

silset® SI3780 GRAY Technical Data Sheet

4/04/2018

N109 W13300 ELLSWORTH DRIVE GERMANTOWN, WI 53022
262-253-5900 FAX 262-253-5919

DESCRIPTION:

Resinlab® silset® SI3780 GRAY is a two part thermally conductive silicone designed for use in cartridges and small volume molding using MoldMan Systems™ equipment. It cures to a hard, grey silicone rubber with excellent adhesion to various substrates including FR4 printed circuit board.

When used in molding equipment, silset® SI3780 Gray can only be processed in MoldMan Systems™ Mix on Demand Molding™ equipment.

It was formulated to a 1A:1B volume mix ratio for use in side-by-side dispensing cartridges and meter/mix and dispense equipment.

TYPICAL PROPERTIES:

All properties given are at 25 °C unless otherwise noted.

Property:	Value:	Test Method or Source:
Color	Gray	Visual
Mix Ratio	Part A to Part B	Calculated
By weight	0.95 to 1	
By volume	1 to 1	
Mix On Demand Molding™ Cure Schedule	<p>This product molds well in the temperature range of 100 - 150 °C, which typically provides full cure in less than 2 minutes.</p> <p>Please note that in molding applications, cycle time is highly dependent on volume, mold temperature, and geometry.</p>	
Cure Schedule	At room temperature, full properties are reached within 24 hours.	
Viscosity – Part A	53,000 cps	Rheometer parallel plate 25mm@1/s 455300006291
Viscosity – Part B	99,000 cps	
Viscosity - Mixed	83,000 cps	
Specific Gravity – Part A	2.13	Calculated
Specific Gravity – Part B	2.25	
Specific Gravity - Mixed	2.19	
Pot Life	6.5 hours	Rheometer parallel plate 25mm@1/s 455300006291
Gel Time	7.5hours/100cc sample	455300005339/Gardco Hot Pot Gel Timer
Hardness	80 Shore A	455300006287/ASTM D2240
Glass Transition Temperature	-120 °C	453560822409 by DSC
Water Absorption	0 % after 24 hours	457561824543/ASTM D570
Tensile Properties:		455300006285/ASTM D638
Strength	250 psi	
Elongation	8%	
Modulus	4,000 psi	

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Flame Resistance	Passes Resinlab testing for V-0 at 3.0mm thickness. Not UL Certified for HB,V0,V1,V2	UL94
Thermal Conductivity by LFA	1.2 W / (m.K)	453560822409/ASTM E1461
Coefficient of Thermal Expansion by TMA	200 ppm/ °C	TMA, 5 °C/min/ASTM E831
Lap Shear Strength		455300005642/ASTM D1002
0.010" bond line Al to Al	95 psi	
0.010" bond line SS to SS	160 psi	
0.010" bond line PVC to PVC	57 psi	
0.010" bond line ABS to ABS	110 psi	
0.010" bond line Acrylic to Acrylic	43 psi	
0.010" bond line HDPE to HDPE	46 psi	
0.010" bond line FR4 to FR4	300 psi	
0.010" bond line PC to PC	34 psi	

INSTRUCTIONS:

1. Bring both components to room temperature prior to mixing.
2. Cartridge format: Mixer should be attached keeping the cartridge vertical and any air pocket purged this way. After the mixer contains material, the mixer tip can be dropped to dispense pre-bleed amount. Attach a new static mixer with each cartridge, then pre-bleed the first 3 inches of dispensed material or until a uniform color is obtained. Maintain adequate velocity during dispensing to ensure complete mixing.
3. Bulk format: weigh and mix parts A and B accurately and thoroughly, scraping sides of container often. Do not pour from mixing container, transfer to a new container as residual unmixed material may cause a tacky spot on the surface of the casting. Maintain adequate velocity during dispensing to ensure complete mixing.
4. Allow to cure undisturbed until product is fully gelled or tack-free to the touch.
5. Clean up uncured resin with suitable organic solvent such as MEK, acetone or other organic solvent.

MIX ON DEMAND MOLDING™ INSTRUCTIONS:

1. Bring both components to room temperature prior to mixing.
2. Cartridge format: A static mixer is needed in the Mold Man® 2050 static mixer assembly to mix the system. Check that the Nordson EFD system is properly pressurizing cartridges to feed material into the machine.

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3. Bulk format: Mix part A and part B if there are any signs of settling or separation. Attach bulk dispense system to feed material into the machine.
4. Provide an adequate cycle time based on the chosen processing temperature to allow the material to cure within the mold.
5. Clean up uncured resin with suitable organic solvent such as MEK, acetone, or other organic solvent.

SHELF LIFE AND STORAGE:

12 months at 25 °C
Specialty packaging may be less.

Addition cure silicones contain a platinum catalyst that is susceptible to inhibition. Common sources of inhibition include: amines or amine-containing compounds, sulfur or sulfur-containing compounds, organotin catalyst or plastics containing organotin catalyst, unsaturated hydrocarbon plasticizers, and solder flux residues. Uncured or partially cured product at the site of the suspected source of inhibition indicates incompatibility.