CALCINED ALUMINA

Calcined alumina is produced through the calcination ("heating") of alumina to various temperatures. By controlling the calcination temperatures and time, the properties of the alumina can be controlled. Calcined alumina is therefore utilized in a variety of industrial applications including Structural ceramics, Technical ceramics, Polishing compounds for plastic, metal, and glass, Fillers for Rubber and Plastics, Friction - anti slip, Refractories, Paint & Coatings and Thermal Spray Powders.

Typically the primary variables in selecting the proper calcined alumina for your application are:

- Density of crystal: low/soft, medium or high/hard material.
  - These factors are determined by the degree and duration of calcination.
- Surface area of the powder: decreases with a higher degree and duration of calcination.
- Soda content: decreases with higher degree of calcination and chemical treatments.
- Alpha Alumina Content.
- Primary Crystal size.

Polishing grades vary depending on the polishing application and the work piece material.

TYPICAL APPLICATIONS

Metal Preparation	Refractory	Refractories
Anti-Slip	Milling	Body and Vehicle Armor
Laminates	Filler	Blasting Media
Coatings	Polishing	Microdermabrasion
Filtration	Structural Ceramic	Grinding
Abrasives	Technical Ceramics	Polishing
		Lapping

TYPICAL PROPERTIES

- High Hardness
- High Compression Strength
- Abrasive Wear-Resistance
- Ability to Resist Vigorous Chemical Attacks at Extreme Temperatures
- High Degree of Refractoriness
- Superior Electrical Insulating Properties
- Resistance to Thermal Shock
- Dielectric Properties
- High Melting Point

www.panadyne.com
Like us on Facebook
Connect with us on LinkedIn
sales@panadyne.com
Phone 215-444-9315 • Fax 215-444-9317
516 Stump Road • Montgomeryville • Pennsylvania 18936

PANADYNE

CALCINED ALUMINA TECHNICAL DATA

	MN/Y	MN/Y-407	DN-6	DN-440	DN-430	DN-420	DN-206
Al2O3 (%)	≈99.0	≈99.0	≈99.3	≈99.3	≈99.3	≈99.3	≈99.3
Na2O (%)	0.4 - 0.9	0.6 - 1.1	≤0.5	≤0.5	≤0.5	≤0.5	≤0.5
Specific Surface Area (m2/g)	0.15 0.35	0.6 - 0.11	0.2 - 0.5	0.3 - 0.7	0.3 - 0.7	0.3 - 0.7	0.5 - 0.9
Particle Size Distribution d50 (µm)	≈70	7 - 10	≈80	12 - 28	10 - 20	6 - 10	6 - 8
Particle Size Distribution d90 (µm)	≈120	15 - 30	≈200	70 - 100	50 - 80	10 - 60	10 - 20
Primary Crystal Size (µm)	≈15	≈7	≈6	≈6	≈6	≈6	≈6
Oil Absorption (ml/100g)	≈60	≈18	≈43	≈30	≈25	≈20	≈20
Cutting Effect	9	8	9	8	8	7	7
Polishing Effect	1	3	1	2	3	3	3

	MDS	MDS-6	MZS	MZS-12	MZS-3	MPS
Al2O3 (%)	≈99.8	≈99.8	≈99.7	≈99.8	≈99.9	≈99.3
Na2O (%)	<0.1	<0.1	≤0.1	≤0.1	≤0.1	≤0.1
Specific Surface Area (m2/g)	0.3 - 0.6	0.5 - 1.2	0.7 - 1.3	0.6 - 1.5	0.8 - 1.8	3 - 5
Particle Size Distribution d50 (µm)	≈70	4 - 6	≈70	7 - 15	2.5 - 5	≈70
Particle Size Distribution d90 (µm)	≈120	9 - 15	≈120	≈70	7 - 12	≈120
Primary Crystal Size (µm)	≈4	≈4	≈2.5	≈2.5	≈2.5	≈1
Oil Absorption (ml/100g)	≈60	≈30	≈60	≈30	≈25	≈60
Cutting Effect	7	6	7	5	4	3
Polishing Effect	3	4	3	5	6	7

	PN-6	PN-202	PN-505	PN-6(12)	PS-6	PS-6(12)	PC12-2
Al2O3 (%)	≈99.5	≈99.6	≈99.8	≈99.9	≈99.8	≈99.8	≈95
Na2O (%)	≤0.5	≤0.5	0.2 - 0.4	≤0.2	≤0.12	-	≤0.3
Specific Surface Area (m2/g)	4 - 14	8 - 15	8 - 15	8 - 15	4 - 5.5	8 - 15	5
Particle Size Distribution d50 (µm)	≈80	2 - 4	1.5 - 3	≈30	≈30	≈25	1.5 - 2.5
Particle Size Distribution d90 (µm)	≈220	18 - 30	7 - 14	≈50	≈50	≈30	≈25
Primary Crystal Size (µm)	≈1	≈1	≈1	≈1	≈0.5	≈0.5	≈0.5
Oil Absorption (ml/100g)	≈50	≈30	≈30	≈45	65 - 70	65 - 70	≈35
Cutting Effect	3	2	1	3	2	2	2
Polishing Effect	8	9	9	9	9	9	10

Very Hard | Hard | Intermediate | Soft | Very Soft

PANADYNE

www.panadyne.com
Like us on Facebook
Connect with us on LinkedIn
sales@panadyne.com
Phone 215-444-9315 • Fax 215-444-9317
516 Stump Road • Montgomeryville • Pennsylvania 18936