

### InSync MC

2-phase leucite glass ceramic for layering conventional alloys

Technical Datas	TYP	CLASS	CTE		Tg <sup>(1)</sup> 2x / 4x fired [°C] ± 20	Chem. Solubility		3 Point-Flexural Strength	
			2x fired (25-500°C) [*10 <sup>-6</sup> K <sup>-1</sup> ] ± 0,5	4x fired (25-500°C) [*10 <sup>-6</sup> K <sup>-1</sup> ] ± 0,5		Ceramic [µg/cm <sup>2</sup> ]	acc. to ISO 6872 [µg/cm <sup>2</sup> ]	Ceramic [MPa]	acc. to ISO 6872 [MPa]
<b>PFM-98 Opaque</b>	I	1b	12.5	12.5	550	≤ 30	< 100	≥ 125	> 50
<b>Margin</b>	I	1b	13.0	13.0	585	≤ 30	< 100	≥ 75	> 50
<b>Dentine, Monolayer</b>	I	1b	12.5	12.5	570	≤ 30	< 100	≥ 75	> 50
<b>Enamel, Pearl</b>	I	1b							
<b>Transpa, Clear, Opal</b>	I	1b							
<b>Correction</b>	I	1b	13.1	13.6	485	≤ 25	< 100	≥ 75	> 50
<b>Stains/Shade</b>	I	1b	11.8	-	480	30-60	< 100	-	-
<b>Glaze 303</b>	I	1b	12.0 (1x)	-	455 (1x)	< 100	< 100	> 50	> 50

Properties are measured according to ISO 6872 and ISO 9693  
<sup>(1)</sup>If the Tg 2x/4x is less than 500°C, the CTE is specified in [25°C - Tg]

#### Biocompatibility

<b>Cytotoxicity</b>	<b>XTT<sub>50</sub>-Value</b>	<b>[%]</b>	<b>= 0 (no cytotoxicity)*</b>
<b>Radioactivity</b>	<b><sup>238</sup>U</b>	<b>[Bq/g]</b>	<b>&lt; 0.03**</b>
<b>Radioactivity</b>	<b><sup>232</sup>Th</b>	<b>[Bq/g]</b>	<b>&lt; 0.03**</b>

Cytotoxicity requirements according to ISO 10993, Part.5 / ISO 7405 / ISO 6872 XTT<sub>50</sub>-Value ≤ 1 (low cytotoxicity)  
The critical value according to ISO – 6872 from <sup>238</sup>U – activity is 1,0 Bq/g.

The **InSync MC** ceramic - system is free from cytotoxicity, irritation and sensitizing potential!  
The radioactivity is far below the acceptable <sup>238</sup>U – critical value and there is no difference between the natural radioactivity! (The average radioactivity in our earth's crust from <sup>238</sup>U and <sup>232</sup>Th is at 0,03 Bq/g)

#### Composition

Amount in wt. %

	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	Na <sub>2</sub> O	CaO	B <sub>2</sub> O <sub>3</sub>	CeO <sub>2</sub>	TiO <sub>2</sub>	BaO	Li <sub>2</sub> O	F	P <sub>2</sub> O <sub>5</sub>	SnO <sub>2</sub>	ZnO	SrO	La <sub>2</sub> O <sub>3</sub>	ZrO <sub>2</sub>	Pigment
<b>Pressopaque</b>	30-42	7-12	5-10	3-6	<2							-	-	-	-	-	20-40	0.1-25
<b>Margin, Dentine, Monocast, Enamel, Transpa, Clear, Opal</b>	60-65	12-16	8-12	6-10	<1	<4	<2	-	<1	<1	<1	0.05-2	0.02-1	<1	0-2	0-2	-	0.1-3
<b>Correction</b>	60-64	10-13	9-12	8-10	1-3	<1	1-2	<1	-	<1	<1	<1	-	-	-	-	-	0.1-3
<b>Stain/Shade</b>	59-67	7-15	7-15	6-15	0-2	0-2	1-4	0-2	-	0-3	0-1	0-1	-	-	-	-	-	1-30
<b>Glaze 303</b>	50-65	3-12	7-15	6-15	0-2	1-8	0.1-4	-	-	0.5-4	0.1-4	-	0.05-2	0.1-2.5	-	-	-	-

Pigments include: color pigments, opacifying agent, fluorescence material

Sources: \*RCC-CCR - In Vitro Studies (XTT-Test)

CCR Project 1153904 - (January 2008), CCR Project 1083801 - (March 2007)

\*\*Forschungszentrum Jülich

Report of Analysis: Determination of Gamma-Activity in dental ceramic material - (January 2008)

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Physical Information	Unit	Value	ISO requirements
Vickers Hardness HV5 <sup>(**)</sup>		-	-
Fracture Toughness $K_{1c}$ <sup>(**)</sup> (in accordance to Niihara)	[MPa*m <sup>0.5</sup> ]	-	-
E-Modulus <sup>(**)</sup> (Ultrasonic measurement)	[MPa]	-	-
Thermal Shock Resistance <sup>(*)</sup> (tested with V-Classic from Metalor)	[°C]	-	Acc. to ISO 9693-2
Thermal Shock Resistance (tested with CPC-HTL)	[°C]	-	Acc. to ISO 9693-2
Bond Strength <sup>(*)</sup>	[MPa]	> 25	> 25 (ISO 9693-1)

<sup>(\*)</sup>depending on the alloy  
<sup>(\*\*)</sup>sources: <sup>(\*\*)</sup>independent inspection institute (2001) - CERAMICS FOR INDUSTRY - CFI GmbH & Co. KG (D-Rödental)