

AEROSIL® fumed silica for dental impression materials



AEROSIL® fumed silica are excellently suited as fillers for dental impression materials. They improve properties such as tensile strength, elongation at break and tear resistance.

AEROSIL® fumed silica are available with a broad variety of surface treatments to render them hydrophobic. This enables the optimal incorporation in the polymer matrix.

Mechanical post treatment reduces the structure and allows for high filling capability.

AEROSIL® fumed silica grades with surface groups

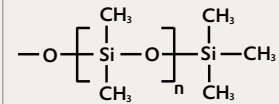
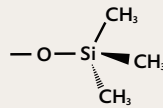
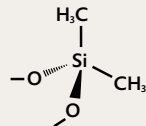
AEROSIL® fumed silica grade

AEROSIL® R 974
AEROSIL® R 9200

AEROSIL® R 812 S
AEROSIL® R 8200

AEROSIL® R 202
AEROSIL® R 208

Typical surface group





The most common hydrophobic grades used in dental impression materials are AEROSIL® R 974, AEROSIL® R 812 S, AEROSIL® R 202 and AEROSIL® R 208. In addition, Evonik offers the structure modified grades AEROSIL® R 8200 and AEROSIL® R 9200. These types are processed to reduce the aggregate structure resulting in higher tapped density and provide faster incorporation with less dusting.

Characteristic physico-chemical data

Properties and test method	Unit	AEROSIL® R 974	AEROSIL® R 812 S	AEROSIL® R 202	AEROSIL® R 208	AEROSIL® R 8200	AEROSIL® R 9200
Specific surface area (BET)	m ² /g	150 – 190	195 – 245	80 – 120	80 – 140	135 – 185	150 – 190
pH value in 4% dispersion	–	3.7 – 4.7	5.5 – 9.0	4.0 – 6.0	4.5 – 6.5	≥ 5.0	3.0 – 5.0
Loss on drying	%	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	≤ 0.5	≤ 1.5
Carbon content	%	0.7 – 1.3	3.0 – 4.0	3.5 – 5.0	4.5 – 6.5	2.0 – 4.0	0.7 – 1.3
Tamped density	g/L	approx. 50	approx. 60	approx. 60	approx. 60	approx. 140	approx. 200
SiO₂ content based on ignited material	%	≥ 99.8	≥ 99.8	≥ 99.8	≥ 99.8	≥ 99.8	≥ 99.8

The given values are typical data, specifications on request.

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