

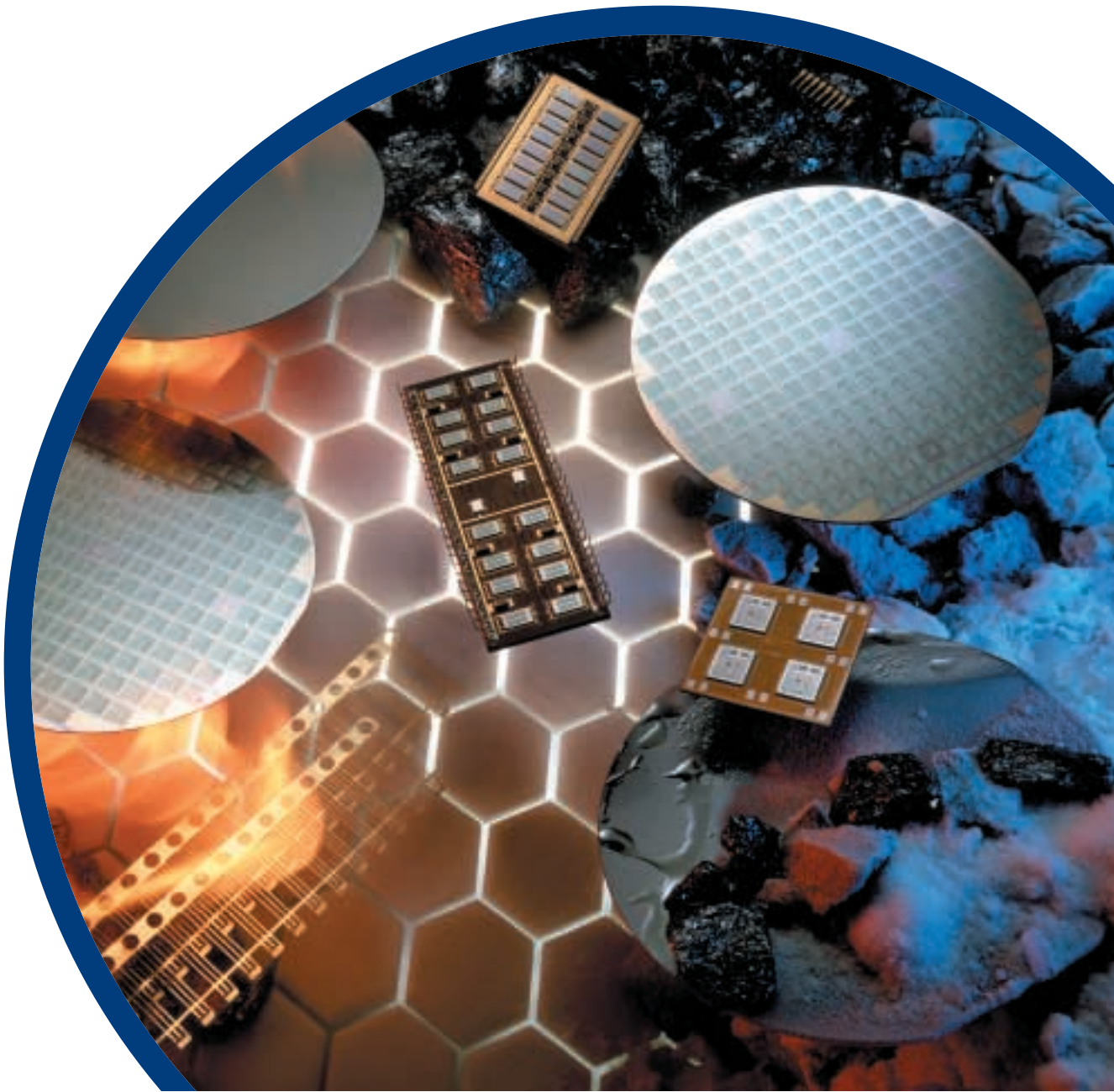
clarity self-healing
primerless protection

Electronic Materials



Gels

Material Selector Guide



High Performance Gels For Electronics Applications



GESilicones-Electronics.com

For delicate electronic circuit assemblies, nothing performs like GE silicone gels. These low-viscosity liquid silicones cure to form very soft, gel-like elastomers. These materials have been found useful for preserving dielectric integrity and providing outstanding protection in harsh operating environments.

- Optical clarity allows visual inspections
- Self-healing stability
- Outstanding mechanical and thermal stress protection
- Vibration dampening
- Primerless adhesion to many substrates

GE Silicones

* The actual cure time is application specific and will depend on such factors as cross-sectional thickness of the applied material, the thermal properties of the overall assembly, oven type and efficiency, and oven loading.

** This rating is based on a standard, small-scale laboratory test and as such is not reliable for determining, evaluating, predicting or describing the flammability or burning characteristics of the product under actual fire conditions.

Materials in this brochure will provide a PSA (mechanical) bond, which has proven adequate for most uses. However, they require a primer to obtain a chemical bond to various substrates. For a chemical bond, use SS4155 (blue) or SS4120 (clear) primer.

Properties	Gels										Thermally Conductive		Low Volatility	Binder Gels 2-Part (Addition) Cure		
	RTV6126-D1 Transparent, Blue	RTV6136-D1 Transparent, Yellow, Blue	RTV6156 Transparent	RTV6166 Transparent	RTV6186 Transparent	RTV6196 Transparent	TSE3051 Transparent	TSE3051FR Transparent	TSE3053 Transparent	TSE3067 Blue	TSE3080 Black	TSE3081 Black	XE14-A6158 Light Yellow	TSE3062 Transparent	TSE3070 Transparent	XE14-B7393 Transparent
Mix Ratio (base to curing agent by weight)	1 : 1	1 : 1	1 : 1	1 : 1	1 : 1	1 : 1	1-part	1-part	1-part	1 : 1	1 : 1	1 : 1	1 : 1	1 : 1	1 : 1	1 : 1
Viscosity, cps (@ 25°C/77°F)	750	750	750	750	750	750	700	700	700	20,000	7,000	20,000	8,500	1,000	7,800	6,500
Specific Gravity	0.98	0.98	0.98	0.98	0.98	0.98	0.97	0.97	0.97	0.97	1.50	2.50	0.97	0.97	0.98	0.97
Refractive Index	1.406	1.406	1.43	1.406	1.406	1.406	1.404	1.404	1.404	N/A	NA	NA	—	—	1.404	—
Hardness, Penetration, mm	6.5	6.0	4.0	6.0	6.0	6.0	—	—	—	—	—	—	—	—	—	—
Hardness, Penetration, ASTM D 1403, mm	—	—	—	—	—	—	85	85	105	65	25	10	70	55	65	100
Useful Temperature Range (continuous), °C (°F)	-50 to +204 (-58 to +400)	-50 to +204 (-58 to +400)	-115 to +204 (-175 to +400)	-50 to +204 (-58 to +400)	-50 to +204 (-58 to +400)	-50 to +204 (-58 to +400)	-50 to +200 (-58 to +392)	-50 to +200 (-58 to +392)	-50 to +200 (-58 to +392)	-50 to +200 (-58 to +392)	-50 to +200 (-58 to +392)	-50 to +200 (-58 to +392)	-50 to +200 (-58 to +392)	-50 to 204 (-58 to 400)	-50 to +204 (-58 to +400)	-50 to 204 (-58 to 400)
Thermal Conductivity, W/mK	0.19	0.19	0.19	0.19	0.19	0.19	0.17	0.17	0.17	0.17	0.63	1.26	0.17	0.17	0.17	0.17
Coefficient of Thermal Expansion (Linear CTE), cm/cm °C (in/in °F)	27 x 10 ⁻⁵ (15.3 x 10 ⁻⁵)	27 x 10 ⁻⁵ (15.3 x 10 ⁻⁵)	27 x 10 ⁻⁵ (15.3 x 10 ⁻⁵)	27 x 10 ⁻⁵ (15.3 x 10 ⁻⁵)	27 x 10 ⁻⁵ (15.3 x 10 ⁻⁵)	27 x 10 ⁻⁵ (15.3 x 10 ⁻⁵)	—	—	—	—	—	—	—	—	—	—
Cubical Expansion, (l/°C)	—	—	—	—	—	—	1 x 10 ⁻³ (0.56 x 10 ⁻³)	1 x 10 ⁻³ (0.56 x 10 ⁻³)	1 x 10 ⁻³ (0.56 x 10 ⁻³)	—	—	—	1 x 10 ⁻³ (0.56 x 10 ⁻³)	1 x 10 ⁻³ (0.56 x 10 ⁻³)	1 x 10 ⁻³ (0.56 x 10 ⁻³)	1 x 10 ⁻³ (0.56 x 10 ⁻³)
Dielectric Strength (75 mils), kV/mm (V/mil)	20.5 (500)	20.5 (500)	20.5 (500)	20.5 (500)	20.5 (500)	20.5 (500)	18 (400)	18 (400)	18 (400)	18 (400)	22 (450)	22 (450)	18 (400)	18 (400)	18 (400)	18 (400)
Dielectric Constant (@ 1 kHz)	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	3.3	5.0	2.7 @ 60 Hz	1	2.7	2.7
Dissipation Factor (@ 1 kHz)	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.03	0.003	0.001 @ 60 Hz	—	0.002	—
Volume Resistivity, ohm-cm	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵	1 x 10 ¹⁵
Specifications	—	—	—	—	—	—	—	—	UL94 V-1* @ 3.0 mm	—	—	—	0.1 wt% volatile siloxane	—	—	0.1 wt% volatile siloxane
Packaging	2/18/80 lb. kits	80/800 lb. kits	80 lb. kit	18/80/800 lb. kits	80/800 lb. kits	2/18/80/800 lb. kits	1 kg can, 15 kg pail	1 kg can	1 kg can, 180 kg drum	1 kg can, 180 kg drum	1 kg can, 20 kg pail	1 kg can	1 kg can	1 kg can, 5/18 kg pail	1 kg can	18 kg pail
Processing																
Work (Pot) Life (25°C/77°F)	5 minutes	30 minutes	1 hour	2 hours	8+ hours	15 minutes	2 weeks	2 weeks	2 weeks	1.5 hours	3 hours	3 hours	4 hours	1 hour	4 hours	30 minutes
Cure Time (@ 50% RH)*																
25°C (77°F)	< 1 hour	< 4 hours	< 18 hours	< 24 hours	NA	< 2 hours	NA	NA	NA	< 24 hours	48 hours	48 hours	24 hours	—	< 24 hours	—
65°C (149°F)	20 minutes	2 hours	4 hours	4 hours	4 hours	1 hour	NA	NA	NA	45 minutes	—	—	45 minutes	—	45 minutes	—
70°C (158°F)	—	—	—	—	—	—	—	—	—	—	—	—	—	30 minutes	—	—
100°C (212°F)	5 minutes	20 minutes	1 hour	1 hour	1 hour	10 minutes	3 hours	3 hours	3 hours	—	1 hour	1 hour	—	—	—	—
125°C (256°F)	—	—	—	—	—	—	2 hours	2 hours	2 hours	—	—	—	—	—	—	30 minutes
150°C (302°F)	2 minutes	10 minutes	15 minutes	15 minutes	15 minutes	5 minutes	1 hour	1 hour	1 hour	—	—	—	—	—	—	—

Typical product data values should not be used as specifications. Assistance and specifications are available by contacting GE Silicones at 800.255.8886.

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