



ALPACO

- Engineering ceramic(Advanced material)
- Ceramic industry
- Refractory industry
- Catalyst & Filter
- Glass
- Polishing

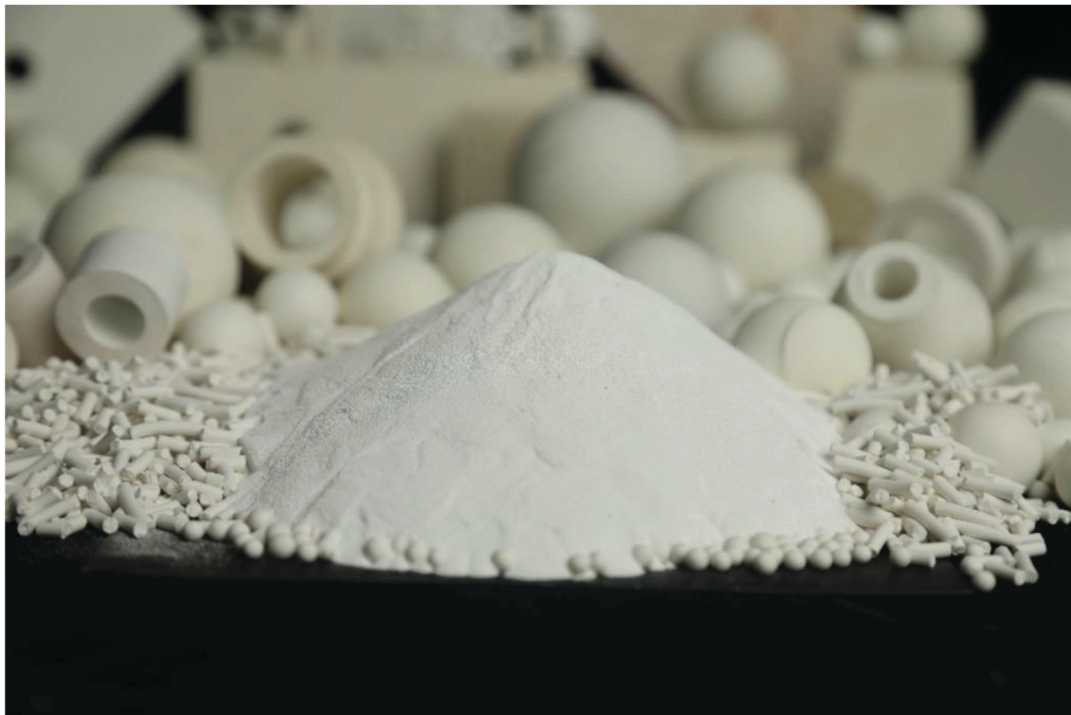
Introduction

Alpaco QC department determines the calcination process in order to control the α -Al₂O₃ content, structure, size and morphology of the primary crystals.

Alpaco manufacturing process provides α -alumina with a number of advantages:

- Optimized packing density
- Low sintering temperature
- High sintered densities
- Flexible processing
- Optimized flow properties

By understanding the specific requirements of each application, this company can develop technical solutions and provide an economical implementation of any new developments in the production process. Alpaco has a quality assurance process that is independent of the production process. High capability tests in the Alpaco laboratory are documented by accreditation unit according to international standards. Modern, up-to-date equipment and characterization techniques along with careful quality control guarantee consistent product quality and meet the required specification for the customer. Alpaco's state-of-the-art and well-equipped engineering facilities located at its production site and also, the use of prestigious scientific and research centers in the country, provides the opportunity to adjust its processes to customers' requirements.

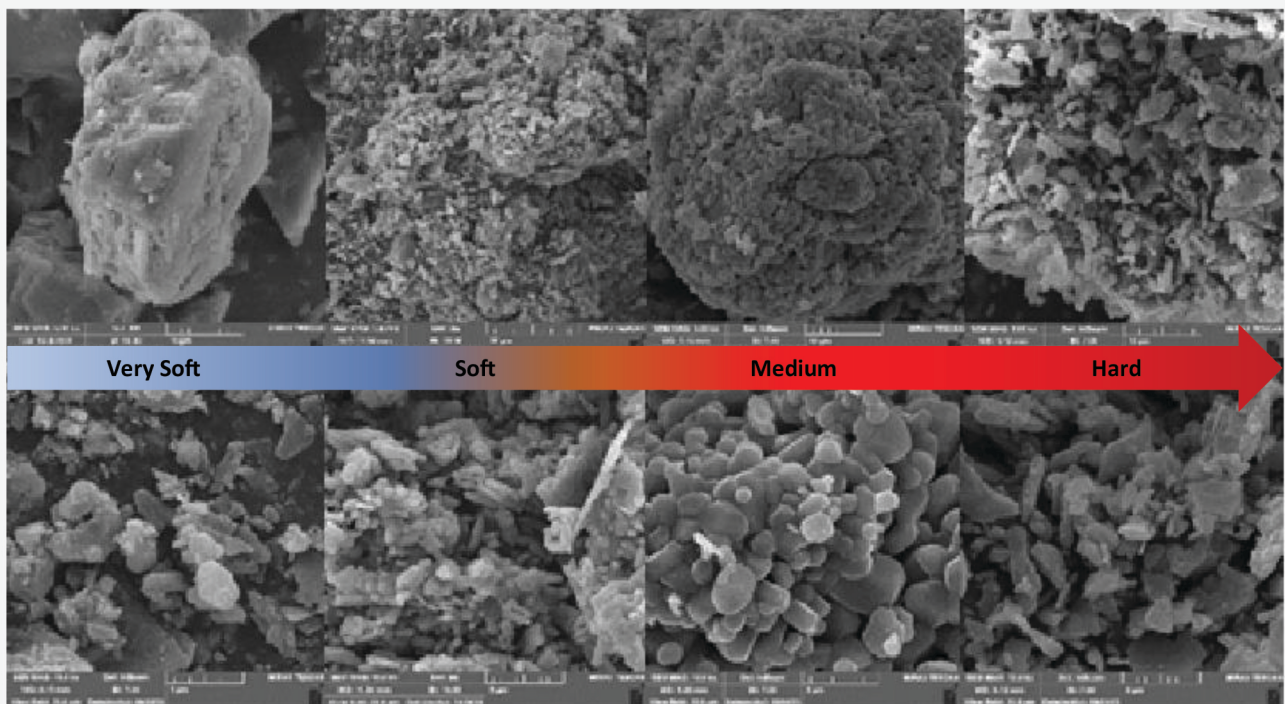


Applications

	Ceramic Ball	Lining	Anti Slip Glaze	Refractory	Frits & Engobes	Glass	Porcelain (Table & White ware)	Pigment	Catalysts & Filter	Chemical Industry	Coating Kiln Furniture	Wear Resistant Ceramic	Engineering Ceramics	Polishing	High Voltage Insulator
ALP-N650					α	α				α					
ALP-N160								α	α	α					
ALP-N710					α	α				α			α		
ALP-N750				α	α	α					α				
ALP-N270				α			α	α	α		α		α		
ALP-N271				α											
ALP-LN750	α	α	α	α		α			α		α		α		
ALP-LN270				α			α	α			α	α	α		
ALP-LN271				α											
ALP-N810			α	α											
ALP-N180				α			α	α	α						α
ALP-N181				α											
ALP-L710					α	α					α	α	α		
ALP-L170							α	α	α				α		
ALP-L750				α	α	α			α		α		α		
ALP-L270				α			α	α	α		α	α	α		
ALP-L271				α											
ALP-LS750	α	α	α	α					α		α				
ALP-LS270				α				α	α		α	α	α		α
ALP-LS271				α											
ALP-L810	α	α	α	α					α		α				
ALP-L180				α					α		α		α	α	α
ALP-L181				α											
ALP-P700														α	
ALP-P710														α	
ALP-H100						α									α
ALP-H200					α	α			α	α					α
ALP-H300					α	α		α	α	α					α

Calcined Alumina

Alpaco Calcined Alumina is supplied with different degrees of calcination and various soda quantity in ground and unground form to meet the requirements of different customers. Low Calcined Alumina can be used in standard ceramic application like Glaze and Frits. Hard Calcined Alumina has controlled shrinkage and better structural properties.



Specific Surface Area (BET)

60 – 80 m²/gr

7 - 13 m²/gr

0.7 – 0.9 m²/gr

0.5 – 0.9 m²/gr

Primary Crystal Size

~0.02 µm

~ 0.2 µm

~2.5 µm

~3.5 µm

Alpha Alumina Crystal Size (µm)

< 5%

75 – 90 %

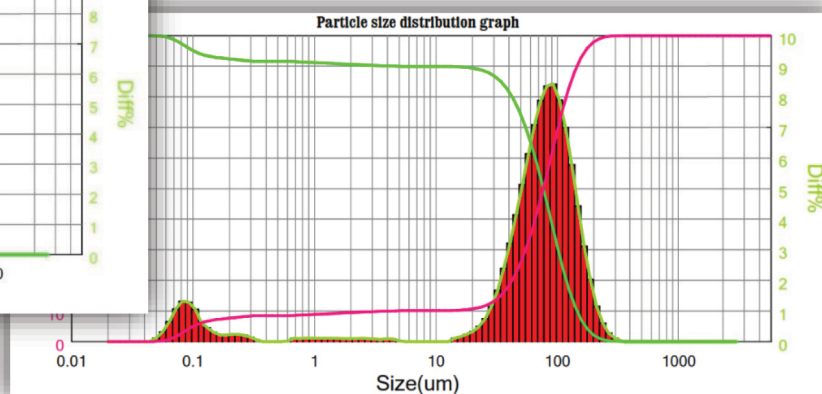
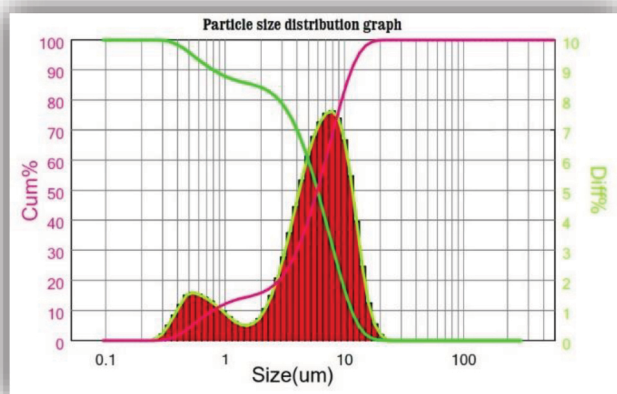
95 – 98 %

>98 %

Calcined Alumina for Standard Ceramics

Alumina has a wide range of applications in the ceramic industries, including engobes, glazes, and frits. The special features of alumina which its high hardness, along with its high mechanical resistance, makes this material unique. surface effects such as matt, semi-matt, and glossy finish, depending on the type of alumina used. Besides chemical purity, other important parameters of alumina for ceramic industries are the size of alpha - alumina crystals and alpha alumina content in it. Alumina affects the properties of compounds according to specific surface area (BET), average particle size(D50), and the degree of calcination. Alpaco company offers, controlled ranges of crystal size ceramic.

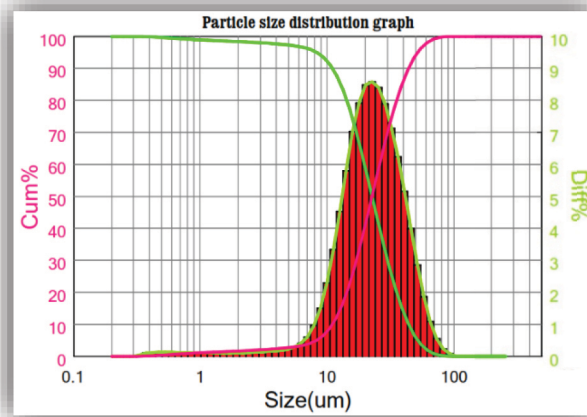
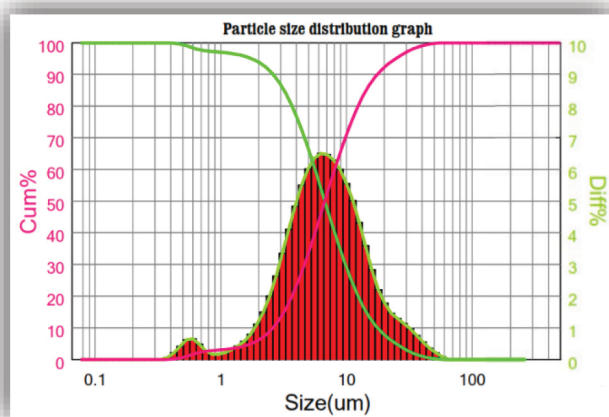
Properties	Medium Calcined								Low Calcined					
	Unground				Ground				Unground			Ground		
Chemical Properties (%)	N750	LN750	L750	LS750	N270	LN270	L270	LS270	N650	N710	L710	N160	N170	L170
AL ₂ O ₃	99.6	99.7	99.7	99.7	99.6	99.7	99.7	99.7	99.3	99.6	99.7	99.3	99.6	99.7
SiO ₂	0.01	0.01	0.05	0.05	0.01	0.01	0.05	0.05	0.1	0.01	0.05	0.1	0.01	0.05
Na ₂ O	0.3	0.2	0.15	0.15	0.3	0.2	0.15	0.15	0.4	0.3	0.15	0.4	0.3	0.15
Fe ₂ O ₃	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
L.O. I	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
α-CONTENT	>95	>96	>95	>96	>95	>96	>95	>96	>5	>90	>90	>5	>90	>90
Physical Properties														
D50(μm)	70	70	70	70	5	5	5	5	70	70	70	5	5	5
BET(m ² /g)	1.1	2.4	1.5	1.8	2.4	2.2	2.4	2.2	66.3	2.3	1.8	65	2.5	2.2



Calcined Alumina for Refractory

Alumina is one of the most common oxides materials, which used in refractory applications. In a typical refractory composition, large size alumina has a key role as a component of aggregates or matrix grains. Aggregated form the skeleton bringing refractoriness, high temperature strength with resistance to corrosion and erosion. Alpaco gives the opportunity to offer a broad range of consistent grades controlled physical and chemical parameters, providing its customers with the optimum material for a wide range of refractory applications: Steel industry, Foundry, Glass industry, Aluminums industry, Cement industry, Incinerators, Petrochemistry, Ceramic rollers.

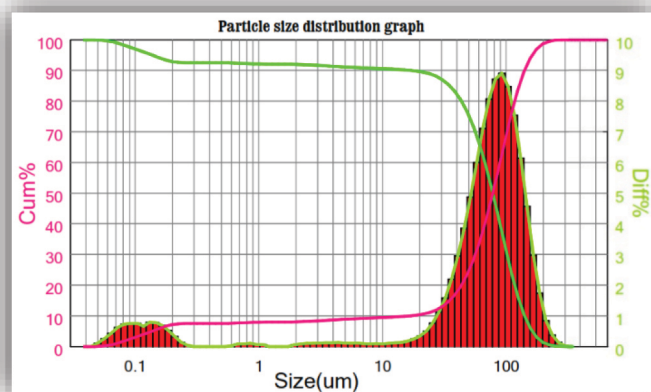
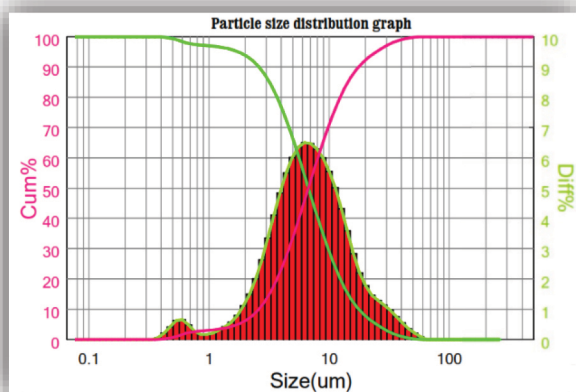
Chemical Properties (%)	Hard Calcined									Medium Calcined											
	Unground			Ground						Unground				Ground							
	N810	L810	M750	N180	N181	L180	L181	M270	M271	N750	LN750	L750	LS750	N270	N271	LN270	LN271	L270	L271	LS270	LS271
AL ₂ O ₃	99.5	99.6	99.7	99.5	99.5	99.6	99.6	99.7	99.7	99.6	99.7	99.7	99.7	99.6	99.6	99.7	99.7	99.7	99.7	99.7	99.7
SiO ₂	0.05	0.05	0.01	0.05	0.05	0.05	0.05	0.01	0.01	0.01	0.01	0.05	0.05	0.01	0.01	0.01	0.01	0.05	0.05	0.05	0.05
Na ₂ O	0.4	0.2	0.1	0.4	0.4	0.2	0.2	0.1	0.1	0.3	0.2	0.15	0.15	0.3	0.3	0.2	0.2	0.15	0.15	0.15	0.15
Fe ₂ O ₃	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
L.O. I	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
α-CONTENT	>96	>96	>96	>96	>96	>96	>96	>96	>96	>95	>96	>95	>96	>95	>95	>96	>96	>95	>95	>96	>96
Physical Properties																					
D50(μm)	70	70	70	5	-	5	-	5	-	70	70	70	70	5	-	5	-	5	-	5	-
D90(μm)	-	-	-	-	45	-	45	-	45	-	-	-	-	-	45	-	45	-	45	-	45
BET(m ² /g)	0.9	1.07	1.3	1.5	0.93	2.8	1.5	2.7	1.8	1.1	2.4	1.5	1.8	2.4	1.3	2.4	2	2.2	2.3	2.2	2



Calcined Alumina for Technical Ceramics

Alumina is used as a special material in the manufacture of technical ceramics. Finished parts offer high mechanical strength and hardness and resistance to both wear and chemical corrosion. Additionally, alumina ceramics exhibit very favorable thermal and electrical resistance properties, providing dimensional stability when heated and a good ability to dissipate heat.

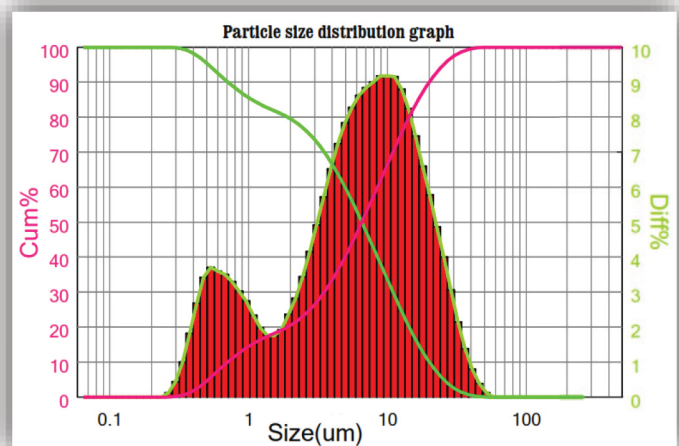
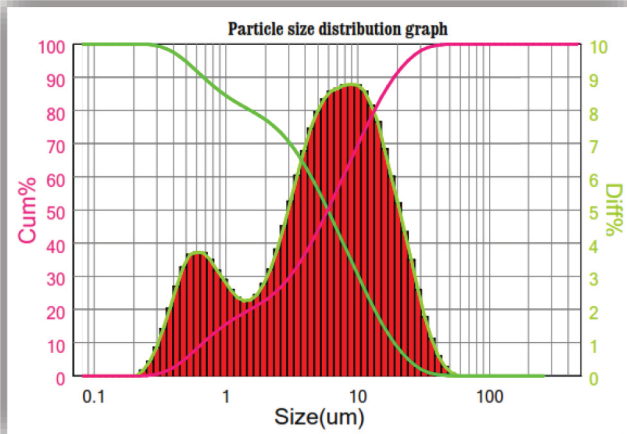
Properties	Hard Calcined				Medium Calcined					
	Unground		Ground		Unground			Ground		
Chemical Properties (%)	L810	M750	L180	M270	LN750	L750	LS750	LN270	L270	LS270
Al ₂ O ₃	99.6	99.7	99.6	99.7	99.7	99.7	99.7	99.7	99.7	99.7
SiO ₂	0.05	0.01	0.05	0.01	0.01	0.05	0.05	0.01	0.05	0.05
Na ₂ O	0.2	0.1	0.2	0.1	0.2	0.15	0.15	0.2	0.15	0.15
Fe ₂ O ₃	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
L.O. I	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
α-CONTENT	>96	>96	>96	>96	>96	>95	>96	>96	>95	>96
Physical Properties										
D50(μm)	70	70	5	5	70	70	70	5	5	5
BET(m ² /g)	1.07	1.3	2.8	2.7	2.4	1.5	1.8	2.2	2.4	2.2



Calcined Alumina for Polishing

Polishing is a multi-stage process that aims to improve the surface condition of any object. Alumina is one of the most important abrasive materials for polishing a wide range of surfaces. The calcination degree determines the primary crystal size and therefore the stock removal capability of an alumina.

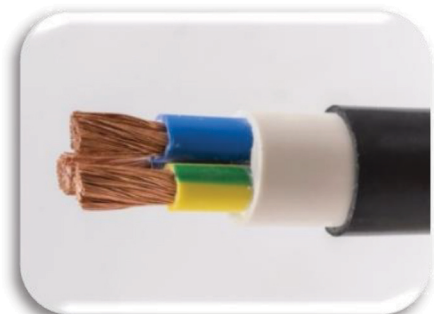
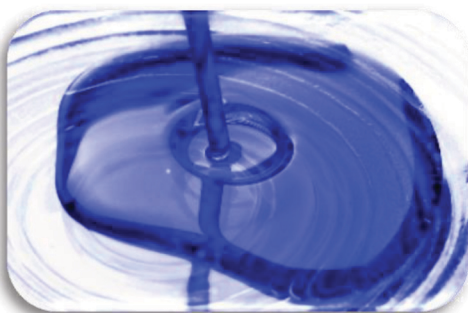
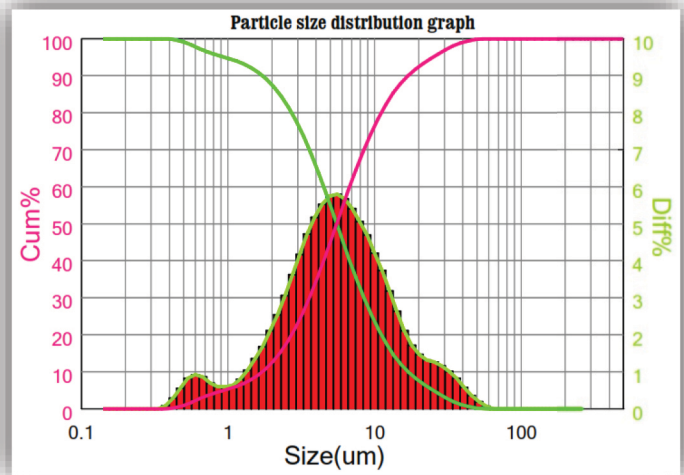
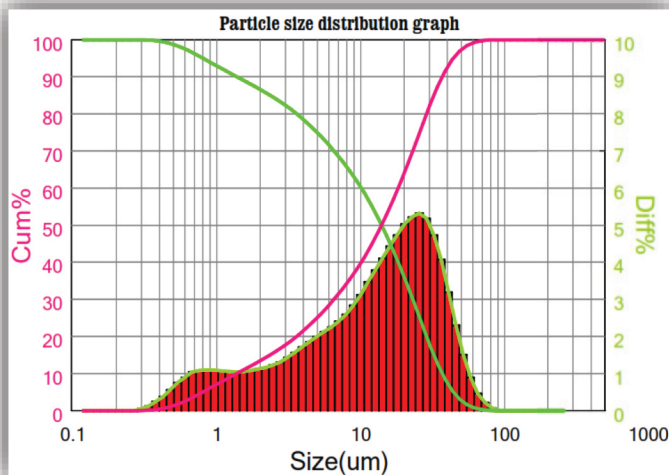
Properties	Ground	
Chemical Properties (%)	P700	P710
Al ₂ O ₃	99.4	99.4
SiO ₂	0.15	0.15
Na ₂ O	0.4	0.4
Fe ₂ O ₃	0.01	0.01
L.O. I	0.05	0.05
α-CONTENT	75	85
Physical Properties		
D50(μm)	60	60



Aluminum Hydroxide

Alpaco's aluminum hydroxide is used for various industries. Alpaco grinding process enables us to adjust the particle size and impurity level of aluminum hydroxide to supply different industries.

Products	Unground	Ground	
	ALP-H100	ALP-H200	ALP-H300
Chemical Properties (%)			
AL(OH) ₃	99.6	99.6	99.6
SiO ₂	0.008	0.008	0.008
Na ₂ O	0.28	0.28	0.28
Fe ₂ O ₃	0.009	0.009	0.009
CaO	0.008	0.008	0.008
H ₂ O(%)	8-9	-	-
L.O.I(%)	34.7	34.7	34.7
Physical Properties			
BET (m ² /gr)	0.9	1.1	2
D50(μm)	<90	13	4-5





Aluminium Pars oxide of Kasra

شرکت آلومینیوم پارس اکسید کسرا
تولید کننده پودر آلومینا در گریدهای مختلف