

### Description

N-Sil 8220 is a two-part thermally conductive silicone encapsulant. It can be either room temperature cured or heat cured for maximum adhesion. Typical application is a LED lighting power supply encapsulation where high heat dissipation is required.

### Features

- High thermal conductivity
- Low shrinkage
- Low mechanical stress
- High reliability and excellent shock resistance
- UL94\_V0

### Uncured Properties

<b>Chemical Type</b>	Silicone
<b>Appearance</b>	
Part A	White
Part B	Grey
<b>Viscosity @ 25°C [mPa·s]</b>	
Brookfield LVDV, spindle 14# @100rpm	
Part A	15,000
Part B	15,000
Mixed	15,000
<b>Mix Ratio A:B</b>	
By Weight	1:1
<b>Specific Gravity [g/cm<sup>3</sup>]</b>	~2.6
<b>Shelf Life @ 10-28°C [months]</b>	6
<b>Pot Life @ 25°C [mins]</b>	40-60

### Curing Conditions

<b>Fixture Time @ 25°C [mins]</b>	60-90
<b>Full Strength</b>	
@ 25°C [hrs]	5
@ 80°C [mins]	30

### Cured Properties

<b>Hardness [Shore A]</b>	75
ASTM D2240	
<b>Thermal Conductivity [W/m·K]</b>	2.0
ASTM D2214	
<b>Surface Resistivity [ohm·cm]</b>	>1.0x10 <sup>14</sup>
ASTM D257	
<b>Volume Resistivity [ohm·cm]</b>	>1.0x10 <sup>15</sup>
ASTM D257	
<b>Dielectric Strength [kV/mil]</b>	12
ASTM D149	
<b>Dielectric Constant/Loss @ 25°C</b>	3.3/0.09
ASTM D150, 1.5GHz	

### Directions for Use

#### 1. Surface Treatment

Surfaces to be bonded should be free of dust, oil, grease or any other contaminants in order to achieve a reproducible bond. For slightly contaminated surfaces, it is sufficient to wipe with isopropanol or ethanol. Substrates with a low surface energy (e.g. polyethylene, polypropylene, Teflon) need to be pre-treated physically (e.g. atmospheric plasma or corona) in order to achieve sufficient adhesion.

#### 2. Application

*Mixing* – Thoroughly stir each component prior to mixing together. Mix resin with hardener at a 1:1 ratio, by weight or volume, until uniform in color. Automatic meter/mix/dispense equipment may be used for high volume production. Unless a closed-chamber mechanical mixer is used, air will be introduced into the encapsulant system either during mixing or when catalyzing the mixture. Electrical properties of the silicone encapsulant are best when air bubbles and

voids are minimized. Therefore, in extremely high voltage or other critical applications, vacuuming may be appropriate.

*Applying* – Apply silicone encapsulant using handheld cartridges or automatic meter, mix, or dispense equipment. Avoid applying encapsulant to surfaces that contain cure inhibiting ingredients, such as amines, sulfur or tin salts. If bonding surface is in question, apply a test patch of encapsulant to the surface and allow it to set for the normal cure time.

3. Suggested working temperature range is -50 to 200°C.

### Storage

Maximum shelf life may be obtained when product is stored in a cool, dry location at a temperature between **10°C to 28°C**.

TO PREVENT CONTAMINATION OF UNUSED PRODUCT, DO NOT RETURN ANY PRODUCT TO ITS ORIGINAL CONTAINER.

### Materials Handling

This product is slight irritant to eye and skin. In case of eye contact, flush with water for fifteen minutes. Wash with plenty of soap and water after skin contact. If feel uncomfortable, discontinue use and consult a physician.

Refer to the Material Safety Data Sheet (MSDS) for this product.

*Disclaimer*

*The information provided here including the recommendations for use and application of the product is based on internal laboratory test conditions and should only be used as a reference. CollTech does not assume responsibility for the test or performance results obtained by the user. It is the responsibility of the user to perform their own evaluations to confirm whether this product is suitable for their application.*