

Alumina 99.7% Labware and Tubes

1. 99.7% Alumina Labwares are made from special grade of Alumina imported from ALCOA Germany.
2. These Labware are made by slip casting and pressure casting. Special care is taken to maintain purity of sintered Alumina to be above 99.7%
3. Sintered Grain Size is between 2-4 microns.
4. Tolerance: +/- 1mm for all dimensions up to 50 mm. +/- 2mm for all dimensions above 50 mm.
5. Typical Chemical Composition of ALCOA Powder (Sintered Product) by wt %
6. Al₂O₃ [%] 99.8 (99.7) SiO₂ [%] 0.015 (0.05) MgO [%] 0.04 (0.08)
7. Na₂O [%] 0.03 (0.03) Fe₂O₃ [%] 0.015 (0.015) CaO [%] 0.01 (0.03)
8. All data are based upon Ants standard test methods. The typical values are based upon actual averages from production data.
9. Sintered Density: above 3.9 gm/cc, above 98% TD (3.96gm/cc)
10. Lustre and Color: With submicron Alumina powder from ALCOA, Ants create special Vitreous Lustre, Ivory Color and a Translucent high purity Alumina Labware.
11. Solubility in boiling HF: 0.1 % by wt after three hours. Solubility in boiling HCL, H₂SO₄ and NAOH after 12 hours: less than 10-3% by wt.
12. Thermal Shock Behavior: Temperature change rate should not exceed 150°C/Hr
13. Maximum Temperature of use without load: 1750°C
14. Components of Alumina 99.7% made by Ants have been tested with success for Ultra High Vacuum Compatibility.
15. Although Alumina 99.7 does not react with most acids, chemicals and reagents, it does form Low temperature eutectic with compounds of Bismuth, Lead, Silicon, Tin, Antimony and rare earths. So care has to be taken to not use Alumina wares for heat treatment of one eutectic forming compound with another eutectic forming compound.

Recommended Usage:

Ants 99.7% Alumina wares are especially useful to chemists, metallurgists, and others high temperature involved in work demanding contamination-free results. These wares are highly refractory, meant for use in reducing and oxidizing atmospheres. It is inert in hydrogen and carbonaceous atmospheres and offers high resistance to alkalies and other fluxes. Suitable for glass melting, including borosilicate glass.

Physical Properties

	Units of Measure	Value
Density	gm/cc	> 3.85
Porosity	%	< 0.5
Flexural Strength	MPa	379
Elastic Modulus	GPa	375
Shear Modulus	GPa	152
Bulk Modulus	GPa	228
Poisson's Ratio	--	0.22
Compressive Strength	MPa	2600
Tensile Strength (250°C)	MPa	275
Hardness	Kg/mm ²	1440
Thermal Conductivity	W/mK	35
Co-Efficient of Thermal Expansion	10 ⁻⁶ /°C	8.4
Specific Heat	J/KgK	880
Dielectric Strength	AC - KV/mm	16.9
Dielectric Constant	@1MHz	9.8
Dissipation Factor	@1KHz	0.0002