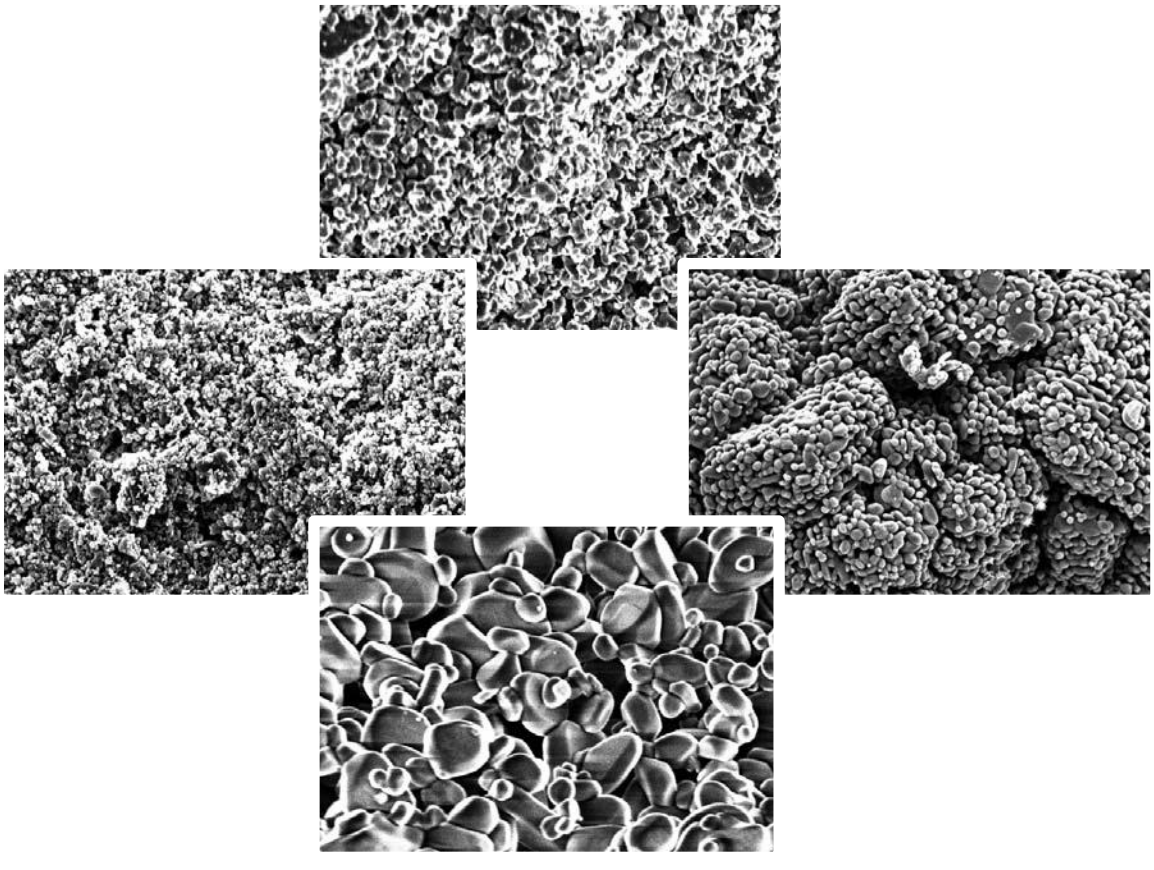
ALMATIS

Reactive and Calcined Aluminas for Ceramics



Thermally Reactive Aluminas for Ceramics

		A 16 SG			A 1000 SG[1,2]			A 152 SG		
Properties / Method	**Unit**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**
Specific Surface Area BET	[m^2/g]	8.9	7.0	11.5	7.6	6.5	11.0	4.3	3.5	4.8
Particle Size D50*	[µm]	0.46	0.30	0.65	0.5	0.4	0.7	1.2	1.1	1.4
Particle Size D90*	[µm]	1.5		1.8	1.6		2.5	2.5		3.0
Wet -325 Mesh Sieve	[%]	99.6	99.4		99.6	99.2		99.8	99.4	
Chemical Composition										
Al_2O_3 by difference	[%]	99.8			99.8			99.8		
Na_2O	[%]	0.07		0.10	0.07		0.10	0.06		0.10
Fe_2O_3	[%]	0.02		0.03	0.02		0.03	0.02		0.05
SiO_2	[%]	0.03		0.05	0.03		0.05	0.03		0.08
CaO	[%]	0.02		0.05	0.02		0.05	0.02		0.05
MgO	[%]	0.05		0.06	0.05		0.06	0.07	0.05	0.10
B_2O_3	[%]	0.002		0.006	0.005		0.01	0.015		0.02
Ceramic Properties										
Green Density	[g/cm^3]	2.17	2.15	2.25	2.11			2.34	2.20	2.40
Fired Density	[g/cm^3]	3.89	3.88		3.85			3.81	3.75	
Shrinkage	[%]	17.7	17.0	18.5				15.0	13.5	16.2
Firing Temperature 1 h Soak Time	[°C]		At 1540			At 1540			At 1620	

The typical product properties are based upon the actual averages from production data. The min-max data show our standard product specification data for these products.

All data are based upon Almatis standard test methods. All test methods are available upon request.

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.

2) 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.

* Laser granulometry Bettersizer S3 Almatis global standard

Reactive Aluminas for Ceramics

		A 15 SG			A 3500 SG[1]		
Properties / Method	**Unit**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**
Specific Surface Area BET	[m^2/g]	4.9	3.5	7.5	1.9		
Wet -325 Mesh Sieve	[%]	99.8	99.4		99.8	99.4	
Particle Size D10*	[µm]	0.4	0.3	0.5	0.8	0.5	1.0
Particle Size D50*	[µm]	1.8	1.2	2.2	2.8	1.6	3.0
Particle Size D90*	[µm]	6.1	4.5	7.5			
Chemical Composition							
Al_2O_3 by difference	[%]	99.8			99.8		
Na_2O	[%]	0.07		0.10	0.07		0.10
Fe_2O_3	[%]	0.02		0.03	0.02		0.035
SiO_2	[%]	0.02		0.05	0.02		0.05
CaO	[%]	0.03		0.05	0.03		0.06
MgO	[%]	0.04		0.06	0.01		
B_2O_3	[%]	0.01		0.025	0.01		0.03
Ceramic Properties							
Green Density	[g/cm^3]	2.55	2.49	2.62			
Fired Density	[g/cm^3]	3.84	3.78				
Shrinkage	[%]	13.0	12.2	13.7			
Firing Temperature 1 h Soak Time	[°C]		At 1670				

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Calcined Aluminas for Ceramics

Normal and Intermediate Soda Products

Unground		A 2			A 35			CT 800		
Properties / Method	**Unit**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**
Specific Surface Area BET	[m^2/g]	0.5		0.7	0.5	0.35	0.7	0.75	0.65	0.85
LOI 300 to 1100°C	[%]	0.2								
Green Density	[g/cm^3]				2.27			2.28	2.22	2.34
+100 Mesh** / 0.150 mm	[%]	5			5			5		
+200 Mesh** / 0.075 mm	[%]	60			60			60		
+325 Mesh** / 0.045 mm	[%]	85			85			85		
Chemical Composition										
Al_2O_3 by difference	[%]	99.6			99.7			99.7		
Na_2O	[%]	0.25		0.35	0.13		0.18	0.11		0.15
Fe_2O_3	[%]	0.02		0.035	0.02		0.035	0.02		0.04
SiO_2	[%]	0.02		0.03	0.01		0.03	0.01		0.03
CaO	[%]	0.03		0.06	0.03		0.06	0.03		0.06
B_2O_3	[%]	0.015		0.035	0.003		0.03	0.003		0.03
		A 2 -325 CR			A 35 -325 CR			CT 800 SG		
Properties / Method	**Unit**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**
Specific Surface Area BET	[m^2/g]	0.7		1.1	0.8		1.1	1.00	0.80	1.50
Particle Size D50*	[µm]	5.2	4.1	6.3	5.1			3.4	2.5	4.0
Wet -325 Mesh Sieve	[%]	99.3	99.0		99.3	99.0				
Particle Size >20µm*	[%]							1.2		3.0
Fe_2O_3	[%]	0.02		0.04	0.02		0.04			
SiO_2	[%]	0.03		0.10	0.02		0.04	0.02		0.04

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* Laser granulometry Bettersizer S3 Almatis global standard

** Tyler Mesh

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Calcined Aluminas for Ceramics

Low Soda Products

		A 3500			A 10			CL 3000			A 14		
Properties / Method	**Unit**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**
Specific Surface Area BET	[m^2/g]	0.5	0.35	0.60	0.2			0.7	0.60	0.75	0.55	0.45	0.70
[Primary Crystal Size D50*]**	[µm]	2.5	2.3	3.2	4.5	3.5	5.5	1.9	1.6	2.4	1.9	1.6	2.4
Green Density**	[g/cm^3]	2.27						2.27	2.24	2.32	2.31		
Chemical Composition													
Al_2O_3 by difference	[%]	99.8			99.7			99.8			99.8		
Na_2O	[%]	0.08		0.10	0.08		0.13	0.04		0.08	0.03		0.05
Fe_2O_3	[%]	0.02		0.035	0.02		0.05	0.02		0.04	0.01		0.05
SiO_2	[%]	0.01		0.03	0.04		0.12	0.02		0.04	0.02		0.05
CaO	[%]	0.02		0.06	0.03			0.03		0.06	0.03		0.06
B_2O_3	[%]	0.002		0.03	0.10		0.22	0.02		0.05	0.03		0.06

					A 10 -325[1]						A 14 -325		
Properties / Method	**Unit**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**	**Typical**	**Min.**	**Max.**
Specific Surface Area BET	[m^2/g]				0.5						0.8	0.6	1.1
Particle Size D50*	[µm]				7.9	6.5	9.7				4.9	3.5	6.1
Wet -325 Mesh Sieve	[%]				98.5	95.0					98.7	95.0	
Chemical Composition													
Al_2O_3 by difference	[%]				99.7						99.8		
Na_2O	[%]				0.08		0.13				0.04		0.05
Fe_2O_3	[%]				0.02		0.07				0.01		0.04
SiO_2	[%]				0.04		0.14				0.03		0.08
B_2O_3	[%]				0.08		0.22				0.03		0.06

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** After lab grind

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 are available with upcharge

Contact for sales, technical information and application assistance

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