



2019

SPECIALTY ALUMINAS FOR  
**POLISHING APPLICATIONS**

# TECHNICAL FEATURES



## POLISHING

Polishing is a multi-stage process that aims to improve the surface condition of any object. These stages are:

- Pre-polish
- Polish
- Finishing

During each polishing step two sequential actions take place:

- Stock removal
- Buffing or Lapping

During stock removal, alumina agglomerates break down into primary crystals that continue the "smoothing" or buffing action.

The polishing behavior of an alumina is measured and expressed by two key characteristics:

- Cut (the ability to remove stock)
- Polish ( the ability for buffing/lapping)

The calcination degree determines the primary crystal size and therefore the stock removal capability of an alumina. Large primary crystals will give more abrasion. A coarse alumina grade will generate higher stock removal compared to a finer grade, but agglomerate toughness is dominant.

ALTEO has developed a wide range of tailor-made polishing grade aluminas, taking advantage of its unique range of specialty alumina feedstock and access to the required processing technologies.

## POLISHING ALUMINAS Product range

Our polishing aluminas can be applied in all of the usual ways:

- In solid compounds
- In liquid compounds
- As dry powder
- In suspension – slurry

All of our grades meet key customer requirements:

- Well defined topcut
- Stable PSD
- Consistent product quality
- Contamination free

SEGMENT	PRODUCT				
	Very soft	Soft	Medium	Medium hard	Hard
Steel, Stainless Steel	●	●	●	●	●
Chrome		●		●	
Brass		●	●		●
Non-ferrous Metals		●	●		●
Precious Metals	●	●			
Aluminium		●	●		●
Stones	●	●			
Plastics	●	●			
Wood	●				
Glass	●	●			
Electronics	●	●			
Varnishes	●	●			
Cleaners Automotive Rubbing compounds	●	●			

# VERY SOFT AGGLOMERATES



**Type:**  
Very fine and low calcined grades.

**Properties:**  
Low to very low cut and very high polish effect.

**Technical interest:**  
Used to give a high gloss.

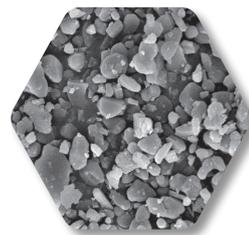
**Applications:**  
Steel & stainless steel, precious metals, stones, plastics, wood, glass, electronics, varnishes, cleaners, automotive rubbing compounds.

		A4G10	AR4SB	A4G20	A4BS
	Unit				
Particule Size D50 (Sedigraph)	µm	0.45	0.5	2	1.5
Particule Size D90 (Sedigraph)	µm	1.2	3.5	3.5	6.5
Screen residue	%	>45µm 0.1%	>45µm 0.3%	>45µm 0%	>45µm 0%
Oil absorption (oleic acid)	ml/100g	16	18	14	44
Specific Surface Area B.E.T.	m <sup>2</sup> /g	6	7	2	75
Alpha Alumina content	%	≈85	≈93	≈99	≈25
Primary crystal	µm	0.45	<0.5	1.7	<0.1
Na <sub>2</sub> O total	%	0.06	0.22	0.04	0.22
Cut	-	1	1.5	2	2
Polish	-	9.5	7.5	7.5	9

*Typical data*



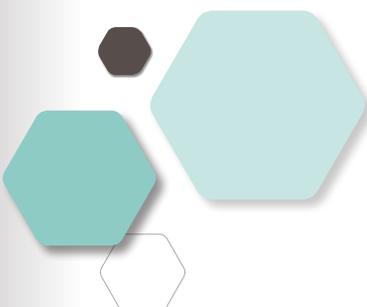
A4G10



A4G20



A4BS





# SOFT AGGLOMERATES

		AR12TA	AR12B25	AR12B15	AR12B10	AR12B5	AR12BFM	AR75B10
	<b>Unit</b>							
Particule Size D50 (Cilas)	µm	55	25	15	10	5.5	3.5	10
Particule Size D90 (Cilas)	µm	105	60	40	25	15	10	45
Screen residue	%	>200µm 0%	>90µm 2%	>90µm 0.2%	>75µm 0.1%	>45µm 0.2%	>20µm 0.1%	>45µm 0.1%
Oil absorption (oleic acid)	ml/100g	48	44	42	40	39	38	48
Specific Surface Area B.E.T.	m <sup>2</sup> /g	12	12	12	12	12.5	13	75
Alpha Alumina content	%	≈75	≈75	≈75	≈75	≈75	≈75	≈25
Primary crystal	µm	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
Na <sub>2</sub> O total	%	0.34	0.34	0.34	0.34	0.34	0.34	0.22
Cut	-	3	2.5	2	1.5	1	1	3
Polish	-	8	8	8	8.5	9	9	6

Typical data

## Type:

Low calcined grades.

## Properties:

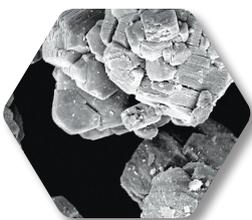
Low cut and high polish effect.

## Technical interest:

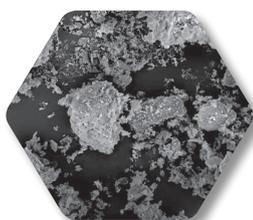
Used to give a high gloss.

## Applications:

Steel & stainless steel, chrome, brass, non-ferrous metals, precious metals, stones, plastics, glass, electronics, varnishes, cleaners, automotive rubbing compounds.



AR12TA



AR12B15



AR12B5

# MEDIUM AGGLOMERATES

		AR308TA	AR4TA	AR4B25	AR4B15	AR4B5
	<b>Unit</b>					
Particule Size D50 (Cilas)	µm	55	90	25	15	5
Particule Size D90 (Cilas)	µm	105	150	85	50	15
Screen residue	%	>200µm 0%	>200µm 0%	>90µm 10%	>63µm 5%	>45µm 0.3%
Oil absorption (oleic acid)	ml/100g	48	50	40	40	35
Specific Surface Area B.E.T.	m <sup>2</sup> /g	8	5	5	5	5.5
Alpha Alumina content	%	≈85	≈93	≈93	≈93	≈93
Primary crystal	µm	<0.5	<0.5	<0.5	<0.5	<0.5
Na <sub>2</sub> O total	%	0.34	0.22	0.22	0.22	0.22
Cut	-	3.5	6	5	4	3.5
Polish	-	7.5	3	4	4	5

Typical data

## Type:

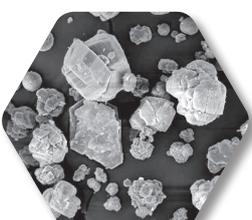
Calcined aluminas with an alpha content of ~90%.

## Technical interest:

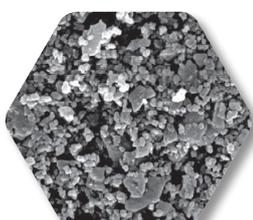
Mainly used for polishing and finishing when both treatments are required.

## Applications:

Steel & stainless steel, brass, non-ferrous metals, aluminium.



AR308TA



AR4SB



AR4B5



## MEDIUM HARD AGGLOMERATES

		AC44B6	AC44B5	AC44B4	AC34B3	AC12TA	AC12B15	AC12B5
	<b>Unit</b>							
Particulate Size D50 (Cilas)	µm	5.8	5.2	4.2	3.5	50	15	5.5
Particulate Size D90 (Cilas)	µm	17	15	12	10	95	50	20
Screen residue	%	>45µm 2.5%	>45µm 1.5%	>45µm 0.5%	>45µm 0.1%	>200µm 0%	>63µm 1%	>45µm 1%
Oil absorption (oleic acid)	ml/100g	17	17	16	16	50	34	26
Specific Surface Area B.E.T.	m <sup>2</sup> /g	0.8	0.9	1.0	1.2	1.1	1.2	1.3
Alpha Alumina content	%	>97	>97	>97	>97	>99	>99	>99
Primary crystal	µm	2.5	2.5	2.5	2.6	1.5	1.5	1.5
Na <sub>2</sub> O total	%	0.30	0.30	0.30	0.22	0.04	0.04	0.04
Cut	-	7	5	5	4	4	3	2.5
Polish	-	3	4	4	5	7	6.5	7

Typical data

### Type:

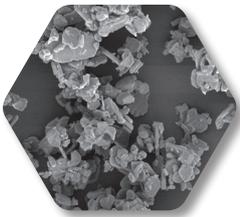
Calcined aluminas with a high alpha content.

### Technical interest:

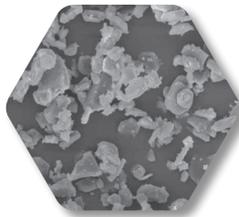
These grades are used for polishing and finishing when both treatments are required.

### Applications:

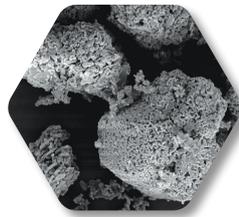
Steel & stainless steel, chrome, aluminium



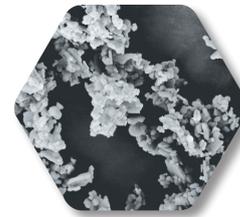
AC44B6



AC34B3



AC12TA



AC12B5

## HARD AGGLOMERATES

		AC45TA	AC45F	AC35TA	AC35B5
	<b>Unit</b>				
Particulate Size D50 (Cilas)	µm	55	65	70	5.5
Particulate Size D90 (Cilas)	µm	100	110	135	12
Screen residue	%	>200µm 0%	>200µm 0%	>200µm 0%	>45µm 0.01%
Oil absorption (oleic acid)	ml/100g	46	50	48	20
Specific Surface Area B.E.T.	m <sup>2</sup> /g	0.6	0.5	0.5	0.7
Alpha Alumina content	%	>97	>97	>97	>97
Primary crystal	µm	2.5	2.9	2.8	2.8
Na <sub>2</sub> O total	%	0.34	0.36	0.22	0.22
Cut	-	7	8	8	5
Polish	-	3	2	3	3

Typical data

### Type:

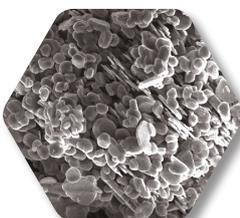
Calcined aluminas with a high alpha content.

### Technical interest:

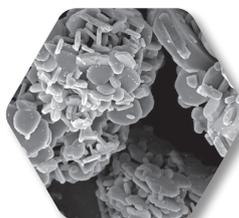
Mainly used for pre-polishing. These grades are used for polishing when both treatments are required.

### Applications:

Steel & stainless steel, chrome.



AC45TA



AC45F



AC35B5

## 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 polishing 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.

## 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, 17 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, Flame Retardants, Fillers and Coatings.



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

