

FERRO GLAZE FRIT DATA

In calculating linear coefficients of expansion (c/exp), Hall [JACS, 13(3) 194 (1930)] factors were used whenever available. M&H factors were used otherwise. To transpose to decimals, multiply by 10^{-6} . When available, measured expansion values are also presented as an aid in the practical use of these frits.

Fusion and Flow temperatures shown are those used by the frit Control Department in quality control testing procedures. The Fusion temperature used are somewhat higher than the actual softening points of the frits, and the Flow temperatures are those selected to allow for a valid comparison of flow characteristics of a frit sample versus the established "Standard" for that frit.

The code numbers used to indicate percent oxide composition range for each frit are as follows:

1 = Present, but less than 5%. **2** = 5% to 15%. **3** = 15% to 25%. **4** = 25% to 50% **5** = over 50%.

General Description, Typical Use and % Composition Range (Theoretical)

* = Measured, otherwise calculated. ** = Contains items reportable under SARA III regulations, refer to individual MSDS for additional details.

FRIT	DESCRIPTION	TYPICAL USE	10^{-6} CTE	°F FUSION	°F FLOW	CaO	OTHER **	AL ₂ O ₃	B ₂ O ₃	SiO ₂	Alkalies
CC250	Alkaline, alkaline earth alumina borosilicate	A well-balanced composition typically used for all-fritted glossy glazes in the range Orton cone 07-05	6.92*	1500	1700	2	--	2	3	5	2
CC257	Alkaline earth alumina silicate	Primarily used as a fritted source of barium	6.8*	1700	--	1	BaO = 37.8 TiO = 1	2		4	--
CC263	Alkaline, alkaline earth alumina borosilicate	A well-balanced composition without barium. Typically used as an all-fritted glossy glaze in the general range Orton cone 04-4.	5.77*	--	1850	2	MgO = 1 SrO = 1 ZrO ₂ = 1	2	3	5	2
CC265	Alkaline earth alumina borosilicate	Similar to CC254, but without the barium. Primarily use in floor tile glazes.	7.54	1500	1850	3	ZrO ₂ = 2	2	3	4	1
CC279	Alkaline, alkaline earth alumina borosilicate	Cone 07-06 all-fritted glossy glazes.	8.32	1850	1600	2	MgO = 1 SrO = 1 ZnO = 1 ZrO ₂ = 1 F = 1	2	3	5	2
FA233	Alkaline earth alumina borosilicate	A well-balanced composition, typically used to make an all-fritted opaque white glossy glaze in the range Orton cone 07-05	6.8	1650	1750	2	ZnO = 2.1 ZrO ₂ = 2	2	3	4	1
FB276-P	Alkaline, alkaline earth alumina borosilicate	A well-balanced composition typically used for an all-fritted clear, glossy glaze maturing in the range Orton cone 07-05.	6.24*	--	1750	2	MgO = 1 SrO = 1 ZrO ₂ = 1	2	2	5	2
FB284-M	Alkaline, alkaline earth alumina borosilicate	A barium-containing frit typically used in partially fritted wall tile glazes, and in mat art ware and hobby glazes.	7.52*	--	1650	--	BaO = 28.7 ZrO ₂ = 1	2	2	4	2
3110	Alkaline, alkaline earth alumina borosilicate	Primarily used as a flux frit (body, glaze) for the art ware and hobby fields.	10.1	1400	1700	2	--	1	1	5	3

General Description, Typical Use and % Composition Range (Theoretical)

* = Measured, otherwise calculated. ** = Contains items reportable under SARA III regulations, refer to individual MSDS for additional details.

FRIT	DESCRIPTION	TYPICAL USE	10 ⁻⁶ CTE	°F FUSION	°F FLOW	CaO	OTHER **	AL ₂ O ₃	B ₂ O ₃	SiO ₂	Alkalies
3124	Alkaline, alkaline earth alumina borosilicate	A flux frit for many partially fritted glazes, especially in the wall tile industry.	7.9	1600	1750	2	--	2	2	5	2
3134	Alkaline, alkaline earth borosilicate	A general-purpose flux frit for partially fritted glazes.	9.6	1450	1600	3	--	1	3	4	2
3195	Alkaline, alkaline earth alumina borosilicate	A well-balanced formulation typically used as an all-fritted, cone 06/04 glossy glaze.	6.4*	1500	1700	2	--	2	3	4	2
3225	Alkaline, alkaline earth alumina borosilicate	A viscous, high temperature frit primarily used in abrasive bonds, particularly for hones.	4.92	1650	2300	1	MgO = 1	2	3	5	1
3249	Alkaline earth alumina borosilicate	Used as an abrasive bond flux, and in metal protection applications. Also used as a low expansion component to overcome crazing.	4.0	1900	2300	1	MgO = 2	2	4	4	--
3269	Alkaline, alumina borosilicate	Primarily used in art ware, hobby, and tile glazes.	9.3*	1400	1500	1	ZnO = 1 F = 1	2	3	4	3
3270	Alkaline, alkaline earth alumina borosilicate	Primarily used in roofing tile glazes, plus some usage to obtain copper blue shades.	8.7	1500	1600	2	--	2	3	4	2
3278	Alkaline, alkaline earth borosilicate	Used in partially fritted glazes for wall tile, and art ware.	8.6*	1400	1550	2	--		3	5	3
3292	Alkaline, alkaline earth alumina borosilicate	A well-balanced composition for all-fritted glossy glazes in the range Orton cone 1 to 4, and compatible with most commercial glaze stains.	7.5	1650	1900	2	MgO = 1 SrO = 1	2	2	5	2
3336	Alkaline, alkaline earth alumina borosilicate	A well-balanced composition yielding a highly opacified white glaze when used in all-fritted formulations in the range Orton cone 05-3. Also used in partially fritted fast-fire glazes.	5.0*		1850	2	ZnO = 1.1 ZrO ₂ = 2	2	2	5	2
3403	Lead monosilicate type frit	A versatile flux frit where high lead without boric oxide is desirable.	9.0*	1350	1450	1	PbO = 67.8	1	--	3	1
3470	Alkaline earth lead alumina borosilicate with zinc	Used in glossy, mat, and specialty glazes for wall tile, art ware, and the hobby market.	7.5	1350	1450	2	PbO = 40.7 ZnO = 9.1	2	2	4	1
3482	Alkaline, lead borosilicate with titania	Primarily used in mat glazes for art ware, wall tile, and the hobby market.	9.5*	1400	1700	1	PbO = 29.5 TiO ₂ = 2 F = 1		2	4	1
3565	Alkaline earth, lead alumina borosilicate	Primarily used in tableware glaze and general potteries glazes firing Orton cone 1 to cone 5.	6.2*	1600	1900	2	PbO = 16.2 ZrO ₂ = 1	2	2	5	1
3846-2	Leadless antimony	Typically used "across the board" as a blend for other frits to achieve a soft white opacity.	11.5	1450	--	5.7	SbO ₃ = 2 K ₂ O = 1 Na ₂ O = 3 ZnO = 1 F ₂ = 2	2	2	5	--
5301	Alkaline, alumina borosilicate	Used for "crackle" glazes in the range Orton cone 06-04.	11.41	1400	1500	1	F = 2	2	2	4	3