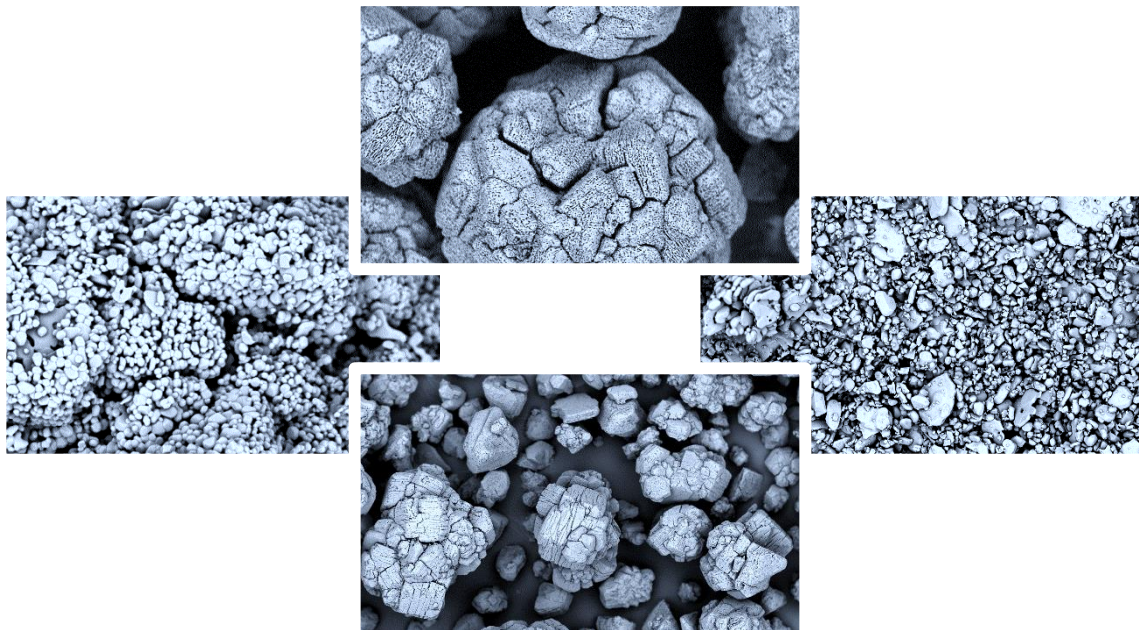




Higher Purity Calcined Aluminas

Extra Low Soda (XLS) and Ultra Low Soda (ULS) Products





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Product Introduction

Almatis Calcined Aluminas

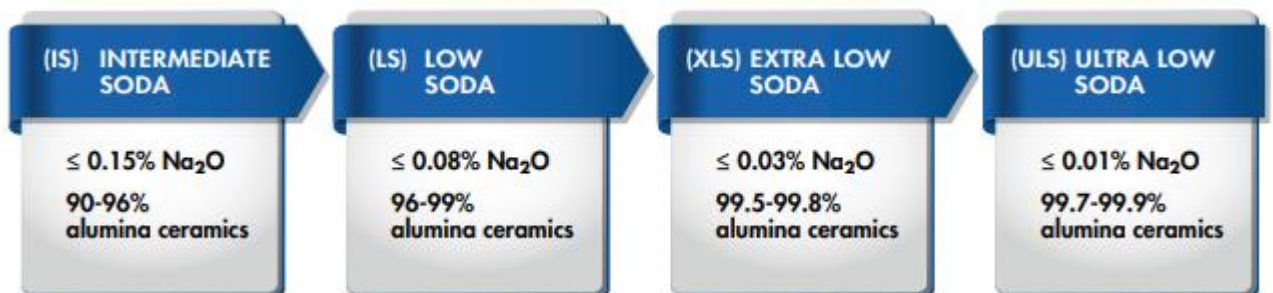
Almatis offers a comprehensive range of calcined alumina products specifically developed to optimize customer purity requirements. The standard intermediate soda products (IS) fit the needs of customers producing >90 % Al₂O₃ ceramics, while low soda products (LS) are valued in electronic applications of >96 % alumina ceramics. Specialty applications require higher purity aluminas: Almatis X-tra low soda products (XLS) for semiconductor handling equipment and ultra low soda products (ULS) for the lowest dielectric loss ceramic components.

Higher Purity Aluminas

Almatis specialty product line of XLS (X-tra Low Soda) and ULS (Ultra Low Soda) offer an aluminum oxide content of up to >99.95 % on elemental basis. These materials are available with 0.5 μm, 1 μm and 2 μm primary crystals in unground or super ground form as well as with and without addition of MgO.

Applications

These new products are ideal for technical and advanced ceramic applications where high sintered density and low impurities are necessary. Low impurity content improves the performance and properties of the alumina components in dielectric, wear resistant, structural and corrosive environments.





Higher Purity Calcined Aluminas

Extra Low Soda (XLS) Products

Chemical Composition Unground	Unit	CT 1200 XLS UG	CL 2500 XLS UG	
Al ₂ O ₃ by difference	[%]	> 99.8	> 99.8	
Na ₂ O	[%]	≤ 0.03	≤ 0.03	
Fe ₂ O ₃	[%]	≤ 0.03	≤ 0.025	
SiO ₂	[%]	≤ 0.03	≤ 0.03	
CaO	[%]	≤ 0.03	≤ 0.03	
B ₂ O ₃	[%]	≤ 0.03	≤ 0.02	
Physical Properties (typicals)				
Specific surface area / BET	[m ² /g]	1.2	0.90	
Primary Crystal Size / D50 Cilas Compacité	[μm]		1.7	
Particle Size wet sieve >63 μm	[%]	75	80	
Press density	[g/cm ³]		2.22	
Chemical Composition Superground	Unit	CT 3000 XLS SG*	CT 1200 XLS SG*	CL 2500 XLS SG
Al ₂ O ₃ by difference	[%]	>99.8	> 99.8	> 99.8
Na ₂ O	[%]	≤ 0.03	≤ 0.03	≤ 0.03
Fe ₂ O ₃	[%]	≤ 0.02	≤ 0.03	≤ 0.025
SiO ₂	[%]	≤ 0.028	≤ 0.04	≤ 0.03
CaO	[%]	≤ 0.02	≤ 0.03	≤ 0.03
B ₂ O ₃	[%]	≤ 0.005	≤ 0.03	≤ 0.02
Physical Properties (typicals)				
Specific surface area / BET	[m ² /g]	7.8	3.0	1.0
Particle Size / D50 Cilas	[μm]	0.5	1.3	3.5
Particle Size / D90 Cilas	[μm]	2.0	3.2	
Particle Size wet sieve >20μm	[%]			2.0
Green density / 90 MPa	[g/cm ³]	2.25	2.32	
Fired density	[g/cm ³]	3.91 at 1540°C	3.92 at 1670°C	
Shrinkage	[%]	16.8	16	

* Product available with and w/o MgO addition.

All data are based upon Almatix standard test methods.
The typical properties are based upon the actual averages from production data.



Higher Purity Calcined Aluminas

Ultra Low Soda (ULS) Products

Chemical Composition Unground	Unit	CT 1200 ULS UG	CL 2500 ULS UG	CL 3000 ULS UG	
Al ₂ O ₃ by difference	[%]	> 99.9	> 99.9	> 99.9	
Na ₂ O	[%]	≤ 0.01	≤ 0.01	≤ 0.01	
Fe ₂ O ₃	[%]	≤ 0.02	≤ 0.02	≤ 0.02	
SiO ₂	[%]	≤ 0.01	≤ 0.01	≤ 0.01	
CaO	[%]	≤ 0.01	≤ 0.01	≤ 0.01	
B ₂ O ₃	[%]	≤ 0.005	≤ 0.005	≤ 0.01	
Physical Properties (typicals)					
Specific surface area / BET	[m ² /g]	1.2	0.95	0.6	
Primary Crystal Size / D50 Cilas Compacité	[μm]		1.7	2.2	
Particle Size wet sieve >63 μm	[%]	75	80	80	
Press density	[g/cm ³]		2.22	2.28	
Chemical Composition Superground	Unit	CT 3000 ULS SG*	CT 1200 ULS SG*	CL 2500 ULS SG	CL 3000 ULS SG
Al ₂ O ₃ by difference	[%]	>99.9	>99.9	> 99.9	> 99.9
Na ₂ O	[%]	≤ 0.01	≤ 0.01	≤ 0.01	≤ 0.01
Fe ₂ O ₃	[%]	≤ 0.02	≤ 0.02	≤ 0.02	≤ 0.02
SiO ₂	[%]	≤ 0.02	≤ 0.02	≤ 0.01	≤ 0.01
CaO	[%]	≤ 0.015	≤ 0.015	≤ 0.01	≤ 0.01
B ₂ O ₃	[%]	≤ 0.005	≤ 0.005	≤ 0.005	≤ 0.01
Physical Properties (typicals)					
Specific surface area / BET	[m ² /g]	7.0	3.0	1.2	1.0
Particle Size / D50 Cilas	[μm]	0.5	1.3	3.5	4.0
Particle Size / D90 Cilas	[μm]	2.0	3.2		
Particle Size wet sieve >20μm	[%]			2.0	0.1
Green density / 90 MPa	[g/cm ³]	2.22			
Fired density	[g/cm ³]	3.91 at 1540°C			
Shrinkage	[%]	17			

* Product available with and w/o MgO addition.

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



Higher Purity Calcined Aluminas Extra Low Soda (XLS) and Ultra Low Soda (ULS) Products

Standard Packaging

- 25 kg paper bags
- 1000 kg big bag, discharge sleeve and shrink wrapped



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