

CSL-520 Technical Data Sheet

Silicone Potting and Encapsulating Compound

1. PRODUCT NAME

CSL-520 Silicone Potting and Encapsulating Compound

2. FEATURES

- Smooth, pourable liquid
- 2-part catalyst cure
- No preheating required
- Cures in any thickness without heat

3. PRODUCT DESCRIPTION

CSL-520 Silicone Potting and Encapsulating Compound is a pourable rubber base which, with the addition of catalyst becomes a firm, flexible rubber when cured at room temperature. The cured RTV rubber exhibits good dielectric properties. Various combinations of base and catalyst allow a wide range of working times and cure rates that satisfy most potting and encapsulating needs.

CSL-520 offers the following features:

- Easily mixed and poured without preheating
- Cures at room temperature

- Safe to use and handle.
- Cures in any thickness without exothermic heat
- Resists high temperatures
- Absorbs mechanical shock and vibration
- Easy to repair by cutting away old material and repouring fresh encapsulant

4. DIRECTIONS

For potting or encapsulating with CSL-520, the part or assembly is placed in a form with clearance at all points where sealing is necessary. The form can be made of paper, aluminum foil, metal or plastic. If a release agent is required, a 3% detergent solution is normally satisfactory when applied to the form and allowed to dry. The catalyzed CSL-520 rubber is poured into the form. The form is stripped after the material is cured. See CURING section for times.

Mixing

Select a mixing container 4-5 times larger than the volume of CSL 520 to be used. Weigh out the base compound and stir base

Typical Properties

These values are not intended for use in preparing specifications

Uncured	
Type	100% silicone, 2-part RTV
Appearance	Smooth, pourable liquid
Specific Gravity	1.60
Cure System	Catalyst Cure
Cure Time at Standard Conditions*	See "Curing" section in Directions
Cured	
At Standard Conditions* for 7 Days	
Durometer Hardness (ASTM D2240, Shore A)	45 points
Tensile Strength (ASTM D412)	26 kg/cm ² (350 psi)
Elongation at Break (ASTM D412)	150%
Tear Resistance (ASTM D624, Die B)	2.7 kN/m (15 pli)
Useable Temperature Range	-60°C to 200°C (-70°F to 390°F)
Linear Coeff. of Thermal Expansion, 0°C to 100°C (32°F to 212 °F)	5.0 x 10 ⁻⁴ cm/cm°C
Thermal Conductivity	6.0 x 10 ⁻⁴ cal/sec.cm.°C
Dielectric Strength (ASTM D149)	440 V/mil (175kV/cm)
Volume Resistivity (ASTM D257)	>2.3 x 10 ¹⁵ ohm.cm
Dissipation Factor, at 100 Hz and at 100 kHz (ASTM D150)	0.030, 0.005
Dielectric Constant, 100 Hz and at 100 kHz (ASTM D150)	3.51, 3.45

*Standard Conditions are 25°C (77°F) and 50% relative humidity

material well before adding the appropriate amount of CSL Catalyst A. With clean tools, thoroughly mix the base compound and catalyst, scraping the sides and the bottom of the container carefully to produce a homogenous mixture. When using power mixers, avoid excessive speeds which could entrap large amounts of air or cause overheating of the mixture, resulting in shorter pot life.

Deairing

Air entrapped during mixing should be removed to eliminate voids in the cured product. Expose the mixed material to a vacuum of 28 to 29" of mercury. The material will expand, crest and recede to about the original level as the bubbles break. When using CSL-520 for potting, a deairing step might be necessary after pouring to avoid trapping air in complex assemblies.

Curing

CSL-520 is cured by the addition of CSL Catalyst A. The pot life and cure time can be adjusted with the addition of varying amounts of catalyst. See table below.

Catalyst A	Pot Life (min.)	Cure Time (hr.)
4%	30	2
3%	90	6
2%	240	16

Pot life can be extended by refrigerating the catalyzed mixture at 0°C (32°F). Cure times can be shortened by using heat up to 93°C (200°F) maximum.

5. COLORS

CSL-520 is available in white only.

6. PACKAGING

CSL-520 is available in 3.8L (1 US gallon) cans, 19L (5 US gallon) pails and 189L (50 US gallon) drums.

7. STORAGE

CSL-520 and Catalyst A will last for long periods if stored in cool dry conditions. At temperatures below 18°C (65°F), CSL Catalyst A may solidify. Warm gently to liquefy before using. Some white precipitate in the catalyst is normal and will not affect curing.

8. SAFETY PRECAUTIONS

Upon contact, CSL Catalyst A will burn skin and irritate eyes. In case of contact, flush with water. Skin contact areas should be thoroughly washed with soap and water. Persistent irritation should receive medical attention. Products containing CSL Catalyst A should not be used in contact with foods, drugs or cosmetics. Uncured CSL 520 will irritate eyes, but is not known to produce any toxic effects.

9. WARRANTY

CSL Silicones Inc. warrants that its products will meet its specifications. CSL shall in no event be liable for incidental or consequential damages. Except as expressly stipulated, CSL's liability, expressed or implied, is limited to the stated selling price of any defective goods.

Data is subject to change without notice and it is therefore recommended that this information not be used for specification writing. For additional information on specific applications, contact the manufacturer.

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