

CLASSIFICATION AND LABELLING UNDER EU CLP REGULATION OF THE FRITS REGISTERED BY THE FRIT CONSORTIUM

(Updated Oct 2018)

How to use this document

The following table summarizes the CLP classification of the frits identified by the Frit Consortium as hazardous - therefore subject to Registration obligations in REACH.

Part 1 (entries 1-68, yellow shading) contains the classifications for the compositions included in the REACH Registration dossier from 2010 to 2015. These compositions contain Ni, Pb, Cd or V.

Part 2 (entries 69-93, blue shading) contains the classifications derived for the new compositions included in the update to the Registration dossier submitted to ECHA in 2018. These compositions contain B, Zn or Co, and may also contain some of the above elements.

Please carefully check the tables against your frits' compositions to assess the proper classification of your products.

Important remarks - please read:

- The concentration of each constituent is expressed as the oxide form, as the form that is analysed. The classification of each constituent used to classify the frits is based on the form that is considered to be most relevant to frits (usually the starting material).
- Frits with $<34\%$ B and $\geq 30\%$ SiO_2 and $\geq 0.5\%$ Al_2O_3 are not classified in CLP and exempt from REACH registration
- Frits containing B are classified at $\geq 34\%$ B regardless of the concentrations of SiO_2 and Al_2O_3
- Frits with $\text{B} \geq 3\%$ are classified if they contain $\text{SiO}_2 < 30\%$ or $\text{Al}_2\text{O}_3 < 0.5\%$
- Frits with $1\% \leq \text{CdO} < 5\%$ and $\text{SiO}_2 \geq 30\%$ and $\text{Al}_2\text{O}_3 \geq 1\%$ are not classified in CLP and exempt from REACH registration
- Frits with $1\% \leq \text{CdO} < 5\%$ and $\text{SiO}_2 < 30\%$ or $\text{Al}_2\text{O}_3 < 1\%$ have to be registered and classified
- Frits with $\text{CdO} > 5\%$ have to be registered and classified
- Frits with Pb containing $\text{SiO}_2 \geq 30\%$ and $\text{Al}_2\text{O}_3 \geq 1\%$ are not classified in CLP and exempt from REACH registration
- Frits are classified based on Zn only if $\text{SiO}_2 < 30\%$ or $\text{Al}_2\text{O}_3 < 1\%$ (or 0.5% if it also contains B)
- Frits are classified based on Cu and Mn only if $\text{SiO}_2 < 30\%$ or $\text{Al}_2\text{O}_3 < 1\%$

If you have any question on classification and labelling of frits, please contact icsierra@fritconsortium.eu

CLP Classification of the frits registered by the Frit Consortium

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
												STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic
	Remark:	The concentration of each constituent is based on the oxide form, as the form that is analysed. The classification of each constituent used to classify the frits is based on the form that is considered to be most relevant to frits (usually the starting material).																			
Frits that contain lead	1	0.05% ≤ Pb < 0.25 % (Pb)										H373									-
	2	0.25% ≤ Pb < 0.3 % (Pb)										H373									H412
	3	0.3% ≤ Pb < 0.5 % (Pb)										H373						H360 Df			H412
	4	0.5% ≤ Pb < 1% (Pb)									H372							H360 Df			H412
	5	1% ≤ Pb < 2.5 % (Pb)									H372					H351		H360 Df			H412
	6	2.5 % ≤ Pb < 25 % (Pb)									H372					H351		H360 Df		H400	H411
	7	Pb ≥ 25 % (Pb)							H302 (Cat 4)	H332 (Cat 4)		H372				H351		H360 Df		H400	H410

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox		
												STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic	
Frits that contain cadmium	8	0.025 % ≤ Cd < 0.25 % (Cd)																			H412	
	9	25 % ≤ Cd < 2.5 % (Cd)																				H411
	10	2.5% ≥ Cd < 25% (Cd)																		H400		H410
Frits that contain lead and cadmium	11	0.05% ≤ Pb < 0.3% 0.025% ≤ Cd < 0.25 % (Pb, Cd)										H373										H411
	12	0.3% ≤ Pb < 0.5% 0.025% ≤ Cd < 0.25 % (Pb, Cd)										H373						H360 Df				H411
	13	0.5% ≤ Pb < 1% 0.025% ≤ Cd < 0.25 %									H372							H360 Df				H411

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
												STOT - Repeat	STOT - Repeat	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic
		(Pb, Cd)																			
	14	1 % ≤ Pb < 2.5% 0.025% ≤ Cd < 0.25% (Pb, Cd)									H372					H351	H360 Df		H400	H411	
	15	2.5 % ≤ Pb < 25% 0.025% ≥ Cd < 25% (Pb, Cd)									H372					H351	H360 Df		H400	H410	
	16	Pb ≥ 25% 0.025% ≥ Cd < 25% (Pb, Cd)						H302 (Cat 4)	H332 (Cat 4)		H372					H351	H360 Df		H400	H410	
	17	0.05% ≤ Pb < 0.3% 0.25% ≥ Cd < 25% (Pb, Cd)										H373							H400	H410	
	18	0.3% ≤ Pb < 0.5% 0.25% ≥ Cd < 25% (Pb, Cd)										H373					H360 Df		H400	H410	

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
												STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic
	19	0.5% ≤ Pb < 1% 0.25% ≥ Cd < 25% (Pb, Cd)									H372								H360 Df	H400	H410
	20	1% ≤ Pb < 2.5% 0.25% ≥ Cd < 25% (Pb, Cd)									H372					H351			H360 Df	H400	H410
Frits that contain nickel	21	0.1% ≤ NiO < 1% (Ni)																	H350i (Cat 1A)		-
	22	1% ≤ NiO < 10% (Ni)																	H350i (Cat 1A)		H412
	23	10% ≤ NiO < 25% (Ni)			H317						H372								H350i (Cat 1A)		H412
	24	NiO ≥ 25% (Ni)			H317						H372								H350i (Cat 1A)		H411
Frits that contain lead and nickel	25	0.05% ≤ Pb < 0.25% 0.1% ≤										H373							H350i (Cat 1A)		H412

		Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox
										STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic
		NiO < 1 % (Pb, Ni)																	
	26	0.05% ≤ Pb < 0.3% 1 % ≤ NiO < 10 % (Pb, Ni)									H373			H350i (Cat 1A)					H412
	27	0.05% ≤ Pb < 0.3% NiO ≥ 10 % (Pb, Ni)			H317					H372				H350i (Cat 1A)					H411
	28	0.25% ≤ Pb < 0.3% 0.1 % ≤ NiO < 1 % (Pb, Ni)									H373			H350i (Cat 1A)					H412
	29	0.3% ≤ Pb < 0.5 %; 0.1 % ≤ NiO < 1 % (Pb, Ni)									H373			H350i (Cat 1A)		H360 Df			H412
	30	0.3% ≤ Pb < 0.5 %; 1 % ≤ NiO									H373			H350i (Cat 1A)		H360 Df			H412

		Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
										STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic	
		< 10% (Pb, Ni)																		
	31	0.3% ≤ Pb < 0.5%; NiO ≥ 10% (Pb, Ni)		H317						H372						H350i (Cat 1A)	H360 Df		H411	
	32	0.5% ≤ Pb < 1%; 0.1% ≤ NiO < 1% (Pb, Ni)								H372						H350i (Cat 1A)	H360 Df		H412	
	33	1% ≤ Pb < 2.5%; 0.1% ≤ NiO < 1% (Pb, Ni)								H372						H350i (Cat 1A)	H360 Df		H411	
	34	0.5% ≤ Pb < 1%; 1% ≤ NiO < 10% (Pb, Ni)								H372						H350i (Cat 1A)	H360 Df		H412	
	35	1% ≤ Pb < 2.5%;		H317						H372						H350i (Cat 1A)	H360 Df		H411	

		Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
										STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic	
		NiO ≥ 10% (Pb, Ni)												Cat 1A/1B						
	36	2.5 % ≤ Pb < 25 %; 0.1 % ≤ NiO < 10 % (Pb, Ni)								H372				H350i (Cat 1A)		H360 Df		H400	H411	
	37	2.5 % ≤ Pb < 25 %; NiO ≥ 10% (Pb, Ni)		H317						H372				H350i (Cat 1A)		H360 Df		H400	H411	
	38	Pb ≥ 25 %; 0.1 % ≤ NiO < 10 % (Pb, Ni)					H302 (Cat 4)	H332 (Cat 4)		H372				H350i (Cat 1A)		H360 Df		H400	H410	
	39	Pb ≥ 25 %; NiO ≥ 10%		H317			H302 (Cat 4)	H332 (Cat 4)		H372				H350i (Cat 1A)		H360 Df		H400	H410	

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
												STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic
		(Pb, Ni)																			
Frits that contain vanadium	40	1% ≤ V2O5 < 3% (V)	H319											H341							H412
	41	3% ≤ V2O5 < 10% (V)	H318											H341					H361d***		H412
	42	10% ≤ V2O5 < 20% (V)	H318								H372			H341					H361d***		H412
	43	20% ≤ V2O5 < 25% (V)	H318				H335				H372			H341					H361d***		H412
	44	V2O5 > 25% (V)	H318				H335	H302 (Cat 4)	H332 (Cat 4)		H372			H341					H361d***		H411
Frits that contain lead and vanadium	45	1% ≤ V2O5 < 3%; 0.05% ≤ Pb < 0.3%	H319									H373		H341							H412

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox		
												STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic	
		(V, Pb)																				
	46	1% ≤ V205 < 3%; 0.3% ≤ Pb < 0.5% (V, Pb)	H319									H373		H341					H360Df		H412	
	47	1% ≤ V205 < 3%; 0.5% ≤ Pb < 1% (V, Pb)	H319								H372			H341					H360Df		H412	
	48	1% ≤ V205 < 3%; 1% ≤ Pb < 2.5% (V, Pb)	H319								H372			H341		H351			H360Df		H411	
	49	1% ≤ V205 < 3%; 2.5% ≤ Pb < 25% (V, Pb)	H319						H302 (Cat 4)	H332 (Cat 4)		H372			H341		H351		H360Df		H400	H411
	50	1% ≤ V205 < 3%	H319						H302 (Cat 4)	H332		H372			H341		H351		H360Df		H400	H410

		Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
										STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic	
		%; Pb ≥ 25 % (V, Pb)					4)	(Cat 4)												
	51	3 % ≤ V205 < 10 %; 0.05 % ≤ Pb < 0.3 % (V, Pb)	H318								H373		H341					H361d ***		H412
	52	3 % ≤ V205 < 10 %; 0.3 % ≤ Pb < 0.5 % (V, Pb)	H318								H373		H341					H360 Df		H412
	53	3 % ≤ V205 < 10 %; 0.5 % ≤ Pb < 1 % (V, Pb)	H318							H372			H341					H360 Df		H412
	54	3 % ≤ V205 < 10 %; 1 % ≤ Pb < 2.5 % (V, Pb)	H318							H372			H341		H351			H360 Df		H411

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox
												STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute
	55	3 % ≤ V205 < 10 %; 2.5 % ≤ Pb < 25 % (V, Pb)	H318					H302 (Cat 4)	H332 (Cat 4)		H372			H341		H351	H360 Df		H400	H411
	56	3 % ≤ V205 < 10 %; Pb ≥ 25 % (V, Pb)	H318					H302 (Cat 4)	H332 (Cat 4)		H372			H341		H351	H360 Df		H400	H410
	57	10 % ≤ V205 < 20 %; 0.05 % ≤ Pb < 0.3 % (V, Pb)	H318								H372			H341				H361d ***		H412
	58	10 % ≤ V205 < 20 %; 0.3 % ≤ Pb < 0.5 % (V, Pb)	H318								H372			H341			H360 Df			H412
	59	10 % ≤ V205 <	H318								H372			H341			H360 Df			H411

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox
											STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic
		20 %; 0.5% ≤ Pb < 1 % (V, Pb)																		
	60	10 % ≤ V2O5 < 20 %; 1 % ≤ Pb < 2.5 % (V, Pb)	H318								H372			H341		H351	H360 Df			H411
	61	10 % ≤ V2O5 < 20 %; 2.5 % ≤ Pb < 25 % (V, Pb)	H318					H302 (Cat 4)	H332 (Cat 4)		H372			H341		H351	H360 Df		H400	H411
	62	10 % ≤ V2O5 < 20 %; Pb ≥ 25 % (V, Pb)	H318					H302 (Cat 4)	H332 (Cat 4)		H372			H341		H351	H360 Df		H400	H410
	63	V2O5 ≥ 20 %; 0.05% ≤ Pb < 0.3 % (V, Pb)	H318				H335	H302 (Cat 4)	H332 (Cat 4)		H372			H341				H361d ***		H411

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox
												STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute
	64	V205 ≥20 %; 0.3% ≤ Pb < 0.5 % (V, Pb)	H318				H335	H302 (Cat 4)	H332 (Cat 4)		H372			H341			H360 Df			H411
	65	V205 ≥20 %; 0.5% ≤ Pb < 1% (V, Pb)	H318				H335	H302 (Cat 4)	H332 (Cat 4)		H372			H341			H360 Df			H411
	66	20 % ≤ V205; 1 % ≤ Pb < 2.5 %	H318				H335	H302 (Cat 4)	H332 (Cat 4)		H372			H341	H351		H360 Df			H411
	67	V205 ≥20 %; 2.5 % ≤ Pb < 25 % (V, Pb)	H318				H335	H302 (Cat 4)	H332 (Cat 4)		H372			H341	H351		H360 Df		H400	H411
	68	V205 ≥20 %; Pb ≥ 25 % (V, Pb)	H318				H335	H302 (Cat 4)	H332 (Cat 4)		H372			H341	H351		H360 Df		H400	H410
Frits with cobalt ≥2%	69 (Co)	2 % ≤ Co < 35 % 0 % ≤ Zn < 35 % 3 % < B				H334														H412

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox
											STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic
		<30 % SiO ₂ ≥30 % AND Al ₂ O ₃ ≥0.5%																		
	70 (Co, Zn, B)	2 % ≤ Co < 35 % 25 % ≤ Zn < 35 % 3 % < B < 30 % SiO ₂ <30 % or Al ₂ O ₃ <0.5%				H334											H360 FD		H400	H410
	71 (Co, Zn, B)	2 % ≤ Co < 35 %; 2.5 % ≤ Zn < 25 % 3 % < B < 30 % SiO ₂ <30 % or Al ₂ O ₃ <0.5%				H334											H360 FD			H411
	72 (Co)	2 % ≤ Co < 35 %				H334											H360 FD			H412

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
												STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic
	Zn, B)	Zn < 2.5 % 3 % < B < 30 % SiO ₂ <30 % or Al ₂ O ₃ <0.5%																			
Frits with cobalt ≥2% and lead ≥40% (<0.5% Al₂O₃)	73 (Co, Pb)	2 % ≤ Co < 5 % 40 % ≤ Pb < 55 %				H334					H372					H351 (oral)	H360 Df	H362	H400	H410	
Frits with boron >3% <60% and SiO₂ >0 <65%	74 (V, B)	3 % < B < 60 % 3 % ≤ V < 5 % SiO ₂ <30 % or Al ₂ O ₃ <0.5%										H373		H341			H360 FD	H361		H412	
	75 (V, B)	34 % ≤ B < 60 % 3 % ≤ V < 5 % SiO ₂ ≥30										H373		H341			H360 FD	H361		H412	

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
												STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic
		% AND Al2O3 ≥0.5%																			
	76 (B)	3 % < B < 60 % V < 1 % SiO2<30 % or Al2O3 <0.5%															H360 FD				
	77 (B)	34 % ≤ B < 60 % V < 1 % SiO2≥30 % AND Al2O3 ≥0.5%															H360 FD				
Frits with boron >3%, lead ≥35% and SiO2 >1 <35%	78 (B, Cd, Pb)	3 % < B < 35 % 0 % ≤ Cd < 6 % 35 % ≤ Pb < 85 % SiO2≤30 % or Al2O3 ≤0.5%										H372				H351 (oral)	H360 Df	H362	H400	H410	

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox
												STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute
Frits with SiO ₂ <30%, zinc ≥0.25% and boron >3%	79 (B, Zn)	3 % < B < 45 % 25 % ≤ Zn + Cu < 69 %															H360 FD		H400	H410
	80 (B, Zn)	3 % < B < 45 % 2.5% ≤ Zn < 25 Cu < 0.2%															H360 FD			H411
	81 (B, Zn)	3 % < B < 45 % 0.25% ≤ Zn < 2.5 Cu < 0.2%															H360 FD			H412
Frits with SiO ₂ <30%, zinc ≥5%, boron ≥10% and lead ≥35%	82 (B, Zn, Pb)	10% ≤ B < 25 % 5% ≤ Zn < 15 % 35 % ≤ Pb < 75 %										H372				H351 (oral)	H360 FD	H362	H400	H410
Frits with SiO ₂ ≥30% and Al ₂ O ₃ <0.5%, with zinc ≥0.25% and	83 (B, V, Ni, Zn)	3 % < B < 20 % 1% ≤ V < 2 % 0.1% ≤ Ni < 1%										H373	H341	H350i			H360 FD		H400	H410

			Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
												STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic
boron >3%		Cu + Zn ≥ 25 %																			
	84 (B, Zn)	3 % < B < 20 % V < 1 % Ni <0.1% Cu + Zn ≥ 25 %																H360 FD		H400	H410
	85 (B, V, Zn)	3% < B < 20 % 1% ≤ V < 2 % Ni <0.1% Cu + Zn ≥ 25 %										H373		H341				H360 FD		H400	H410
	86 (B, V, Zn)	3 % < B < 20 % 1% ≤ V < 2 % Ni <0.1% 2.5% ≤ Zn ≤ 25 %											H373		H341			H360 FD			H411
	87 (B, Zn)	3% < B < 20 % V < 1 % Ni <0.1% 2.5% ≤ Zn																H360 FD		H400	H411

		Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
										STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic	
		≤ 25 % Cu <0.5%																		
	88 (B, Ni, V, Zn)	3 % < B < 20 % 1 % ≤ V < 2 % 0.1% ≤ Ni <1% 2.5% ≤ Zn ≤ 25 %									H373		H341	H350i		H360 FD				H411
	89 (B, Ni, Zn)	3 % < B < 20 % V < 1 % 0.1% ≤ Ni <1% 2.5% ≤ Zn ≤ 25 %												H350i		H360 FD				H411
	90 (B, Zn)	3 % < B < 20 % V < 1 % Ni <0.1% 0.25% ≤ Zn ≤ 2.5 %														H360 FD				H412
	91 (B, Ni,	3 % < B < 20 % V < 1 %												H350i		H360 FD				H412

		Eye damage	Skin irritation	Skin Sensitizer	Resp Sensitizer	STOT - Single	Acute tox (oral)	Acute tox (Inhalation)	Acute tox (dermal)	STOT - Repeat	STOT - Repeat	Geno	Geno	Carc	Carc	Repro tox	Repro tox	Environ Tox	Environ Tox	
										STOT RE: 1	STOT RE: 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Cat 1A/1B	Cat 2	Acute	Chronic	
	Zn	0.1% ≤ Ni <1% 0.25% ≤ Zn ≤ 2.5 %																		
Frits with SiO₂ <30% and zinc ≥0.25%	92 (Zn)	2.5 % ≤ Zn < 25 %																		H411
	93 (Zn)	0.25 % ≥ Zn <2.5 %																		

NOTES:

The elements contributing to classification in each case have been indicated in red.

*** According to the criteria, the general hazard statement can be replaced by the hazard statement indicating only the property of concern, where either fertility or developmental effects are proven to be not relevant.

For STOT classifications, affected organs and route of exposure as are follows:

Affected organs:

Pb: Central nervous system, kidneys and haematological systems

Ni: Lung

Cd: Kidney, lung, bones

V: Respiratory tract

Route of exposure:

Pb: No specific route of exposure

Ni: inhalation.

Cd: Inhalation

V: Inhalation.