

			Portland Cement	Ciment Fondu	Fire Clay	Kyanite Clay	Perlite	Silica Sand	Vermiculite	Water	Total
			1.5	0	2	0	1.5	2	0	2.2	9.18
			16.34%	0.00%	21.78%	0.00%	16.34%	21.78%	0.00%	23.76%	100.00%
Chemical Name	Chemical Formula	Reducing Temperature	Content (%)	Content (%)	Content (%)	Content (%)	Content (%)	Content (%)	Content (%)		Content (%)
Aluminum Oxide	Al2 O3	2100 °C 3812 °F	6.55%	37.00%	27.05%	60.09%	16.87%	0.09%	11.33%		9.738%
Silicon Dioxide	Si O2	1800 °C 3272 °F	22.45%	5.40%	58.20%	37.58%	70.30%	99.41%	32.58%		49.483%
Ferric Oxide	Fe2 O3	700 °C 1292 °F	4.21%	16.60%	2.00%	0.91%	1.41%	0.02%	9.21%		1.358%
Titanium Dioxide	Ti O2	1800 °C 3272 °F		3.60%	0.70%	0.92%	0.19%	0.02%	2.12%		0.188%
Calcium Oxide	Ca O		61.75%	35.80%		0.05%	1.87%	0.09%	3.54%		10.413%
Magnesium Oxide	Mg O		3.74%	1.20%	0.20%	0.06%	0.47%	0.03%	24.79%		0.738%
Sulfur Trioxide	S O3			0.40%			0.19%				0.031%
Potassium Oxide	K2 O		0.65%		2.10%		4.69%	0.02%	4.25%		1.334%
Sodium Oxide	Na2 O		0.65%		1.00%		3.75%	0.07%			0.952%
Phosphorus Pentoxide	P2 O5				0.02%						0.004%
Manganese Oxide	MN O				0.01%						0.002%
Manganese Dioxide	Mn O2						0.09%				0.015%
Ferrous Oxide	Fe O						0.09%				0.015%
Barium	Ba						0.05%				0.008%
Lead Oxide	Pb O						0.03%				0.005%
L.O.I.					8.72%			0.25%			1.954%
Alkalies						0.39%					
Water	H2 O								11.33%	100.00%	23.76%
Other									0.85%		
			100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%		100.00%
Softening Point	From:						1600 °C				
	To:						2000 °C				
	From:						2912 °F				
	To:						3632 °F				
Fusion Point	From:						2300 °C	1690 °C	1200 °C		
	To:						2450 °C	1690 °C	1300 °C		
	From:						4172 °F	3074 °F	2192 °F		
	To:						4442 °F	3074 °F	2372 °F		

Note: Parts of water based on cement content, more water may be necessary once clay is added to the paste to get the desired consistency.

Disclaimer: This is not a scientific analysis, it is ballpark, to be used as a point of reference to determine approximate percentages of elements contained in mixed Refractory Cement. (This document Copyright 2006 curtronics.com, Curtis J Blank, and may be reproduced freely as long as it is not altered in any way, shape, or form.)