

Alumina-Rich Spinel

AR 78

Chemical Composition [%]	Unit	Typical	All Sizes ¹		-20 micron	
			Min	Max	Min	Max
Al ₂ O ₃ by difference	[%]		74.0		74.0	
MgO	[%]	22.5	20.5	24.0	20.5	24.0
CaO	[%]	0.24		0.30		0.30
SiO ₂	[%]	0.10		0.15		0.20
Na ₂ O	[%]	0.09		0.32		0.32
Fe ₂ O ₃	[%]	0.15		0.25		0.25
Fe Magnetic	[%]	0.005		0.02		0.02
Physical Properties						
Bulk Specific Gravity	[g/cm ³]	3.3	3.2		3.2	
Apparent Porosity	[%]	1.8		2.6		2.6
Water Absorption	[%]	0.5		0.8		0.8

1) All sizes excluding - 20 micron

Particle Size Distribution

DIN ² [mm]	Unit	Typical	Min	Max	DIN ² [mm]	Unit	Typical	Min	Max
0.5-1 mm					- 90 micron				
+ 1.00 mm	[%]	3	0	5	+ 0.090 mm	[%]	5	0	10
+ 0.71 mm	[%]	47			+ 0.063 mm	[%]	8		
+ 0.50 mm	[%]	43			- 0.063 mm	[%]	87		
- 0.50 mm	[%]	7	0	10	Particle Size D50 ³	[µm]	19	11	29
0-0.5 mm					- 45 micron				
+ 0.50 mm	[%]	5	0	10	+ 0.045 mm	[%]	3	0	10
+ 0.25 mm	[%]	41			Particle Size D50 ³	[µm]	11	5	16
+ 0.125 mm	[%]	25			- 20 micron				
+ 0.063 mm	[%]	13			+ 0.020 mm ⁴	[%]	3	0	7
+ 0.045 mm	[%]	5			Particle Size D50 ³	[µm]	3.0	0	5.0
- 0.045 mm	[%]	11							

The typical product properties are based upon the actual averages from product data. The Min/Max data show our standard product specification data for these products. All data are based upon Almatis standard test methods. Test methods are available upon request.

Other sizes are available upon request.

2) Sieve analysis as per DIN/ISO 3310/1

3) Laser granulometry Bettersizer S3 Almatis global standard

4) Wet -20 micron sieve



Alumina-Rich Spinel

AR 90

Chemical Composition	Unit	Typical	Min	Max
Al ₂ O ₃ by difference	[%]		87.0	
MgO	[%]	9.5	8.0	11.0
CaO	[%]	0.14		0.25
SiO ₂	[%]	0.06		0.18
Na ₂ O	[%]	0.15		0.38
Fe ₂ O ₃	[%]	0.06		0.17
Fe Magnetic	[%]	0.005		0.02
Physical Properties				
Bulk Specific Gravity	[g/cm ³]	3.4	3.3	
Apparent Porosity	[%]	2		3.0
Water Absorption	[%]	0.6		0.9

Particle Size Distribution

DIN*	Unit	Typical	Min	Max	DIN*	Unit	Typical	Min	Max
3-6 mm					0.5-1 mm				
+ 6.30 mm	[%]	1	0	10	+ 1.00 mm	[%]	2	0	10
+ 5.00 mm	[%]	27			+ 0.71 mm	[%]	46		
+ 4.00 mm	[%]	40			+ 0.50 mm	[%]	46		
+ 3.35 mm	[%]	24			- 0.50 mm	[%]	6	0	10
- 3.35 mm	[%]	8	0	10	0-0.5 mm				
1-3 mm					+ 0.50 mm	[%]	5	0	10
+ 3.35 mm	[%]	2	0	10	+ 0.25 mm	[%]	43		
+ 2.00 mm	[%]	48			+ 0.125 mm	[%]	22		
+ 1.40 mm	[%]	27			+ 0.063 mm	[%]	13		
+ 1.00 mm	[%]	18			+ 0.045 mm	[%]	6		
- 1.00 mm	[%]	5	0	10	- 0.045 mm	[%]	11		

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Other sizes are available upon request.

* Sieve analysis as per DIN/ISO 3310/1

Magnesium Aluminate Spinels

Product Description

Almatris Alumina-Rich Spinels AR 78 and AR 90

Manufactured from high purity raw materials, Magnesium Aluminate Spinel has excellent refractory properties and is recognized as a superior refractory aggregate.

Almatris Spinels AR 78 and AR 90 are eminently suitable for castables in steel ladles. It is generally agreed that the spinel content of such castables should be in the order of 15-30%. AR 78 and AR 90 are distinguished by their chemistries (78% and 90% alumina respectively). They are available in a variety of closely controlled sizes, from -20 micron to 3-6 mm. Within spinel containing refractory formulations AR 78 is preferably used for the fines to the medium sized fractions, whereas AR 90 shows most benefit when used in the medium to coarse size grain fractions.

Laboratory investigations and market experiences show that spinel addition to aluminous refractory bodies, prefired shapes, and monolithics considerably improve their resistance to slag attack and their thermal shock resistance.

The hot modulus of rupture and the thermo-mechanical strength can be increased considerably by addition of alumina-rich spinel to the mix.

Standard Packaging

- Bags: 25 kg
- Big bags

Contact for sales, technical information and application assistance

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