



Offering a wide variety of grain and flour sizes to fit the needs of each foundry.

In the investment casting industry, the main use of aluminosilicate is in backup slurries and as a backup stucco. Aluminosilicate is produced from a naturally occurring mineral, calcined mullite, that is precisely sized as either flour or grain. It is available in four alumina contents: 43%, 47%, 60% and 70%. The standard alumina content in the investment casting industry is 47%, which provides a very economical and consistent product. These products are low in iron, alkaline, and alkaline earth elements.

Material Properties*

	M43	M47	M60	M70
Bulk Density (ASTM C-357, gm/cc)	2.54 (≥ 2.50)	2.58 (≥ 2.60)	2.73 (≥ 2.70)	2.80 (≥ 2.75)
Apparent Porosity (%)	4.50	4.00	4.00	4.00
PCE	35 (3245°F/1785°C)	35 (3245°F/1785°C)	37 (3308°F/1820°C)	39 (3390°F/1866°C)

Chemical Analysis & Minerology (%)*

	M43	M47	M60	M70
Aluminum Oxide (Al ₂ O ₃)	43.40 (≥ 42.00)	46.80 (≥ 46.00)	59.3 (≥ 58.50)	67.70 (≥ 67.00)
Silicon Dioxide (SiO ₂)	53.00	50.00	36.50	27.70
Titanium Dioxide (TiO ₂)	1.89	1.89	2.50	2.80
Ferric Oxide (Fe ₂ O ₃)	0.90	0.95 (≤ 1.0)	1.37 (≤ 1.50)	1.50 (≤ 1.75)
Calcium Oxide (CaO)	0.04	0.04	0.05	0.06
Magnesium Oxide (MgO)	0.08	0.08	0.10	0.07 (≤ 0.40)
Sodium Oxide (Na ₂ O)	0.04	0.09	0.03	0.07 (≤ 0.40)
Potassium Oxide (K ₂ O)	0.09	0.09	0.07	0.05 (≤ 0.40)
Phosphorous Pentoxide (P ₂ O ₅)	0.09	0.09	0.10	0.11
Mullite	60.00	65.00	77.00	87.00
Glass	15.00	20.00	23.00	13.00
Cristobalite	25.00	15.00	Tr	Tr

*These results are based on the testing methods, frequency and procedures of Ransom & Randolph or its approved suppliers. The levels referenced herein are only for general guidance and do not constitute a firm specification.

Grain Size Specifications (% Retained)*

USS Sieve Grade	8 (2.36 mm)	12 (1.70 mm)	14 (1.40 mm)	20 (850 μm)	30 (600 μm)	40 (425 μm)	50 (300 μm)	70 (212 μm)	100 (150 μm)	140 (106 μm)	200 (75 μm)	270 (53 μm)	325 (45 μm)	PAN **
10x18 (2)	0-3	10-25		60-82	0-15									0-5
14x28 (1,2)		0	≤1	30-55	35-45	10-25	≤5							≤1.5
16x30 (2,3)			0-3	65-75		≤4								≤1
22S (1,2,3)			TR	15-25	32-47	27-37	4-10						≤3	TR
35S (1,2,3)			TR	1-5	21-38	40-54		9-19		2-8				≤3
50S (2,3)				0	1-9	22-37	26-40	12-22	6-16	1-6				≤3
60S (1,2,3)					0	0-5	30-48	30-44	9-22	2-7				≤3
20x50 (1,2,3)			TR	0-8	20-50		50-72						≤2	TR
25x80 (2,3)				0-5	≥20 30 avg	≥20 30 avg	80-93	7-12						≤3
50x100 (2)						TR	5-20		70-86	0-15	≤3		≤1	TR
60x200 (2)							0	0-11		65-90	5-20	0-6		≤3
200 IC-C (2)									TR		15-25			75-85
325 IC-C (2,3,4)									TR				5-15	85-95

*Grade available in Al₂O₃ content: (1) 43%, (2) 47%, (3) 60%, and (4) 70%. These results are based on the testing methods, frequency, and procedures of Ransom & Randolph or its approved suppliers. The levels referenced herein are only for general guidance and do not constitute a firm specification.

**PAN Designates the percentage of material passing the last reported screen for each size.

Safety

North America: Danger. Contains crystalline silica. May cause cancer. Causes damage to lungs through prolonged or repeated exposure by inhalation. See SDS for more information.

EU: Danger. Contains respirable crystalline silica. May cause damage to lungs through prolonged or repeated exposure. See SDS for more information.

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