



SPECIALTY ALUMINAS FOR  
**HIGH PERFORMANCE REFRACTORIES**

2018

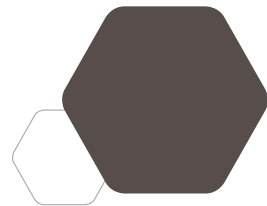
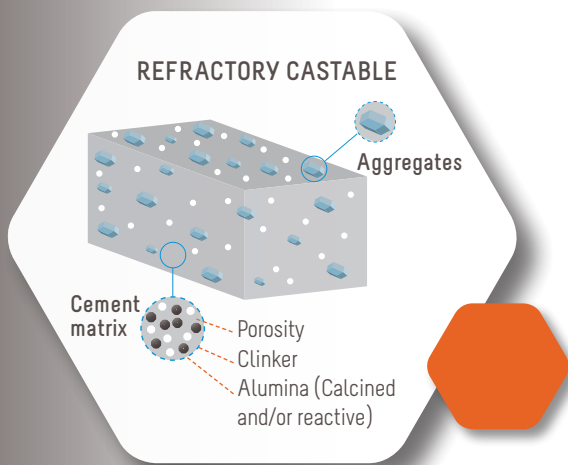
# ALUMINAS FOR REFRACTORIES



Alumina is one of the most common oxides used in refractory applications. In a typical refractory, alumina has a key role as a component of aggregates, matrix grains and additives. Aggregates form the skeleton bringing refractoriness, high temperature strength with resistance to corrosion and erosion. The matrix is composed of fine and ultrafine materials such as ground calcined and reactive alumina, the latter with clinker playing the role of binder. These aluminas are used to engineer specific properties in the finished product.

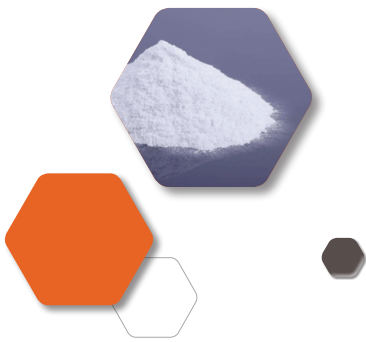
Alteo's fully-integrated approach enables us to control all aspects of our production from bauxite to finished products. It also gives us the opportunity to offer a broad range of consistent grades with carefully controlled physical and chemical parameters, providing our customers with the optimum material for a wide range of refractory applications:

- Steel industry
- Foundry
- Glass industry
- Aluminium industry
- Cement industry
- Incinerators
- Petrochemistry
- Ceramic rollers



	Calcined aluminas				Reactive aluminas						
	Hard		Medium		Monomodal				Bimodal		Multi modal
	AC34 AC44	from AC34B3 to AC34B6	GA4R	AR12B5	PFR	P172SB	PFR20	P122B	PBR	PFR40	M4R
<b>Shaped Refractory Materials</b>	<b>Bricks:</b>										
	High alumina bricks	●	●								
	Electrofused bricks	●									
	<b>Others:</b>										
	Sliding plates		●			●	●	●		●	●
Nozzles, lances, purging sets, sleeves		●			●	●	●	●	●	●	
Kiln furniture								●			
<b>Unshaped Refractory Materials</b>	Conventionnal, Low Cement, Ultra Low Cement, No Cement Castables		●			●	●	●	●	●	●
	Gunning mixes		●	●	●	●					●
	Mortars Refractory cement				●			●	●		
	Ceramic fibers	●									
	Ceramic rollers		●	●							





# REACTIVE ALUMINAS

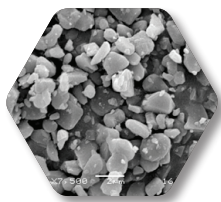
Alteo reactive alumina product line for optimal refractory matrix

Microns	Monomodal	Bimodal	Multimodal
<1.0	P172SB PFR		
1.0-2.0	PFR20	PFR40	
2.0-3.5		PBR	M4R
>3.5	P122B		

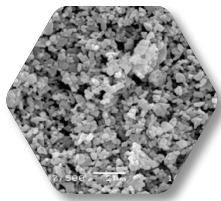
Reactive aluminas are a fundamental component of high quality shaped and monolithic refractory materials.

These superground aluminas have a very well controlled particle size distribution (PSD) in the 0.5-6 microns range. They are mainly used in the production of high-performance refractories, typically in Low Cement Castable (LCC) and Ultra Low Cement Castable (ULCC) formulations providing size distribution control on fine particles in customers' formulations. Monomodal reactive aluminas enable full flexibility in the design of refractory matrix PSD. They can also be used in association with ground calcined aluminas and very fine aggregates to give a continuous and very broad PSD.

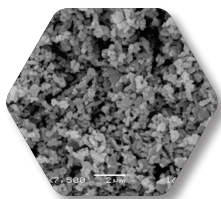
## Monomodal



PFR20



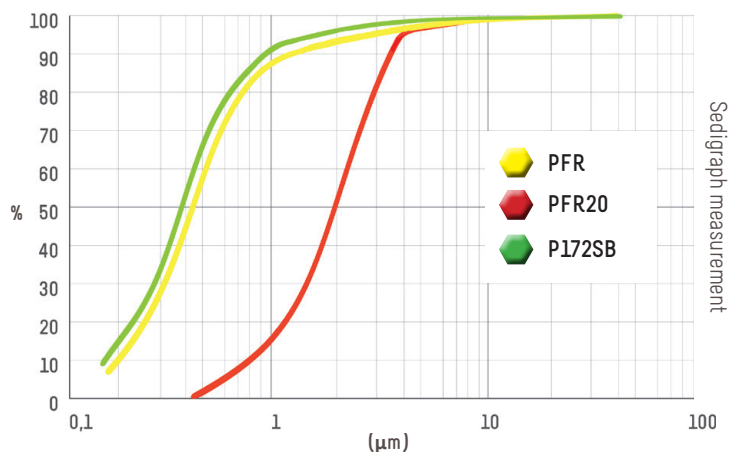
PFR



P172SB

	Unit	Monomodal			
		P172SB	PFR	PFR20	P122B
<b>Physical properties</b>					
Specific Surface Area BET	m <sup>2</sup> /g	7.5	6.4	1.9	1.0
D50 (sedigraph)	µm	0.4	0.5	2.0	5.5*
D90	µm	1.3	1.8	3.5	12.0*
<b>Chemical properties</b>					
Al <sub>2</sub> O <sub>3</sub> on dry basis	%	99.85	99.85	99.85	99.85
Na <sub>2</sub> O total	ppm	500	500	500	350
CaO	ppm	200	200	200	150
SiO <sub>2</sub>	ppm	400	400	800	700
Fe <sub>2</sub> O <sub>3</sub>	ppm	150	150	150	150

\*Cilas measurement Typical values



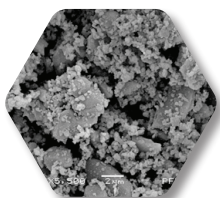
# REACTIVE ALUMINAS

**PBR** is a low soda bimodal alumina used for High Performances Refractories.

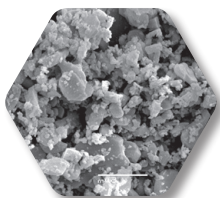
Its content of finest particles permits to achieve high density and high refractoriness for conventional monolithic as well as high technical flow control pieces.

## Bi & multimodal

We offer a full range of bi and multimodal aluminas that are designed to give your formulations low water demand, high density, and a controlled particle size distribution.



PFR40

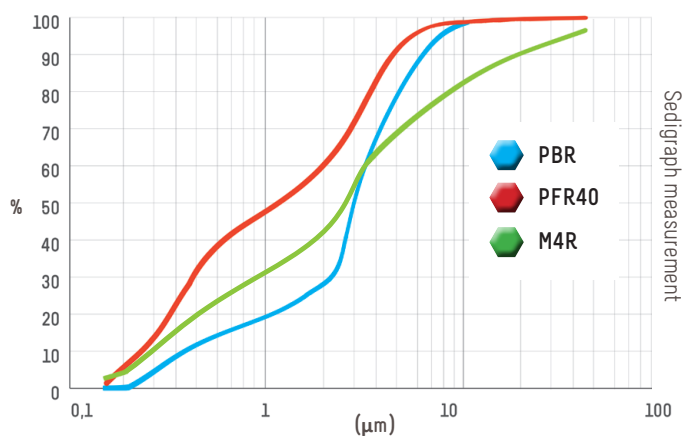


PBR

	Unit	Bimodal		Multimodal
		PBR	PFR40	M4R
<b>Physical properties</b>				
Specific Surface Area BET	m <sup>2</sup> /g	2.5	4.0	3.5
D50 (sedigraph)	μm	2.5	1.4	2.5*
D90	μm	5.0	5.0	12.0*
<b>Chemical properties</b>				
Al <sub>2</sub> O <sub>3</sub> on dry basis	%	99.85	99.85	99.74
Na <sub>2</sub> O total	ppm	500	500	1600
CaO	ppm	130	200	200
SiO <sub>2</sub>	ppm	700	600	600
Fe <sub>2</sub> O <sub>3</sub>	ppm	150	150	200

\*Cilas measurement

Typical values





## ALTEO R&D

For Alteo, innovation and application R&D are major parts of its growth strategy.

Alteo enhances its R&D capabilities through its **application laboratory**: the installation of **state-of-the-art equipment**, the recruitment of **technical experts** and collaborations with key partners and **university laboratories**.

Alteo constantly strives for the **best specialty alumina-based solution to your refractory ambitions**.

Contact our R&D team now at  
[www.alteo-alumina.com/contact](http://www.alteo-alumina.com/contact)

## CUSTOMER CARE COMMITMENT

To meet your highest expectations, our Customer Care team will always strive to ensure a **first class** service.

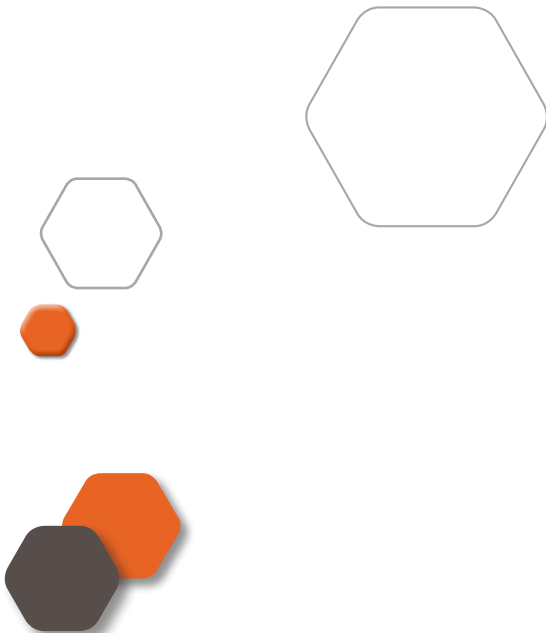
Our commitment is to provide **full support** from your first call to the delivery of our products; with technical assistance, packing solutions and short lead times.

## R&D CAPABILITIES



## ALTEO AT A GLANCE

- A world leading fully-integrated supplier of specialty aluminas with a capacity of more than 600 000 tonnes of alumina based products (hydrates and calcined aluminas).
- Global sales network with 4 regional hubs, 14 offices and local warehouses around the world.
- Development centre in France.
- Leading raw material supplier to the following industrial markets: Ceramics, Refractories, Specialty Glass, Polishing, Fillers and Coatings.



[www.alteo-alumina.com](http://www.alteo-alumina.com)