

PRODUCT DESCRIPTION

LOCTITE® Product 5050 is a light-cured cure in place silicone gasket sealant.

TYPICAL APPLICATIONS

Cure in place gasketing applications

TYPICAL PROPERTIES OF UNCURED MATERIAL

	Range
Chemistry Type	silicone
Appearance	translucent
Extrusion Rate @ 25°C, g/min (0.6 mPa, 3.2 mm orifice)	150 to 500
Flow (boeing sag), mm	≤5

TYPICAL CURING PERFORMANCE

Normal processing conditions will include exposure to >60 mW/cm² at 365 nm light irradiance for 1 minute to effectively cure the material. Higher irradiances will require less time. Although functional strength is developed almost instantly due to the light curing nature of this product, full performance properties will develop over 24 hours.

UV Depth of Cure, mm 70 mW/cm ² @ 365 nm for 60 s	≥10
UV Tack free time, seconds 70 mW/cm ² @ 365 nm for 60 s	≤40

Surface Cure

When curing with sufficient light irradiance (>10 mW/cm² at 254 nm), exposed material will cure dry to the touch in approximately 20 to 30 seconds. This was accomplished using a medium pressure mercury arc bulb.

Light Source	Irradiance	Time (sec)
Loctite® 7735	1 W/cm ²	>10≤20
Loctite® 7740	1 W/cm ²	>5≤10
Loctite® 7760	1 W/cm ²	>45≤60

Depth of Cure vs. Irradiance

Light Source	Irradiance	Thickness, Millimeters			
		30 sec	60 sec	90 sec	120 sec
Loctite® 7735	1 W/cm ²	13.38	16.49	20.28	21.39
Loctite® 7740	1 W/cm ²	3.53	5.61	7.79	6.38
Loctite® 7760	1 W/cm ²	5.31	6.60	7.85	9.45
Loctite® Cure Jet	333 mW/cm ²	4.50	6.16	8.07	12.61

TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 70 mW/cm² in using a MPMA bulb, measured @ 365 nm for 60 seconds per side plus 24 hours at 22°C / 50 ± 5% RH.

Physical Properties	Typical Value
Hardness, Shore A, ASTM D2240	45
Tensile Strength, ASTM D412, (psi)	421
Tear Strength, lbf/in	60
% Elongation @ break, ASTM D412, %	115
Water Absorption, 24 hrs Room Temperature %	1.4
Compression Set, %	
Aged @ 22 °C for 24 hours	3.8
Aged @ 70 °C for 24 hours	12.3
Aged @ 121 °C for 24 hours	19.9
Aged @ 150 °C for 24 hours	51.3

Heat Aging

Cured @ 70 mW/cm² in using a MPMA bulb, measured @ 365 nm for 60 seconds per side plus 24 hours at 22°C / 50 ± 5% RH.

Hardness: % Retained

Conditioning	1 week	2 weeks	4 weeks
Aged @ 121° C	92	92	100
Aged @ 149° C	89	91	104
Aged @ 177° C	92	101	112

Tensile strength: % Retained

Conditioning	1 week	2 weeks	4 weeks
Aged @ 121° C	134	127	118
Aged @ 149° C	108	120	125
Aged @ 177° C	100	100	100

Elongation at break: % Retained

Conditioning	1 week	2 weeks	4 weeks
Aged @ 121° C	177	122	122
Aged @ 149° C	138	114	114
Aged @ 177° C	116	107	100

Chemical/Solvent Resistance

Cured @ 70 mW/cm² in using a MPMA bulb, measured @ 365 nm for 60 seconds per side plus 24 hours at 22°C / 50 ± 5% RH.

Conditioning	Fluid Immersion % initial strength		
	1 week in 100° C 50:50 Water/Glycol	1 week in 150 °C 5W30	1 week in 150 °C ATF
Tensile Strength	100	61	42
Elongation	100	165	165
Hardness	85	35	23

USE AND APPLICATION

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials.

For safe handling information on this product, consult the Material Safety Data Sheet (MSDS).

Directions for Use

1. This product is light sensitive; exposure to daylight, UV light and artificial lighting should be kept to a minimum during storage and handling.
2. The product should be dispensed from applicators with black feedlines.
3. For best performance bond surfaces should be clean and free from grease or other contaminants.
4. The product is designed to be cured using commercially available UV curing equipment.
5. Functional strength is achieved instantly.
6. Full adhesion properties will develop over 1-3 days.
7. Excess material can be easily wiped away with non-polar solvents.

Storage

Store product in cool, dry location, in unopened containers at a temperature between 8°C and 28°C unless otherwise labeled. To prevent contamination of unused product, do not return any material to its original container. If additional information is required, please contact your Application Engineer at (860) 571-5100.

Data Ranges

The data contained herein may be reported as a typical value and/or range. Values are based on actual test data and are verified on a periodic basis.

Note

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