



# SCHOTT® DentalGlass | Inert

## Materials Data

Designed to increase the mechanical strength and durability of your final composite, all SCHOTT inert dental glasses are ideal fillers for dental materials. Due to their composition, these special glass materials show very low reactivity (“inert”).

### Advantages

#### SCHOTT® UltraFine: A patented processing technology

The contamination-free grinding down to particle sizes of only 0.4 µm (d<sub>50</sub>) ensures:

- Excellent polishability, high load factors
- High transparency of the composite

#### Expertise in special glass technology

The tightly controlled composition of our glasses ensures consistent physical and chemical properties. The composition of our range of inert dental glasses has been optimized to meet the following criteria:

- Refractive index exactly matched to the most commonly used dental resins, varying from 1.50 to 1.60
- A choice of barium- or strontium-based glasses with radiopacity between 210 and 400% (according to ISO 4049, analogue measurement)
- Low fluoride content as an option



### Materials Data:

#### Barium glasses

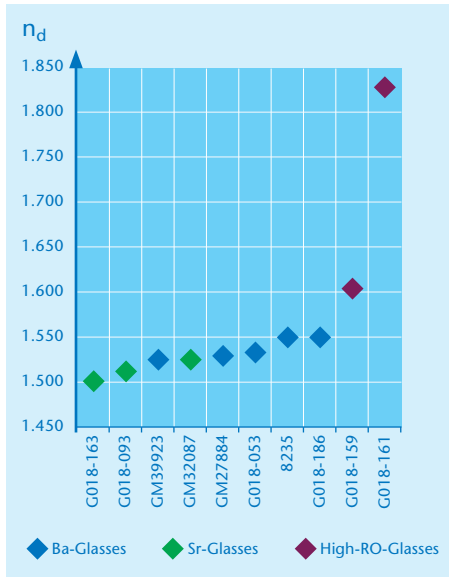
		G018-186	8235	G018-053	GM27884	GM39923
Expansion coefficient (-30/+70 °C)	10 <sup>-6</sup> /K	5	5	5	4	5
Index of refraction n <sub>d</sub>		1.55	1.55	1.53	1.53	1.52
Density	g/cm <sup>3</sup>	3.0	3.0	2.9	2.8	2.8
Transformation temperature (ISO 7884-8)	°C	595	680	595	665	590
Radiopacity (acc. ISO 4049) as thickness of aluminium equal to 2-mm thick glass material	mm	5.4 (270%)	4.8 (240%)	4.8 (240%)	4.2 (210%)	4.2 (210%)
Hydrolytical resistance (DIN ISO 719)		Class 1	Class 1	Class 1	Class 1	Class 1
Composition (approx. values) [weight-%]	SiO <sub>2</sub>	45	50	50	55	55
	BaO	35	30	30	25	25
	B <sub>2</sub> O <sub>3</sub>	10	10	10	10	10
	Al <sub>2</sub> O <sub>3</sub>	10	10	10	10	10
	F	2	-	2	-	2
Young's Modulus	GPa	77	75	72	71	-

**SCHOTT**  
glass made of ideas



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We offer two specially designed glasses for special applications where high radiopacity is essential. Your root-channel fillings or core build-up materials will be given suitable radiopacity. In addition your high refractive index resin mixtures might find the perfect filler among our glasses G018-161 and G018-159.

### Strontium glasses

		GM32087	G018-093	G018-163
Expansion coefficient (-30/+70 °C)	10 <sup>-6</sup> /K	4	5	3
Index of refraction n <sub>d</sub>		1.52	1.51	1.50
Density	g/cm <sup>3</sup>	2.6	2.6	2.5
Transformation temperature (ISO7884-8)	°C	680	610	610
Radiopacity (acc.ISO 4049) as thickness of aluminium equal to 2-mm thick glass material	mm	4.2 (210%)	4.2 (210%)	Approx. 4 (200%)
Hydrolytical resistance (DIN ISO 719)		Class 1	Class 1	Class 1
Composition (approx. values) [weight-%]	SiO <sub>2</sub>	50	50	60
	SrO	20	20	15
	BaO	1	1	-
	B <sub>2</sub> O <sub>3</sub>	15	15	15
	Al <sub>2</sub> O <sub>3</sub>	15	15	15
	F	-	2	2
Young's Modulus	GPa	72	-	-

### High Radio Opaque Glasses

		G018-161	G018-159
Expansion coefficient (-30/+70 °C)	10 <sup>-6</sup> /K	6	8
Index of refraction n <sub>d</sub>	10 <sup>-6</sup> /K	1.83	1.60
Density	g/cm <sup>3</sup>	4.6	3.4
Transformation temperature (ISO7884-8)	°C	585	530
Radiopacity (acc.ISO 4049) as thickness of aluminium equal to 2-mm thick glass material	mm	Approx. 8 (400%)	Approx. 6 (300%)
Hydrolytical resistance (DIN ISO 719)		T.b.d.*	T.b.d.*
Composition (approx. values) [weight-%]	SiO <sub>2</sub>	5	30
	TiO <sub>2</sub>	< 5	-
	ZrO <sub>2</sub>	< 5	10
	CaO	-	5
	ZnO	20	10
	SrO	-	25
	B <sub>2</sub> O <sub>3</sub>	20	5
	Al <sub>2</sub> O <sub>3</sub>	-	5
	Nb <sub>2</sub> O <sub>5</sub>	10	-
	La <sub>2</sub> O <sub>3</sub>	35	5
	Na <sub>2</sub> O	-	5
	WO <sub>3</sub>	5	-
	F	-	2
	Young's Modulus	GPa	111

For more information:

**SCHOTT Electronic Packaging**  
 A Division of SCHOTT North America, Inc.  
 122 Charlton Street  
 Southbridge, MA 01550  
 USA

Phone: +1 508 765-3370  
 Fax: +1 508 765-3377  
 epackaging@us.schott.com  
 www.us.schott.com/dentalglass

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