

## Transparent Frits

	Chemical analysis													Dilatometer			Characteristic
	Li <sub>2</sub> O	Na <sub>2</sub> O	K <sub>2</sub> O	MgO	CaO	SrO	BaO	ZnO	PbO	Al <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	ZrO <sub>2</sub>	TEC *10 <sup>-7</sup>	TP °C	SDS °C	
A 2120		24	2		7					4		59		145	330	480	alkali frit without boron, high TEC, F
A 3021					10					10	26	51	3	42	650	710	low TEC, Ca-B - frit
A 3032		12			7					12	7	62		75	600	640	stone ware frit
A 3069	2			3						9	29	57		40	540	640	low TEC, Li - frit
A 3158		8			3					2	36	51		55	530	560	low melting point, low TEC
A 3360	1	5			7		7			7	15	58		60	590	650	stone ware frit
A 3382		7								6	24	63		49	520	590	stone ware frit without CaO
A 4015	4	16									37	43		96	500	540	low melting point, Li - frit
A 4040		6	2	1	3		3	2		8	14	61		54	570	640	stone ware frit
A 4043			4	5	12					11		68		58	n.B.	> 800	high melting point
A 8962		16									37	47		86	540	570	used for lead free crystal glazes
VO 6134		4	4		10					13	15	54		68	620	700	good colour development
VO 6170	1	2	3	1	9	2	1			12	13	56		59	610	690	with strontium, for tableware
VO 6205		1	5	2	13			14		6	3	56		66	660	> 800	fast firing frit
VO6259		1	2	1	15	1	7	9		9	4	51		60	670	730	stoneware and tableware > 1050 °C
VO6270		3	2			13	4	10			25	43		54	600	660	stoneware and tableware < 1050 °C
A 2010		6							69		12	13		111	380	410	low melting point
A 1316									79			21		90	440	470	classic lead mono silicate
A 2912									60	7		33		53	600	640	relatively low lead solubility
A 3334									55		17	28		59	480	510	lead boron silicate
A 62		2			7				34	6	13	38		66	560	610	stone ware frit

TEC = thermal expansion coefficient between 20 and 400 °C

SDS = beginning of softening

TP = point of transformation n.b. = not measured

## Coloured Frits Leadfree

Chemical analysis													Dilatometer				Characteristic
	Li <sub>2</sub> O	Na <sub>2</sub> O	K <sub>2</sub> O	MgO	CaO	SrO	BaO	ZnO	PbO	Al <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	ZrO <sub>2</sub>	TEC *10 <sup>-7</sup>	TP °C	SDS °C	
A 3363		5			3		10	2		8	13	50		67	520	600	cobalt frit
A 3364		5			3		10	3		8	13	42		65	530	610	iron frit
A 3367		4			2		10			4	15	49		53	600	640	copper frit
A 3368		5			3		10	4		5	13	45		59	480	510	manganese frit

## Opaque Frits

Chemical analysis													Dilatometer				Characteristic
	Li <sub>2</sub> O	Na <sub>2</sub> O	K <sub>2</sub> O	MgO	CaO	BaO	ZnO	PbO	Al <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	ZrO <sub>2</sub>	TEC *10 <sup>-7</sup>	TP °C	SDS °C		
A 3323		6	2	2	4	2			9	14	52	9	58	560	640	stone ware frit	
VO 6079		6	1		6				7	13	55	12	58	600	670	stone ware frit	
VO 6200		1	4	2	8		12		5	6	53	9	60	620	790	fast firing frit	
VO 6257			6	2	10		13	2	5	10	42	10	65	610	720	fast double firing frit	
VO 6255			4	3	11		12		4	4	53	9	63	630	700	fast firing frit	

TEC = thermal expansion coefficient between 20 and 400 °C

SDS = beginning of softening

TP = point of transformation n.b. = not measured

## Matt Frits

	Chemical analysis												Dilatometer			Characteristic
	Li <sub>2</sub> O	Na <sub>2</sub> O	K <sub>2</sub> O	MgO	CaO	BaO	ZnO	PbO	Al <sub>2</sub> O <sub>3</sub>	B <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	ZrO <sub>2</sub>	TEC *10 <sup>-7</sup>	TP °C	SDS °C	
A 1561		10	3		5		29	4	3	8	38		84	530	580	stone ware frit
A 3128		8			10	8	30		3	5	36		74	560	610	stone ware frit
A 3129			2		1		25	45	3		24		62	490	560	stone ware frit
A 3383	3				5	3	4		23		62		18	n.b.	> 800	high melting point, very low TEC
A 4018			3			37	21		5		34		105	n.b.	> 800	fast firing frit, high barium content
VO 6086			7		5	25			12		51		67	660	> 800	barium matt frit
VO 6104		3			30				3	10	54		80	602	> 800	calcium matt frit
VO 6147		6			14		20		13		47		73	n.b.	> 800	fast firing frit, Zn, Ca
VO 6160		3	1	1	3	18	15		7	5	36	11	56	600	660	fast firing frit, Zn, Ba
VO 6253	2		3		13	10	4		5	6	57		67	570	620	stone ware frit

TEC = thermal expansion coefficient between 20 and 400°C

SDS = beginning of softening

TP = point of transformation n.b. = not measured