

FRITS

Laguna Clay offers a variety of Frits by Ferro. Frits are produced from various combinations of raw materials that are fused into a vitreous or semi-vitreous substance. Depending on the firing temperature and the desired results, frits may be used as a major component or a minor additive in glaze production.

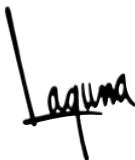
The use of frits also allows for the incorporation of certain raw materials in the creation of glazes. Some materials, which alone could be hazardous, become safer components when fritted. Recognized benefits of frit include the ability to fire at a lower temperature, the creation of a homogenous quality and a more consistent result.

Frits are glaze materials which have been melted, cooled and ground into a powder which is then added to a glaze formula for the purpose of rendering insoluble any soluble material present.

Other frits manufactured by Pemco, Fusion or General Color may be in stock or available by special order.

LEAD FREE FERRO FRITS (Including ideal firing temperatures and significant characteristics)

PRODUCT	DESCRIPTION	MELTING RANGE (°F)
CC-250	Basic clear at Cone 06. Used as a flux at higher temperatures. Add other raw materials for various effects.	1500°F
CC-257	Fritted source of barium. Used from Cone 06 to Cone 1 with CC-265 for satins. Used as partial additive.	1700°F
CC-263	Well balanced Cone 02 to Cone 1. Clear.	1650°F
CC-265	Fritted source of calcium. Used with other frits Cone 06 to Cone 1 for satins as well as chrome-tin colors.	1500°F
CC-270	A high expansion frit. Cone 06-04.	1400°F
CC-274	Good for colors. -Cone 04 to Cone 02.	1800°F
CC-279	Clear. Cone 06 to 04.	1450°F
CM-942 (CM-866)	Red leadless cadmium, underglaze mix; complete by itself. Works well with CM-944 to produce oranges. Cone 06.	1750°F
CM-943 (CM-867)	Yellow leadless cadmium, underglaze mix; complete by itself. Works well with CM-943 to produce oranges. Cone 06.	1750°F
FA-233	Balanced zircon, opacified frit for Cone 06 to Cone 01. A white frit for white, opaque glazes.	1650°F
FB-268-D	Zircon lead free frit.	1750°F
FB-276-P	Well balanced clear frit for colors at Cone 06.	1650°F
FB-284-M (3289)	3289 with zircon to decrease solubility. Barium source used for bright colors at Cone 05 to Cone 03.	1500°F
3110	A high calcium/sodium, low alumina frit for Cone 06. Often used in crystal glazes. High expansion.	1600°F
3124	Used with other frits and raw materials at Cone 06 to Cone 01.	1600°F
3134	Calcium Borate source used with other frits for low cost pottery glazes from Cone 06 to Cone 01.	1450°F
3195	Very fluid, clear Cone 06 frit.	1500°F
3225	Low coefficient of expansion. Cone 04.	1650°F
3249	This frit formulation includes magnesium and is used to control crazing in amounts of 3% to 10%. Very low COE.	1900°F
3269	Crackle frit, clear and used from Cone 06 to Cone 03. Can be used alone or as an additive to glaze.	1400°F
3270	Good Cone 06 to Cone 04 for many colors - particularly good for cobalt.	1500°F
3278	Similar to 3134 above but melts at a lower temperature.	1400°F
3292	A balanced frit to be used in glazes from Cone 1 to Cone 4.	1650°F
3336	Zircon frit used from Cone 04 to Cone 5.	1850°F
3846	Antimony opacified, high expansion frit.	1450°F
3851	Extremely high fire Cone 10 frit with very low coefficient of expansion.	2400°F
5301	For high expansion crackle glazes fired at Cone 06.	1500°F



LEAD BEARING FERRO FRITS*

It is important to note that the frits listed below contain lead, which is known to be a health hazard—both in its raw state and on fired ware. We do not recommend the use of lead bearing frits on any product that comes in contact with food or drink. It is the user's responsibility to test the fired ware to determine that it complies with FDA standards. Always use approved respirators and gloves when handling lead frits.

PRODUCT	DESCRIPTION	MELTING RANGE (°F)
CL-418 (3600)	14.4% PbO contains cadmium oxide. Used to support red-orange-yellow cadmium colors. Replaces 3600.	1500°F
CM-940 (CM-850)	Complete, balanced red glaze mix, used "as is" or mixed with CM-941 yellow at Cone 06. 11% PbO.	1450°F
CM-941 (CM-852)	Complete balanced yellow glaze mix, used "as is" or mixed with CM-940 red at Cone 06. Has 11% PbO.	1450°F
TR-1132	31% lead balanced all fritted clear. Cone 06.	1500°F
3403	Lead silicate at 67% PbO—used in artware and tile glazes from Cone 06 to Cone 03.	1350°F
3470	Contains zinc. 41% PbO. Cone 06 to Cone 03.	1350°F
3482	Contains titanium 29.5% PbO. Frequent additive in artware glazes.	1400°F
3485	Sodium lead borosilicate. Cone 06.	1300°F
3565	High temperature frit used at Cone 4 to Cone 5. 16% PbO.	1600°F

Due to the decreasing usage of leaded glazes in the ceramic industry, some of these frits may be unavailable in the future.

A CROSS REFERENCE LIST OF COMPARABLE FRITS**

<u>Pemco</u>	<u>O-Hommel</u>	<u>Ferro</u>	<u>Pemco</u>	<u>O-Hommel</u>	<u>Ferro</u>
P-54	14	3134	P-311	90	3124
P-25	25	3269	P-1409		3249
P-830	K-3	3278	P-786	630	CC-263
Pb-723	437	3403	P-626	400	3289
Pb-1307	11	3470	Pb-IV-48		CL-418
Pb-1151	27	3482		467	CZ-111
Pb-801	520	3485	P-802	378	3270
Pb-349		3565		642	CC-270
				472	FB-268-D

**Since there may be a minor variance in the comparable frit you select, be sure to test the frit carefully before using in production.

* Refer to the Health Caution paragraph at the beginning of the Raw Materials Section.

LOS ANGELES, CA

LEAD FREE FERRO FRITS

Full 50 pound sacks of frit are combinable for total quantity price per pound. All prices are per pound.

PRODUCT	1 LB.	5 LBS.	10 LBS.	50 LBS.	100 LBS.	500 LBS.
CC-250						
CC-257						
CC-263						
CC-265						
CC-270						
CC-274						
CC-279						
CM-942						
CM-943						
FA-233						
FB-268-D						
FB-276-P						
FB-284-M						
3110						
3124						
3134						
3195						
3225						
3227 (Ohio only)						
3249						
3269						
3270						
3278						
3292						
3336						
3846						
5301						

LEAD BEARING FERRO FRITS*

CL-418						
CM-940						
CM-941						
TR-1132						
3403						
3419						
3470						
3482						
3485						
3565						

BYESVILLE, OH

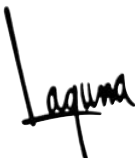
LEAD FREE FERRO FRITS

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3249						
3269						
3278						
3292						
5301						

LEAD BEARING FERRO FRITS*

All frits sold in California are available from Ohio. Call Ohio for lead-time and freight surcharges.

CM-940						
TR-1132						
3403						



BYESVILLE, OH
LEAD FREE FERRO FRITS

PRODUCT	1 LB.	5 LBS.	10 LBS.	50 LBS.	100LBS.	500 LBS.
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LEAD BEARING FERRO FRITS*

CM-940
TR-1132
3403

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