



## Americas Regional Product Data

# Reactive Aluminas for Ceramic Applications

Almatis premium reactive aluminas have specially tailored grain sizes to meet the fired density and shrinkage requirements for precision ceramics. As the developer of reactive aluminas for ceramic applications, Almatis has perfected their stringent process control systems to produce tightly controlled products. These Almatis products are dry milled in ceramic lined batch ball mills using ceramic media. The grinding process eliminates the porous agglomerates formed during the calcination process resulting in optimal products for achieving the targeted ceramic application properties. The calcination process used to produce the grinding feedstocks is carefully monitored and controlled to achieve the chemical purity and crystal structure required to consistently achieve the desired end product properties.

Product	A 16 SG			A 1000 SG <sup>(1,2)</sup>			A 152 SG		
	Min	Max	Typical	Min	Max	Typical	Min	Max	Typical
<b>Chemical Composition (%)</b>									
Al <sub>2</sub> O <sub>3</sub> by difference			99.8			99.8			99.8
Na <sub>2</sub> O		0.10	0.07		0.10	0.07		0.10	0.06
Fe <sub>2</sub> O <sub>3</sub>		0.03	0.02		0.03	0.02		0.05	0.02
MgO		0.06	0.05		0.06	0.05	0.05	0.10	0.07
SiO <sub>2</sub>		0.05	0.03		0.05	0.03		0.08	0.03
CaO		0.05	0.02		0.05	0.02		0.05	0.02
B <sub>2</sub> O <sub>3</sub>		0.006	<0.005		0.01	<0.01		0.02	0.015
<b>Physical Properties</b>									
Surface Area BET (m <sup>2</sup> /g)	7.0	11.5	8.9	6.5	11.0	8.2	3.5	4.8	4.3
Wet -325 Mesh Sieve (%)	99.4		99.6	99.2		99.6	99.4		99.8
Cilas d90 (µm)		2.9	2.0		3.5	2.6		3.0	2.7
Cilas d50 (µm)	0.3	0.65	0.5	0.4	0.7	0.6	1.0	1.3	1.2
<b>Ceramic Properties</b>									
Green Density (g/cc)	2.15	2.25	2.17			2.11	2.20	2.40	2.34
Fired Density (g/cc)	3.88		3.89			3.85	3.75		3.81
Shrinkage (%)	17.0	18.5	17.7			17.5	13.5	16.2	15.0
Firing Temperature (°C)		1540			1540			1620	

- (1) This product is also available in a Super Ground Dispersible (SGD) version in which the SG product has been further processed to eliminate the soft agglomerates formed during batch grinding. **The SGD version should be considered if the user's process does not include high energy mixing that will break down the soft agglomerates. Elimination of these agglomerates ensures that additives can be easily homogenized into the reactive alumina.** Verification of the deagglomeration is done by performing the particle size testing without sonication of the test sample.
- (2) Chemistry for this product is assured through process control and verification of incoming alumina chemistry. Although each finished lot is not tested, the product is certified to conform to the chemistry specifications listed.



## Reactive Aluminas for Ceramic Applications

Product	A 15 SG			A 3000 FL <sup>(1)</sup>			A 3500 SG <sup>(1)</sup>		
	Min	Max	Typical	Min	Max	Typical	Min	Max	Typical
<b>Chemical Composition (%)</b>									
Al <sub>2</sub> O <sub>3</sub> by difference			99.8			99.8			99.8
Na <sub>2</sub> O		0.10	0.07		0.10	0.07		0.10	0.07
Fe <sub>2</sub> O <sub>3</sub>		0.03	0.02		0.03	0.02		0.03	0.02
MgO		0.06	0.04			<0.01			<0.01
SiO <sub>2</sub>		0.05	0.02		0.05	0.02		0.05	0.02
CaO		0.05	0.03			0.03		0.06	0.03
B <sub>2</sub> O <sub>3</sub>		0.025	<0.01		0.03	<0.01		0.03	<0.01
<b>Physical Properties</b>									
Surface Area BET (m <sup>2</sup> /g)	3.5	7.5	4.9	1.6	3.8	2.5			1.9
Wet -325 Mesh Sieve (%)	99.4		99.8	99.3		99.8	99.4		99.8
Cilas d90 (µm)	4.0	7.0	5.7						
Cilas d50 (µm)	1.2	2.2	1.7	1.9	3.2	2.7	1.6	3.0	2.8
Cilas d10 (µm)	0.10	0.30	0.20					0.5	0.3
<b>Ceramic Properties</b>									
Green Density (g/cc)	2.49	2.62	2.55			2.52			2.36
Fired Density (g/cc)	3.78		3.84			3.58			3.54
Shrinkage (%)	12.2	13.7	13.0			11.1			12.2
Firing Temperature (°C)	1670			1670			1670		

(1) Chemistry for this product is assured through process control and verification of incoming alumina chemistry. Although each finished lot is not tested, the product is certified to conform to the chemistry specifications listed.

### Standard Packaging

50 lb paper bags - 70 per pallet  
 25 kg paper bags - 40 per pallet  
 2500 lb super sacks - 1 per pallet  
 1 mt super sacks - 1 per pallet  
 Other options available with upcharge

All data is based upon Almatis standard test methods.

All test methods are available upon request.

The typical properties are based upon the actual averages from production data.

The Min/Max data represents Almatis standard product specification data for these products.



## Contacts for sales, technical information and application assistance

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