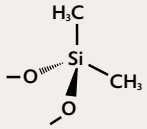
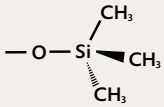
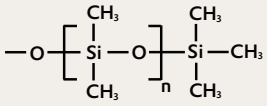
AEROSIL® fumed silica for dental impression materials

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
SiO_2 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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