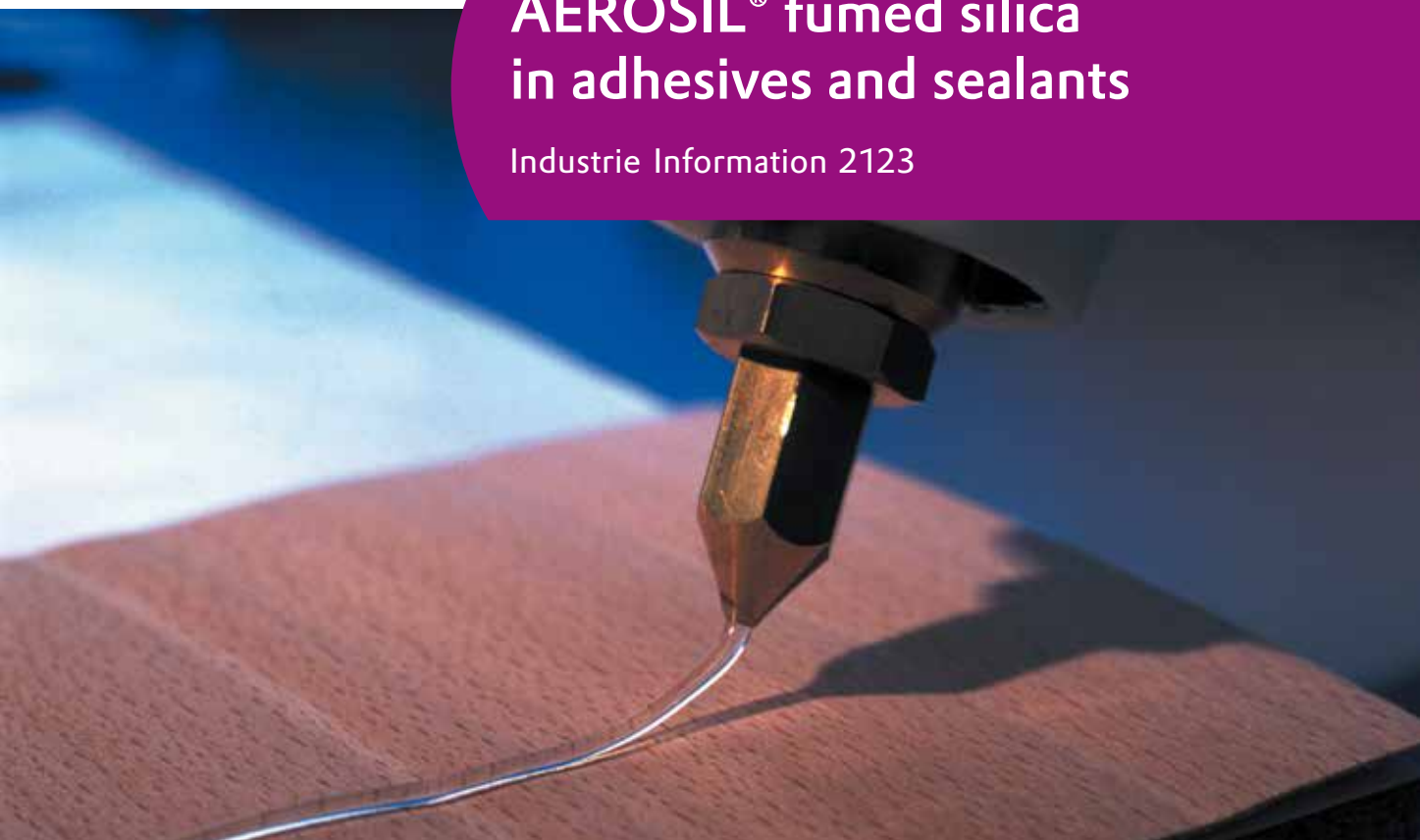


# AEROSIL<sup>®</sup> fumed silica in adhesives and sealants

Industrie Information 2123

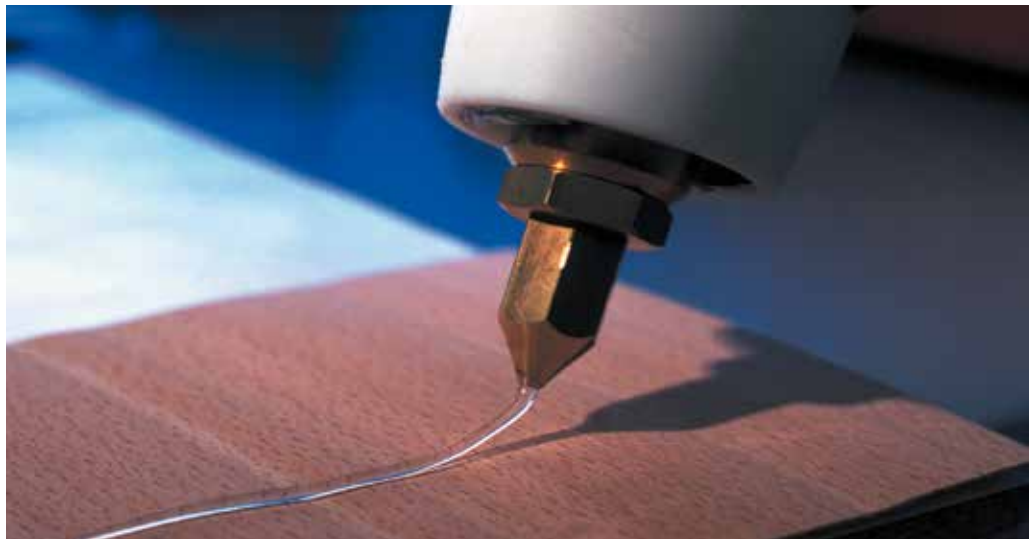


**AEROSIL<sup>®</sup>**

## AEROSIL® fumed silica in adhesives and sealants

AEROSIL® fumed silica is a highly dispersed or fumed silicon dioxide. Hydrolysis of chlorosilanes in an oxygen-hydrogen flame, produces an extremely fine, amorphous white powder of very high purity. The extremely small primary particles naturally result in a large specific surface area, ranging from 50 m<sup>2</sup>/g to 380 m<sup>2</sup>/g. AEROSIL® fumed silica is invented to improve the manufacturing, quality and performance of adhesives and sealants. 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, as well as the AEROXIDE® Alu C are mainly used as additives for anti-sag, rheology control and anti-settling in structural adhesives, solvent- and water-based adhesives. In sealants, AEROSIL® fumed silica is used as rheology control and reinforcing additive while AEROXIDE® TiO<sub>2</sub> P 25 improves the thermal stability. AERODISP® W 7520 is a low viscous, water-based dispersion of AEROSIL® fumed silica which improves shear adhesion and clarity of water-based pressure sensitive adhesives.

- THIXOTROPY
- YIELD POINT
- VISCOSITY CONTROL
- REINFORCEMENT
- ANTI-SAG
- ANTI-SETTLING
- SPRAYABILITY
- BONDING STRENGTH



## AEROSIL® fumed silica in adhesives

System	AEROSIL®-Grade	Concentration in wt. %	Effect	Dispersion Equipment
Epoxy	AEROSIL® 200 AEROSIL® 380 AEROSIL® R 202 AEROSIL® R 805	1–10 1–10 1–8 1–8	Anti-Sag, Thixotropy, Anti-Settling	Dissolver, Planetary-Dissolver
Polyurethane	AEROSIL® 200 AEROSIL® R 972 AEROSIL® R 974 AEROSIL® R 202	1–6 1–6 1–6 1–5	Anti-Sag, Thixotropy, Anti-Settling	Dissolver, Planetary-Dissolver
MS/SMP/SPU	AEROSIL® R 974 AEROSIL® R 202 AEROSIL® R 812 S	1–6 1–6 1–6	Anti-Sag, Thixotropy, Reinforcement, Transparency	Dissolver, Planetary-Dissolver
Acrylate/ Methylacrylate	AEROSIL® 200 AEROSIL® 300 AEROSIL® COK 84 AEROSIL® R 711 AEROSIL® R 7200	0.5–4 0.5–4 0.5–3 0.5–3 5–15	Anti-Sag, Thixotropy, Anti-Settling, Improves Scratch-Resistance and Hardness (R 7200)	Dissolver, Planetary-Dissolver
Unsaturated Polyester	AEROSIL® 200 AEROSIL® 300 AEROSIL® 380 AEROSIL® R 7200	1.5–7 1.5–7 1.5–7 5–15	Anti-Sag, Thixotropy, Anti-Settling, Improves Hardness (R 7200)	Dissolver, Planetary- Dissolver, Inline Rotor-Stator, Ultrasonic
Vinylester	AEROSIL® R 202 AEROSIL® R 812 S AEROSIL® R 7200	1–6 1.5–7 5–15	Anti-Sag, Thixotropy, Anti-Settling, Improves Hardness (R 7200)	Dissolver, Planetary- Dissolver, Ultrasonic, Inline Rotor-Stator
Silicone	AEROSIL® 200 AEROSIL® R 972	1–6 1–7	Anti-Sag, Thixotropy, Anti-Settling, Reinforcement	Dissolver, Planetary- Dissolver
Polychloroprene	AEROSIL® 200	0.6–3	Thixotropy, Anti-Sag, Preventing of strings during application	Dissolver
Polyvinylchloride	AEROSIL® 200	0.8–4	Thixotropy, Anti-Sag, Preventing of strings during application	Dissolver
Pressure Sensitive water based	AEROSIL® 200 AEROSIL® R 972 AERODISP® W 7520	0.8–3 0.8–3 0.5–2.5	Anti-Sag, Reinforcement, prevents strike through, Shear adhesion, Clarity	Extruder, Kneader, Dissolver
Hotmelts (Polyester, Polyamide, Polyurethane)	AEROSIL® 200 AEROSIL® R 972 AEROSIL® R 8200	0.5–5 0.5–5 5–10	Anti-Sag, Thixotropy, Stabilizing, Reinforcement	Extruder, Kneader
Neoprene, water based	AEROXIDE® Alu C AEROSIL® 200	6–18	Anti-Sag, Thixotropy, Stabilizing, Reinforcement	Dissolver
Ethylene Vinyl Acetate, water based	AEROXIDE® Alu C	3–6 3–6	Anti-Sag, Thixotropy, Pigment suspension, Reinforcement	Dissolver
Polyurethane, water based	AEROSIL® COK 84 AEROSIL® R 974 AEROXIDE® Alu C	3–6 3–6 3–6	Anti-Sag, Thixotropy, Resistance to moisture	Dissolver
Acrylate, water based	AEROSIL® 200 AEROSIL® COK 84 AEROSIL® R 974 AERODISP® W 7520	2–5 2–5 2–5 1–3	Anti-Sag, Thixotropy, Resistance to moisture, Shear adhesion, Clarity	Dissolver

## AEROSIL® fumed silica in sealants

System	AEROSIL®-Grade	Concentration in wt. %	Effect	Dispersion Equipment
1-K Silicone (RTV-1)	AEROSIL® 130	7–10	Anti-Sag, Thixotropy, Reinforcement, Improves Transparency (R 106, R 812 S), Self-leveling (R 8200), R 812 S), Thermal stability, (AEROXIDE® TiO <sub>2</sub> P 25)	Planetary-Dissolver, Press-Mixer, Extruder
	AEROSIL® 150	7–10		
	AEROSIL® R 972	7–10		
	AEROSIL® R 974	7–10		
	AEROSIL® R 106	7–10		
	AEROSIL® R 812 S	7–10		
	AEROSIL® R 8200	7–10		
AEROXIDE® TiO <sub>2</sub> P 25	1–2			
2-K Silicone (RTV-2)	AEROSIL® R 8200	15–30	Reinforcement, Self-leveling, Thermal stability	Planetary-Dissolver, Press-Mixer, Kneader
	AEROXIDE® TiO <sub>2</sub> P 25	0.5–1.5		
1-K Polyurethane	AEROSIL® R 972	2–10	Anti-Sag, Thixotropy, Anti-Settling, Reinforcement	Planetary-Dissolver, Kneader, Inline Rotor-Stator
	AEROSIL® R 974	2–10		
	AEROSIL® R 202	2–7		
Polyacrylate	AEROSIL® 200	0.8–3	Anti-Sag, Thixotropy, Anti-Settling, Reinforcement	Planetary-Dissolver, Rotor-Stator
	AEROSIL® R 972	0.8–4		
	AEROSIL® R 974	0.8–4		
	AEROSIL® R 805	0.8–4		
Polysulfide	AEROSIL® 200	1–4	Anti-Sag, Thixotropy, Reinforcement	Planetary-Dissolver, Kneader
	AEROSIL® R 972	1–4		
	AEROSIL® R 202	1–3		
Butyl	AEROSIL® 200	1–3	Anti-Sag, Thixotropy, Reinforcement	Planetary-Dissolver, Kneader
	AEROSIL® R 972	1–4		
MS/SMP/SPU	AEROSIL® R 972	1–4	Anti-Sag, Thixotropy, Reinforcement	Planetary-Dissolver, Kneader
	AEROSIL® R 974	1–4		
	AEROSIL® R 8200	5–15		
PVC-Plastisol	AEROSIL® 200	0.8–1.2	Anti-Sag, Thixotropy	Planetary-Dissolver, Kneader, Triple roll mill
	AEROSIL® 300	0.8–1.2		
	AEROSIL® 380	0.8–1.2		

## Safety and Handling

With the first (sample-) delivery of our products we will send a Safety Data Sheet. Of course you can also ask at any time for a Safety Data Sheet or any other information regarding product safety.

## Packing and Storage

AEROSIL® fumed silica is supplied in multiple layer bags, FIBC`s and silo trucks.\*. We recommend to store the product in closed containers under dry conditions and to protect the material from volatile substances. AEROSIL® should be used within 2 years after production.

\* Package is dependent on manufacturing and may be different in your region.

Registration	CAS-No.	REACH (Europe)	TSCA (USA), AICS (Australia), DSL (Canada), PICCS (Philippines)	ENCS (Japan)	KECI (Korea)	IECSC (China)
AEROSIL® 130, 150, 200, 300, 380	112 94 5-52-5 ex. 7631-86-9	231-545-4	registered	1-548	KE-30953 (KE-31032)	registered
AEROSIL® COK 84	112 945-52-5 ex. 7631-86-9 / 1344-28-1	231-545-4 / 215-691-6	registered	1-548/1-23	KE-30953 / KE-01012	registered
AEROSIL® R 972	68 611-44-9	271-893-4	registered	1-548/7-476	KE-10116	registered
AEROSIL® R 974	68 611-44-9	271-893-4	registered	1-548/7-476	KE-10116	registered
AEROSIL® R 812 S	68 909-20-6	272-697-1	registered	1-548/7-476	KE-34696	registered
AEROSIL® R 8200	68 909-20-6	272-697-1	registered	1-548/7-476	KE-34696	registered
AEROSIL® R 805	92 797-60-9	296-597-2	TSCA: information on request PICCS, AICS, DSL: registered	1-548/7-476	KE-34366	registered
AEROSIL® R 202	67 762-90-7	defined as polymer, therefore not listed	registered	1-548/7-476	KE-31207	registered
AEROSIL® R 106	68 583-49-3	271-514-2	registered	1-548/7-476	KE-26607	registered
AEROSIL® R 711	100402-78-6	309-515-8	TSCA: registered, AICS: exempted, DSL: NDSL-listed PICCS: not registered	1-548/2-2076	temp. ECL-No.: 2001-3-1787	registered
AEROSIL® R 7200	100402-78-6	309-515-8	TSCA: registered, AICS: exempted, DSL: NDSL-listed PICCS: not registered	1-548/2-2076	temp. ECL-No.: 2001-3-1787	registered
AEROXIDE® Alu C	1344-28-1	215-691-6	registered	1-23	KE-01012	registered
AEROXIDE® TiO <sub>2</sub> P 25	13463-67-7	236-675-5	registered	1-558	registered	registered
AERODISP® W 7520	7631-86-9	231-545-4	registered	1-548	KE-31032	registered

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