

Advanced Alumina Solutions

Alumina 94/96/99

Forging Excellence in Ceramics

Engineered for
Innovation.

Precision-engineered
production process with
rigorous quality monitoring.

Aluminium oxide (Al_2O_3), available in varying levels of purity, is among the most extensively utilized high-performance ceramic materials. CeramForge provides a comprehensive portfolio of material grades with distinct property characteristics, fine-tuned through precise microstructural optimization. Both coarse-grained and fine-grained versions are offered to meet diverse application needs.

Renowned for its exceptional hardness, thermal stability, and outstanding corrosion resistance, aluminium oxide is a material of choice across multiple industries. In medical technology, its biocompatibility and wear resistance make it highly suitable for medical applications. Its exceptional resistance to chemical attack, combined with its hardness, also makes it ideal for abrasive applications.

APPLICATIONS

Pistons and cylinders for precision dosing devices

Roller Assemblies for Three Roll Mills

Valves and Seats

Mud Pump Liners and Plungers

Electrical and Thermal Insulators

Ceramics for Analytical Instruments

Pump Seals and Bushes

Parts for Textile Machinery and Wire Drawing

Other Custom made Components


KEY FEATURES

 Excellent electrical insulation


 Extreme hardness

 High compressive strength

 Superior mechanical strength

 Low thermal conductivity

 Low thermal expansion

 Outstanding resistance to corrosion and wear

 Excellent tribological performance

 Good biocompatibility

CeramForge

Alumina Grades

Ceramic components typically demonstrate outstanding mechanical properties, exceptional hardness, and reliable resistance to wear and heat, all while maintaining a relatively low weight. Furthermore, these components serve as excellent electrical and thermal insulators.

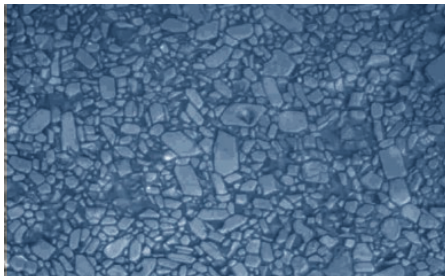
Property	Al 94%	Al 96%	Al99-Al99.8%
Purity (% Al ₂ O ₃)	94%	96%	99 to 99.8%
Density (g/cm ³)	3.65–3.75	3.70–3.85	3.86-3.91
Vickers Hardness (GPa)	~10.5	~12.0	~14.0
Flexural Strength (MPa)	300-350	350-400	400-500
Thermal Conductivity (W/m·K)	18-22	24-28	28-35
Thermal Expansion (10 ⁻⁶ /°C)	7.5-8.0	7.0-7.5	6.5-7.0
Dielectric Strength (kV/mm)	~10	~12	~15
Maximum Use Temperature (°C)	~1400	~1500	~1750
Chemical Resistance	Good	Very Good	Excellent

Note: These values are approximate and may vary depending on the specific processing and material grade.



Alumina 94

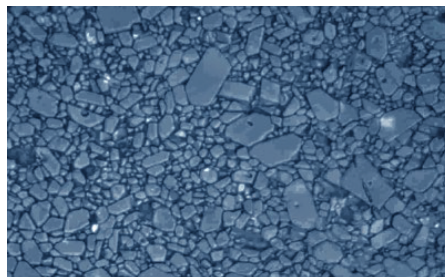
Average Grain Diameter Approximately 4 μ m



20 μ m

Alumina 96

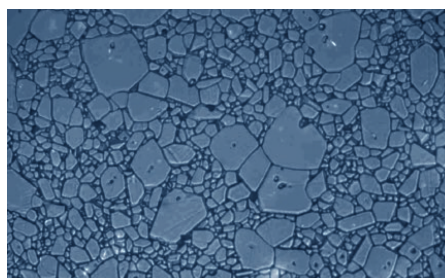
Average Grain Diameter Approximately 5 μ m



20 μ m

Alumina 99

Average Grain Diameter Approximately 5 μ m



20 μ m

Designed for Performance and Innovation

At CeramForge, collaboration drives our innovations. With decades of experience, we offer solutions that align with our customers' exact requirements.

High level of performance of advanced ceramics contributes not only to the durability and reliability of the products but also allows for more innovative designs, pushing the boundaries of what can be achieved in various industries. As a result, integrating advanced ceramics into product design leads to enhanced performance metrics and extended service life, making them a favoured choice in cutting-edge technology applications.

Innovating Ceramics. Advancing Industries.

For Further information,
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