



NEW | SCHOTT NanoFine® NF180

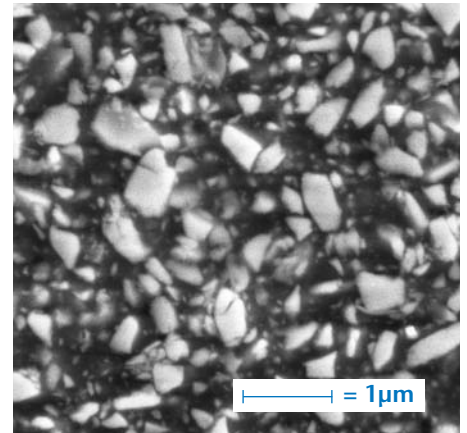
Product Information

SCHOTT goes nano with its new grain size SCHOTT NanoFine® NF180. Filling the gap between UltraFine powders and the common nano powders, this grain size can open up new dimensions of filler load, transparency and polishability.

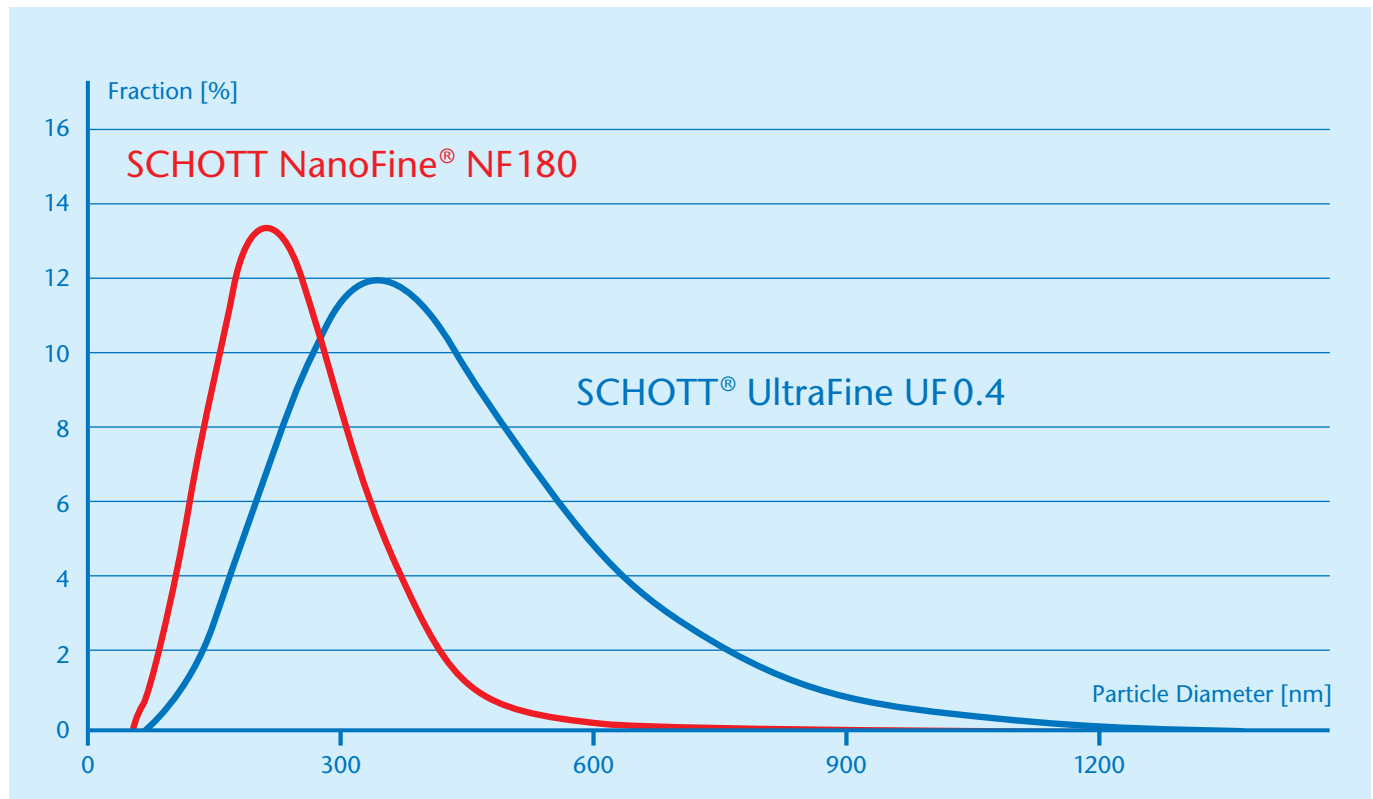
Advantages

Dental glasses going nano:

- First refractive index matching radiopaque glass < 200 nm (d_{50})
- Available in glasses G018-186, GM27884 and G013-308
- Extremely narrow grain size distribution
- Easy to disperse



SEM image of SCHOTT NanoFine® NF180 dispersed in monomer (cured)



Particle distribution SCHOTT NanoFine® NF180 in comparison to SCHOTT® UltraFine UF0.4

SCHOTT
glass made of ideas



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Grain size specification

Type	Description	Size	Grain size		Specific surface [m ² /g]
			d ₅₀ [nm]	d ₉₉ [nm]	
NF	Special submicron grind	NF180	180 ± 30	≤ 500	40

Grain size description d₅₀ (d₉₉): Equivalent diameter, for which the distribution sum has the value of 50% (99%).

Specification for silanated SCHOTT NanoFine®

Type	Description	Size	Grain size		Silane addition [weight-%]
			d ₅₀ [nm]	d ₉₉ [nm]	
NF sil	Special submicron size	NF180 13% Silane	180 ± 30	≤ 500	13

The coupling agent used is γ -Methacryloxypropyl-tri-methoxy-Silane. Stated percentage of silane addition: x wt % of unhydrolised silane + (100-x) wt % of powder = 100 wt % of batch.

Materials Data:

		G018-186	GM27884	G018-308
Index of refraction n _d		1.55	1.53	1.53
Expansion coefficient (-30/+70 °C)	10 ⁻⁶ /K	5	4	7
Density	g/cm ³	3.0	2.8	2.7
Transformation temperature (ISO 7884-8)	°C	595	665	633
Radiopacity measured on the basis of ISO 4049 (digital measurement)	mm	approx. 800%	approx. 560%	approx. 460%
Hydrolytical resistance (DIN ISO 719)		Class 1	Class 1	Class 1
Composition (approx. values) [weight-%]	SiO ₂	45	55	55
	ZrO ₂	-	-	< 5
	BaO	35	25	-
	SnO ₂	-	-	< 5
	B ₂ O ₃	10	10	10
	Al ₂ O ₃	10	10	< 10
	La ₂ O ₃	-	-	10
	K ₂ O	-	-	15
	Cs ₂ O	-	-	10
F		2	-	-

SCHOTT NanoFine® NF180 powders are available for glass type G018-186, GM27884 and G018-308. Other glass types to follow soon.

For more information:

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