

Bonite and Bonite LD are synthetic high refractory sintered aggregates. Their major mineral phase is calcium hexaluminate, CA_6 which exhibits a unique combination of properties:

- Low solubility in iron containing slag
- High chemical resistance in alkaline environment
- High stability in reducing atmospheres, e.g. CO
- Low wettability by molten metals and slags (ferrous and non-ferrous)
- Low thermal conductivity when compared to other products with similar densities

Successful industrial scale applications in the aluminum, cement, steel and petrochemical industry prove the potential of calcium hexaluminate based refractories.

For aluminum applications Bonite provides an anti-wetting effect at elevated temperatures $>1100^{\circ}C$ where anti-wetting additives are decomposing thus losing their effect. At the same time heat losses are reduced due to the lower thermal conductivity of Bonite based refractory materials in the wear lining. In various steel applications the corrosion resistance of Bonite shows superior performance when compared to commonly used materials such as bauxite and andalusite. In addition the lower thermal conductivity of Bonite reduces heat-losses.

Cement applications require a material resistant to alkali attack. The alkali resistance of Bonite originates from its special mineralogical structure. Alkalies (Na^+ , K^+) can be incorporated into the structure without significant change of volume and the typical alkali-bursting is avoided.

The unique combination of properties makes Bonite based refractory materials the ideal choice where energy reduction is desired while providing a high safety level in an application.

The dense CA_6 -aggregate Bonite is the preferred product in applications with a major focus on corrosion resistance. Bonite LD, with higher porosity levels, offers increased insulation properties and maintains the corrosion resistance inherent to CA_6 .



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