FERRO
Where innovation delivers performance™

Technical Information

IS09

Performance Colors & Glass

Refractory Materials

Refractory materials have to fulfill certain properties in their application. Protection against re-oxidation, anti-sticking, glossy surfaces or resistance against thermal shock or mechanical stress are only examples for these requirements.

Ferro, as a leader of glass producer, offers a broad range of glasses for the application in refractory materials. Our materials can be used in different applications and can be applied as sinter agents, coatings or additives to introduce different properties.

We offer ready to use glazes as well as glasses. Our glasses can be used as a flux which allows reduced temperatures in the firing cycles. Reduce costs for equipment, energy and protection of the environment are advantages of our products.

The glazes and glasses for graphite crucibles application protect the graphite against oxidation and are used for non-ferrous metal alloy melts. Our high temperature glazes are used e.g. for coatings of alumina oxide substrates or mullite. We offer glasses and glazes to introduce boron in a high content to the coating material.

The glasses can be mixed in your raw material recipes and we are able to deliver the materials in different grain size distributions. Our standard is 3-5 % residue on a 63 µm sieve or 5-10 % on a 63 µm. Finer material with 1-3 % residue on a 40 µm sieve on request.

Typical products for the refractory industry are listed in table 1. Additional custom compositions are available upon request.

Table 1: Typical products for the refractory industry

	Density	C.T.E (20-400°C)	Tg	SP	HST	Fp	Comment
	g/cm^3	x 10^{-7} 1/K	°C	°C	°C	°C	
763109200	n.a.	n.a.	n.a.	660	845	975	
90 158	2,4	85	514	685	780	n.a.	
40 010 TM	n.a.	65	705	n.a.	n.a.	n.a.	Firing range 1180-1300°C
905735	2,6	96	498	530	680	n.a.	
VTR213	2,2	40	600	910	1280	n.a.	
14019	2,6	107	520	570	n.a.	n.a.	
32270	2,6	97	500	550	n.a.	n.a.	
FNO17101	n.a.	93	560	560	n.a	n.a.	
37214	2,6	81	570	620	n.a.	n.a.	
DV8603A	n.a.	57	n.a.	650	710	740	
40 580 TF	2,6	60	745	1180	1260	n.a.	
TGL6686aTF	n.a.	31	836	>1350	>1350	>1350	Firing range 1470 -1510°C

C.T.E - coefficient of thermal expansion
Tg - transformation temperature
SP - softening point (heating microscopy)
HST - half sphere temperature (heating microscopy)
Fp - Flow point