

AEROSIL®

SPECIALIZED FUMED SILICA TO IMPROVE ADHESIVES & SEALANTS

AEROSIL®



AEROSIL® AT A GLANCE

Adhesives and sealants are employed in many different industries and are increasingly finding new applications. Thanks to the development of special hydrophobic AEROSIL® fumed silica grades, it has been possible to produce structural adhesives that belong to the future technologies in the automotive, construction, wind energy and chemical fixing industries.

EFFECTS

Due to its specific properties, AEROSIL® fumed silica performs in a multitude of applications in the adhesives and sealants industry. Both hydrophilic and hydrophobic types of AEROSIL® fumed silica are mainly used as additives for thickening and thixotropy, reinforcement, anti-settling, rheology control and anti-sag in reactive, solvent, water-based adhesives and hotmelts.

THICKENING AND THIXOTROPY

AEROSIL® fumed silica is an excellent thickening agent and thixotrope for liquid systems and even a synonym for a thixotrope. Highly hydrophobic grades like AEROSIL® R 208 or AEROSIL® R 202 are very effective thickening agents and thixotropes especially for polar epoxies and polyurethanes, while hydrophilic grades like AEROSIL® 200 or AEROSIL® 300 are more suitable for non-polar adhesives & sealants.

REINFORCEMENT

AEROSIL® fumed silica is an essential reinforcing agent for many adhesives and sealants like polyurethanes, silane-modified polymers (SMP), epoxies and polysulfides. The reinforcing effect is caused mainly by particle-particle and particle-matrix-interactions.

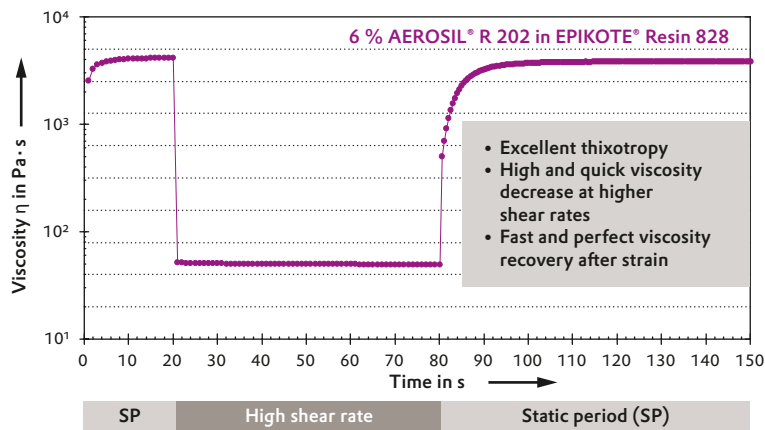
ANTI-SETTLING

AEROSIL® fumed silica can prevent or at least slow down the settling of fillers or pigments in heavily loaded adhesive and sealants. After long time storage times, some settling may be observed however in many cases with AEROSIL® fumed silica sedimentation is soft and can be easily resuspended. This effect appears due to the reduced mobility of the pigments/fillers in the liquid system and is caused by a yield value and less on the viscosity increase.

TRANSPARENCY

Due to its fine particle size, AEROSIL® fumed silica leaves clear adhesives and sealants more transparent than some other particulate additives do. Especially AEROSIL® grades with small primary particle sizes resp. high specific surface areas like AEROSIL® 200, AEROSIL® 300, AEROSIL® 380 or AEROSIL® R 974, AEROSIL® R 106, AEROSIL® R 805 and AEROSIL® R 812 S are recommended for transparent adhesives and sealant systems.

THIXOTROPY BEHAVIOUR OF AEROSIL® FUMED SILICA IN EPOXY RESIN



Recommended Products for Adhesives & Sealants:

SYSTEM	PRODUCTS	EFFECTS
Epoxy and Polyurethane	AEROSIL® 200, 300, R 202, R 208, R 805, R 8200	Thixotropy, Thickening, Anti-Sag, Anti-Settling, Reinforcement
Filled MS/SMP/SPU	AEROSIL® R 972, R 106, R 202, R 208	Thixotropy, Thickening, Anti-Sag, Anti-Settling, Reinforcement
Transparent MS/SMP/SPU	AEROSIL® R 972, R 974, R 106, R 805, R 812 S	Thixotropy, Thickening, Anti-Sag, Anti-Settling, Reinforcement
High-strength MS/SMP/SPU	AEROSIL® R 8200, AEROSIL® R 9200	Excellent Reinforcement, Low-Thickening
Acrylate/Methacrylate	AEROSIL® 200, 300, R 972, R 202, R 208, R 711, R 7200	Thixotropy, Thickening, Anti-Sag, Anti-Settling, Reinforcement
Polychloroprene/PVC-Cement	AEROSIL® 200, 300	Thixotropy, Thickening, Anti-Sag, Anti-Settling, Preventing of String Formation
PVC-Plastisol/PMMA-Plastisol	AEROSIL® 200, 300, 380, R 974, R 202	Thixotropy, Thickening, Anti-Sag
Polysulfide/Butyl	AEROSIL® 200, R 972, R 202, R 208, R 9200	Thixotropy, Thickening, Anti-Sag, Reinforcement
Waterbased	AEROSIL® 200, COK 84, R 972, AERODISP® WR 8520*, W 7520 N*	Thixotropy, Thickening, Anti-Sag, Reinforcement

*Easy to add and incorporate, better clarity of the dry film than powder

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