

Template for comments and secretariat observations

Date: 0511-2016

Document: **notification_draft_2016_416_D_IT**

Target date: 07-11-2016

1	2	(3)	4	5	(6)	(7)																																													
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1	6.1 Enamel		te	Quote: Enamel is a vitreous material produced by melting at 1200 °C – 1300 °C and quenching (fritting) with inorganic, mostly oxide composition (see Table 1).	Enamel is a vitreous material produced by dosing and mixing some natural or synthetic inorganic raw materials and melting them at 1000 °C – 1300 °C, then cooling quickly the melted product to obtain flakes or granules of glassy materials (frits), having indicative oxide composition reported in Table 1. References: EG-CPDW 238 rev 2 UNI8762 Porcelain (Vitreous) Enamel by S.Pagliuca & W.D.Faust, 2012. ISBN 978-88-903905-3-1																																														
1	6.1 Enamel	Table 1	te	Table 1, not correspondent to existing documents presented to the Commission and to other existing literature. Concentration ranges of some elements are wider and some elements, initially not included, are present.	Table 1- Vitreous Enamel Oxidic Composition List (OCL). <table><tr><th>Substance</th><th>Min</th><th>Max</th></tr><tr><td>SiO₂</td><td>40</td><td>80</td></tr><tr><td>B₂O₃</td><td>5</td><td>15</td></tr><tr><td>Na₂O</td><td>5</td><td>20</td></tr><tr><td>K₂O</td><td>0</td><td>5</td></tr><tr><td>Li₂O</td><td>0</td><td>10</td></tr><tr><td>CaO</td><td>0</td><td>10</td></tr><tr><td>BaO</td><td>0</td><td>5</td></tr><tr><td>SrO</td><td>0</td><td>5</td></tr><tr><td>MgO</td><td>0</td><td>2</td></tr><tr><td>CeO₂</td><td>0</td><td>15</td></tr><tr><td>ZnO</td><td>0</td><td>10</td></tr><tr><td>Al₂O₃</td><td>0</td><td>5</td></tr><tr><td>CoO</td><td>0</td><td>3</td></tr><tr><td>NiO</td><td>0</td><td>3</td></tr></table>	Substance	Min	Max	SiO ₂	40	80	B ₂ O ₃	5	15	Na ₂ O	5	20	K ₂ O	0	5	Li ₂ O	0	10	CaO	0	10	BaO	0	5	SrO	0	5	MgO	0	2	CeO ₂	0	15	ZnO	0	10	Al ₂ O ₃	0	5	CoO	0	3	NiO	0	3	
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NOTE Columns 1, 2, 4, 5 are compulsory.

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					<table><tr><td>CuO</td><td>0</td><td>2</td></tr><tr><td>MnO₂</td><td>0</td><td>3</td></tr><tr><td>Fe₂O₃</td><td>0</td><td>5</td></tr><tr><td>MoO₃</td><td>0</td><td>3</td></tr><tr><td>P₂O₅</td><td>0</td><td>5</td></tr><tr><td>SnO₂</td><td>0</td><td>5</td></tr><tr><td>TiO₂</td><td>0</td><td>10</td></tr><tr><td>ZrO₂</td><td>0</td><td>20</td></tr><tr><td>F</td><td>0</td><td>5</td></tr></table> <p>Note: the concentration ranges are giving the possible element oxides, which could be present in the different vitreous enamel recipes for boilers. The lower limit “0” means that some elements could not be present in the enamel formulation. Other elements could be present as impurities in small quantities, lower then 0,1%.</p> <p>References: EG-CPDW 238 rev 2 UNI8762</p>	CuO	0	2	MnO ₂	0	3	Fe ₂ O ₃	0	5	MoO ₃	0	3	P ₂ O ₅	0	5	SnO ₂	0	5	TiO ₂	0	10	ZrO ₂	0	20	F	0	5	
CuO	0	2																															
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F	0	5																															
1	6.1 Enamel		te	Quote: The ground enamel frit is applied to iron-containing metallic materials by firing at over 480°C.	The enamel is applied on iron-containing metallic materials, specifically on steel, by firing at over 800°C. References: UNI8762 Porcelain (Vitreous) Enamel by S.Pagliuca & W.D.Faust, 2012. ISBN 978-88-903905-3-1																												
1	6.1 Enamel		te	Quote: .. and thermally stable up to 300 C.	...and thermally stable up to 480°C. Water heater enamels have a glass transition temperature over 480°C. References:																												

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					Porcelain (Vitreous) Enamel by S.Pagliuca & W.D.Faust, 2012. ISBN 978-88-903905-3-1	
	7.2 Requirement s for release of elements	Table 9	Ge + te	Table 9	Respect to minimum requirements of Council Directive 98/83/EC, Annex 1, Part B, several additional Elements have been considered: Barium, Cerium , Hafnium, Cobalt , Lanthanum, Molybdenum , Strontium, Titanium , Tungsten, Yttrium, Zirconium . In bold the elements with high degree of sensitivity and concern for the Vitreous/Porcelain Enamel (also listed in Table 1). These elements and relative limits, could be considered only in presence of serious documented health risk. As they are in Table 9 they will most probably handicap porcelain/vitreous enamel vs other materials as a material in contact with water for human consumption, at the moment without any reason.	
1	7.2 Requirement s for release of elements	Table 9	Ge+te	Quote: The criteria (Table 9) have been reduced to a relative proportion of the respective limit or guidance value in order to allow for other possible sources. As a consequence, the criterion for enamel and ceramic materials is typically limited to 10 % of the respective limit or guidance value.... For cobalt there are no other known routes of entry into the drinking water. For this reason, the relative proportion of the criterion in terms of the guidance	These guidance criteria cannot be applied because missing of either any prior knowledge or a scientific and technical base for applying this type of arbitrary allocation. The commission should be responsible to set these criteria. The parameters & parametric values should remain the same as reported in part B of Annex I of COUNCIL DIRECTIVE 98/83/EC of 3 November 1998 on the quality of water	

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				value may be set to 90 % for cobalt..... For this reason, the criterion for manganese and aluminium may be set to 50 % of the limit defined in the TrinkwV 2001....	intended for human consumption. This criteria look like as a big distortion in the free circulation of different materials in the EU market. Enamelled Water heaters have been produced and used in USA, EU, China, etc. in billions of pieces in the last 50 years, without reporting health problems due to the leaching of elements of the enamel of water heater in the drinking water.	
1	8.3.5 Analysis of test results	Table 12	Ge+te	Quote: F_c = component-specific conversion factor pursuant to Table 12 in d/dm. Tanks in drinking water systems including repair systems = 4	The proposed correction factors $F_c = 4$ is really high and not justified, especially if compared with typical S/V data on mayor part of hot water tanks present in the EU market: Capacity 50 dm ³ , surface 70 dm ² , S/V 1,40 dm ⁻¹ ; Capacity 80 dm ³ , surface 100 dm ² , S/V 1,25 dm ⁻¹ ; Capacity 100 dm ³ , surface 117 dm ² , S/V 1,17 dm ⁻¹ ; We propose $F_c = 1,5$ (absolutely worse case) as reported in SG PTP 011 rev 2 amendments for CPDW (3)/ UNI-glassy Materials e-main n. 0486 and as shown in pre-normative research reports: EG-CPDW 261 - Second Migration Test Study by IEI and EG-CPDW 238 rev 2 glassy materials final report	

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