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A New Era of Accessible Technical Ceramics

Alumina 4N Resin is a high-density and high-purity technical ceramic with exceptional performance in extreme environments.

Many industries rely on technical ceramics for high heat, electrical, abrasion, and chemical resistance but are held back by the constraints of traditional manufacturing. Existing ceramic 3D printers cost hundreds of thousands of dollars and require specialized operators. With Alumina 4N Resin, anyone can harness ceramic 3D printing and ditch expensive tooling and molds for design freedom, reduced production costs, and faster turnaround times. With the Formlabs SLA ecosystem, previously impossible ceramic projects are now within reach.



“Alumina 4N Resin is remarkably easy to work with and plugs into our workflow seamlessly. It fits a need in the market, with a low barrier of entry that allows us to rapidly iterate on designs and produce parts at a comparably low cost.”

Mr. Benjamin Lam
Materials Research Engineer
at the Air Force Research Laboratory





High-Purity, High-Density, High-Quality

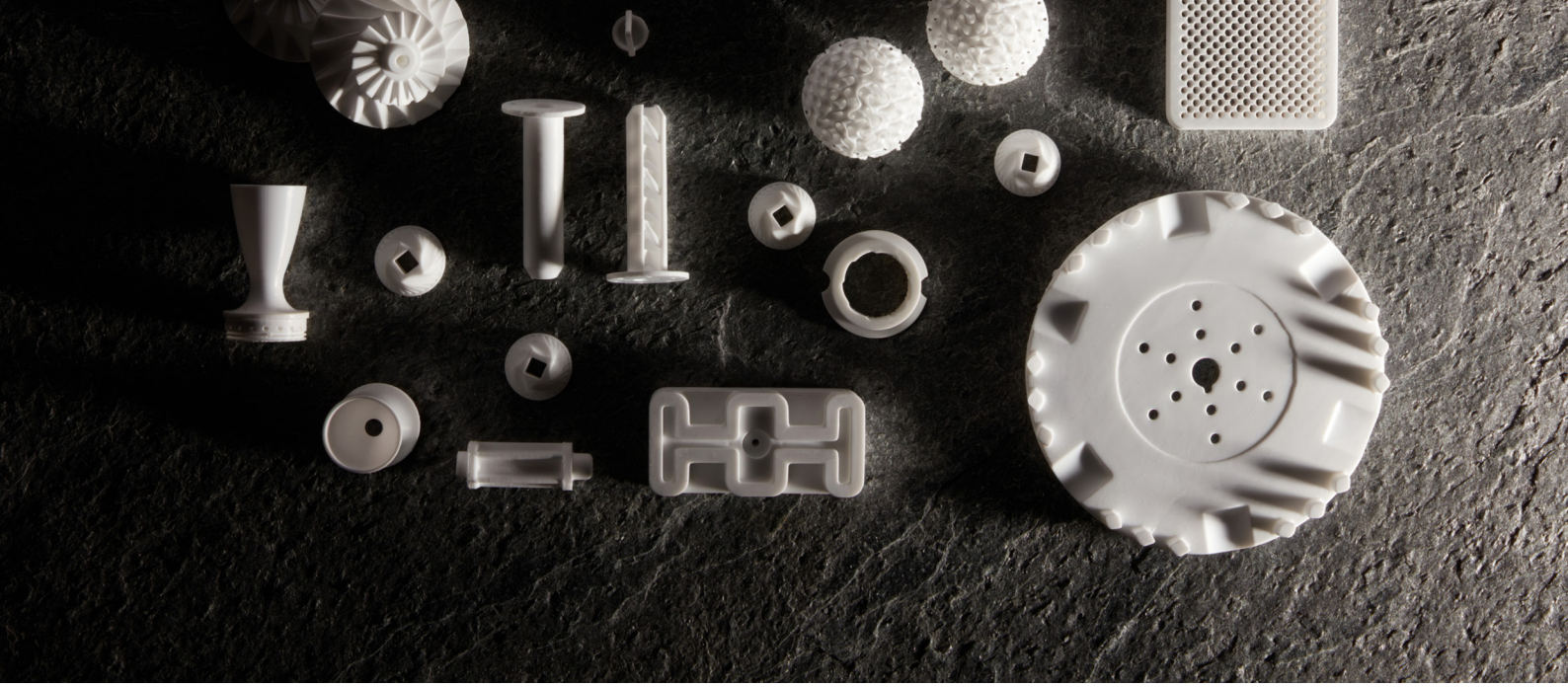
Fabricate ceramic components with intricate internal channels, latticed structures, and complex geometries that are impossible with traditionally manufactured alumina.

Purity: **99.99%**
Relative Density: **98.6%**

When Extreme Performance Matters

Put our materials to the test with their exceptional thermal, mechanical, and conductive properties —comparable to traditionally manufactured alumina.

Flexural Strength: **400 MPa**
Young’s Modulus: **380 GPa**
Maximum Working Temperature: **1500°C**



Applications

Alumina 4N Resin is used in industries such as defense, manufacturing, chemicals, and automotive.

High Voltage Components	Chemical Resistance	Thermal Protection	Foundry Tools for Metal Casting
Enclosures	Manifold Pipes	Spark Plug Insulators	Cores, Crucibles
Connector Housings and Covers	Mixing Blades	Electrical Mounting	Mixing Tools
Terminal Blocks	Pipes	Insulating Housings or Tubes	Thermocouple Sheaths
			Metal Filters

WORKFLOW

1. **Design**
2. **Print**
3. **Wash**
4. **Dry**
5. **Debind**
6. **Sinter in a Kiln**

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