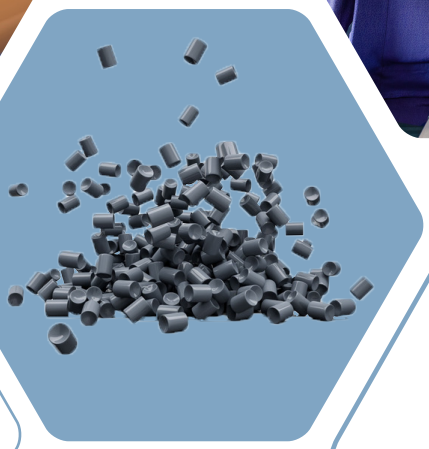
alteo
SMART ALUMINA//



2025

HALOGEN-FREE

FLAME RETARDANT FILLERS

www.alteo-alumina.com

GENERAL PROPERTIES

Aluminium trihydroxide (ATH) is a halogen-free flame retardant filler. When heated above temperatures of approximately 200ºC, an endothermic reaction will take place, liberating 3 molecules of water and thereby removing energy from the combustion zone.

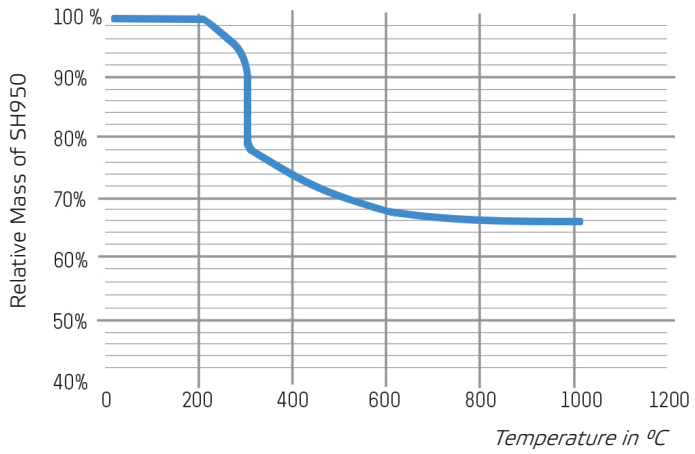
The loss of 34.6 % of its weight as water vapour also dilutes combustible gases.
Furthermore, no toxic smoke or decomposition products are formed during this reaction, making ATH an ideal product to comply with regulations.

Alteo ATH grades have well defined particle size, top cut and oil absorption values. These and other relevant characteristics enable you to choose the grade best suited to your application, processing conditions and required filler loads.

Name	Aluminium trihydroxide
Chemical Formula	$Al(OH)_3$
C.A.S.	21645-51-2
Loss on Ignition	34.6 %
True Density	2.4g/cm^3
Hardness - Mohs scale	3
Refractive index	1.58

Chemical decomposition : $2\ Al(OH)_3 \rightarrow Al_2O_3 + 3H_2O$

Thermogravimetric analysis (TGA) of SH950 grade



FLAME RETARDANT
ATH fillers range

Alteo plant produces a wide range of hydrates and calcined aluminas thereby securing the availability of controlled feedstock for all possible applications.

As the most widely used mineral in flame retardancy applications, Alteo offers a full range of unground, ground, precipitated and blends of aluminium trihydroxide fillers that allow high filler content in multiple resins.

Typical applications and grades used

		Unground	Ground							Blends Optimized Packing Density		Precipitated
Polymer System	**Application**	**SH950**	**SH300**	**SH150**	**SH100**	**SH80**	**SH60**	**SH45**	**SH30**	**FRAT66**	**FRAT33M**	**XFH-15**
Polyester	SMC		●	●	●	●				●	●	●
	BMC		●	●	●							●
	Gel coat				●	●	●	●	●		●	●
	Pultrusion							●	●		●	●
	Synthetic marble	●	●	●	●							●
PVC	PVC rigid			●	●			●	●			●
	PVC - Plastisols			●	●	●	●	●	●			●
	Flooring		●	●	●	●	●					●
Epoxy	Electronic parts - Casting resins		●	●	●	●	●			●	●	●
	Laminates		●	●	●	●	●			●	●	●
Polyurethane	Foam		●	●	●	●					●	●
	Rigid		●	●	●	●	●	●	●			●
	Casting resins		●	●	●	●	●	●	●	●	●	●
Acrylic	Pultrusion				●	●	●	●	●			●
	Injection moulding		●	●	●	●	●	●	●			●
	Artificial marble	●	●	●	●							●
Rubber and latex	Belt conveyors				●			●	●			●
	Elastomers			●	●							●
	Carpet			●	●							●
Others	Paint				●	●	●	●	●			●
	External Thermal Insulation (ETICS)	●	●	●								
	Adhesives - sealants			●	●	●	●	●	●			●

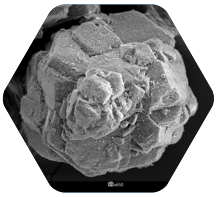
UNGROUND, GROUND & PRECIPITATED ATH

These are our standard grades, used in a wide variety of applications and polymer systems.
Standard grades have a low fines content.

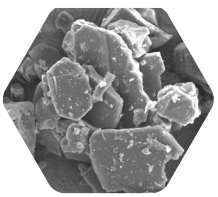
Particle sizes availables starting from 95 µm down to 1.5µm.

		Unground ATH	Ground ATH						Precipitated ATH
		SH950	SH300	SH150	SH100	SH80	SH60	SH45	SH30	XFH-15
Physical properties	**Unit**									
Particle Size Distribution (Laser)										
D10	µm		6	4	4	3	2	1	1	0.7
D50	µm	95	23	13	11	8	6	5	3.5	1.5
D90	µm		65	30	25	18	15	13	10	3.2
Oil Absorption (oleic acid)	ml/100g		20	22	24	27	28	29	30	26
Specific Surface Area (BET)	m^2/g	0.2	0.7	1.2	1.8	2.4	6.4	9.0	11.0	4.0
Moisture Content	%	0.05	0.20	0.20	0.20	0.20	0.30	0.50	0.70	0.25
Loss On Ignition (100-1000°C)	%	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6	34.6
Chemical analysis										
$Al(OH)_3$ - by difference	%	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7
Na_2O total	ppm	1950	1950	1950	1950	1950	1950	1950	1950	2100
CaO	ppm	80	80	90	70	70	70	70	70	85
SiO_2	ppm	60	60	60	60	65	65	65	65	115
Fe_2O_3	ppm	75	75	75	75	75	75	75	75	75

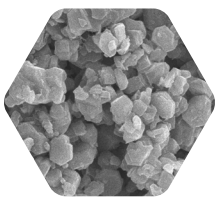
Typical data



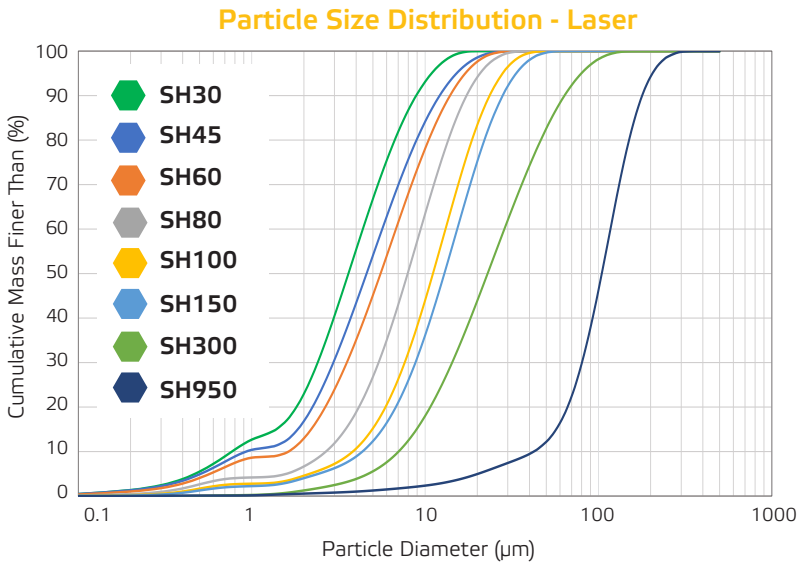
SH950



SH100



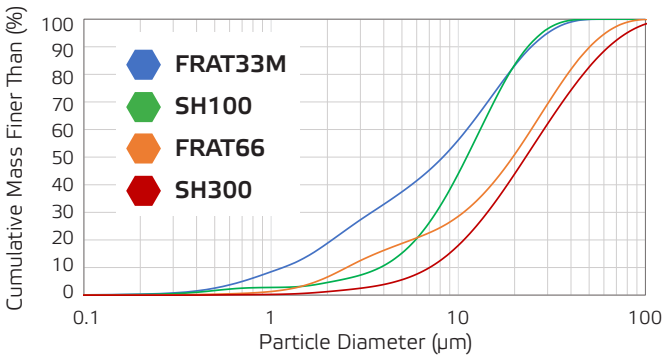
XFH-15

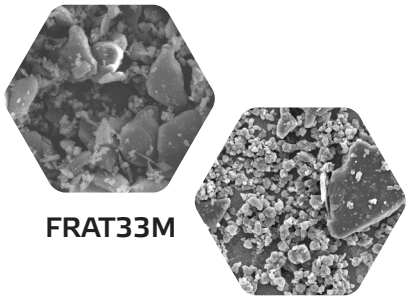


HIGHER FILLER CONTENT

Alteo has developed 2 specific ATH enabling our customers to increase loading levels that are necessary to meet evermore demanding stringent regulations.

Particle Size Distribution - Laser





FRAT33M

FRAT66

		Optimized Packing Density	
		FRAT66	FRAT33M
Physical properties	**Unit**		
Particle Size Distribution (Laser)			
D10	µm	2	2
D50	%	20	10
D90	%	60	22
Oil Absorption (oleic acid)	ml/100g	15	28
Specific Surface Area (BET)	m^2/g	2.0	3.7
Moisture Content	%	0.10	0.20
Loss On Ignition (100-1000ºC)	%	34.6	34.6
Chemical analysis			
$Al(OH)_3$ - by difference	%	99.7	99.7
Na_2O total	ppm	1950	1950
CaO	ppm	70	70
SiO_2	ppm	65	65
Fe_2O_3	ppm	75	75

Typical data

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 **Innovation and Technical Excellence Center**: 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 ambitions.**

Contact our R&D team now at
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 leading integrated supplier of specialty products with the largest production capacity worldwide for calcined, pure and fine alumina.
- A global sales network with 4 regional hubs, 16 offices and more than 35 local warehouses around the world.
- A leading raw material supplier to the following industrial markets: Advanced Ceramics, Thermal Management EV-Batteries, Flame retardant, Polishing, Performance Refractories, Glass.

Design : Emeline MARTEL - Communication

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