

# Polymer Systems Technology Limited

UK & Ireland Distributor



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# EPM-2491

## Low Outgas Thermally Conductive Silicone Material

### Description

- Two-part, white, thermally conductive, electrically insulating silicone system
- Cures with the addition of heat
- 10:1 Mix Ratio (Part A: Part B)

### Applications

- To provide electric insulation and moderate heat transfer between electrical/electronic components and their heat sinks
- For applications requiring minimal outgassing
- Use to adhere integrated circuit substrates, base plates, heat sinks or where grooves or other configurations require a limited flow, thermal interface, high dielectric strength material

Properties	Average Result	ASTM	NT-TM
<b>Uncured:</b>			
Appearance*	White	D2090	002
Viscosity, Part A*	900,000 cP (900,000 mPas)	D1084, D2196	001
Tack-Free Time*	4.5 hours	C679	005
Work Time*	2.5 hours	-	008
<b>Cured: 4 hours @ 65°C (149°F)</b>			
Specific Gravity*	1.45	D792	003
Durometer, Type A*	75	D2240	006
Tensile Strength*	225 psi (1.6 MPa)	D412	007
Elongation*	55%	D412	007
Tear Strength*	55 ppi (9.7 kN/m)	D624	009
Moisture Absorption, % gain after 168 hour exposure @ 85°C (185°F) / 85% R.H.	0.11%	-	202
Dynamic Mechanical Analysis (DMA)	See Attached Graph	D4065	-
<b>Cured: 30 minutes @ 150°C (302°F)</b>			
Thermal Conductivity*	1.11 W/(mK) (26 x 10 <sup>-4</sup> cal/(cm·sec·°C))	E1530	101

\*Properties tested on a lot-to-lot basis. Do not use the properties shown in this technical profile as a basis for preparing specifications. Please contact NuSil Technology for assistance and recommendations in establishing particular specifications.

### Instructions for Use

#### Mixing and Vacuum Deaeration

EPM-2491 contains dense fillers that settle over time. Prior to mixing Part A and B together, thoroughly stir the Part A to ensure the fillers are homogeneously dispersed. Mix Part A and Part B in a 10:1 mix ratio by weight, just prior to use.

A vacuum chamber should be used to remove the air introduced during mixing. When working with equipment at reduced pressures, ensure container and chamber are rated to withstand the supplier's recommended operational pressure. Reference Material Certification for "Work Time" to determine time between mixing and applying to application. Place mixed material into appropriate container and fill approximately one quarter of the container's total volume to allow material to rise. Slowly apply vacuum up to approximately 28 in. Hg. Hold vacuum until bubbles are no longer observed forming. Breaking the seal while pulling vacuum will allow bubbles to burst, expediting the process. It is not recommended to remove air via centrifuging.

#### Packaging

50 Gram Kit  
 100 Gram Kit

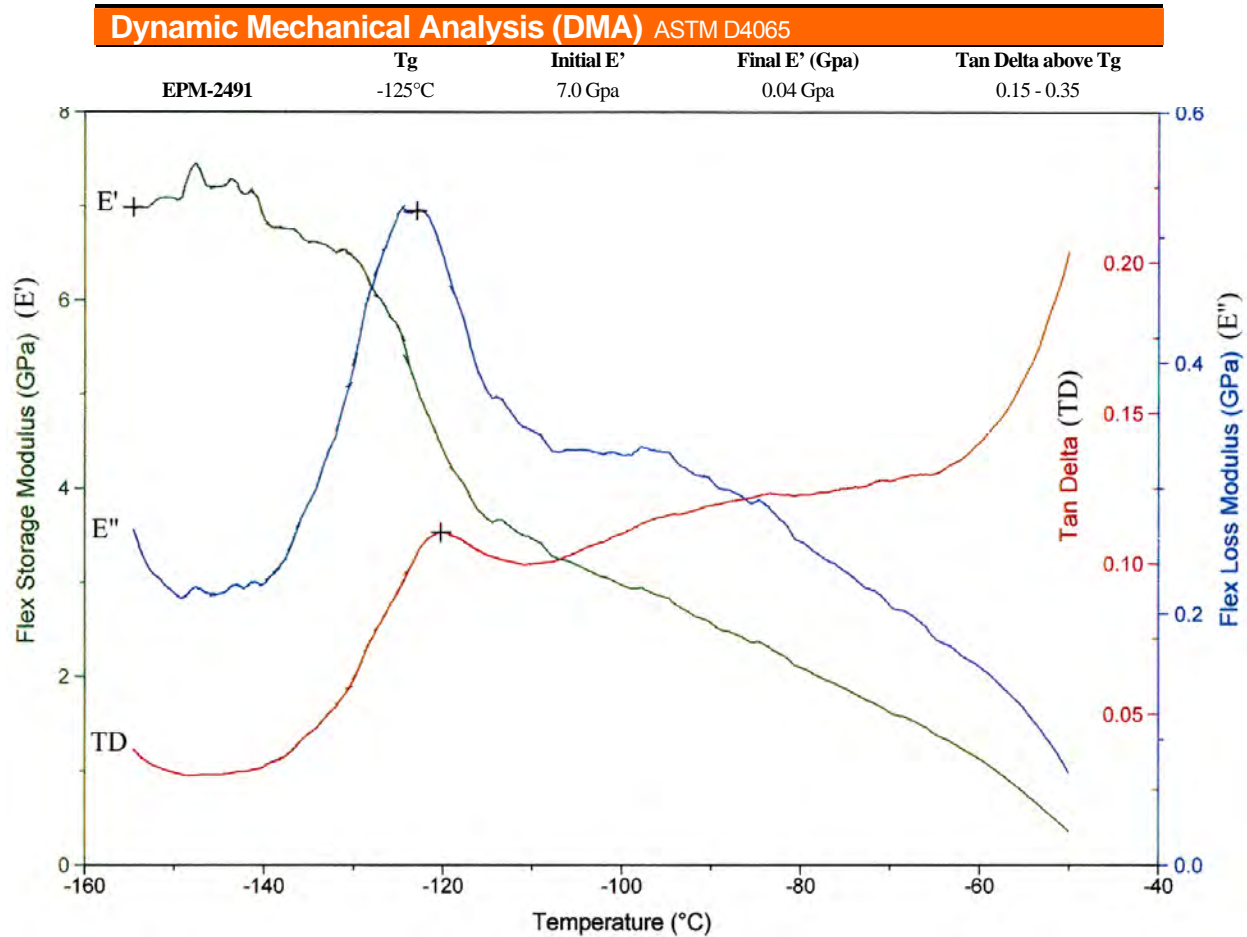
#### Warranty

6 Months

## Substrate Considerations

Cures in contact with most materials. Exceptions include butyl and chlorinated rubbers, some RTV silicones and unreacted residues of some curing agents.

**Note:** Some bonding applications may require the use of a primer. NuSil Technology CF1-135 silicone primer is recommended.



## Heat and Low-Temperature Resistance

In most applications, silicone may be heated from 180 to 200°C for a year, or even up to 450°C for short periods, without any appreciable effect on physical properties. Silicone also demonstrates flexibility at extreme low temperatures, with a stiffening temperature range of -50 to -70°C.

The operating temperature range of a silicone in any application is dependent on many variables, including but not limited to: temperature, time of exposure, type of atmosphere, exposure of the material's surface to the atmosphere, and mechanical stress. In addition, a material's physical properties will vary at both the high and low end of the operating temperature range. The user is responsible to verify performance of a material in a specific application.

## RoHS and REACH Compliance

EPM-2491 is compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS) regulation contained in Article 4(1) of the European Parliament and Council's Directive 2002/95/EC. RoHS mandates that manufacturers restrict the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polychlorinated biphenyls, and polybrominated diphenyl ethers in electrical and electronic equipment.

EPM-2491 is also compliant with the Registration, Evaluation, and Authorization of Chemicals (REACH) regulation (European Union 1907/2006). EPM-2491 does not contain any of the 16 chemicals identified as Substances of Very High Concern (SVHC) by the European Chemicals Agency (ECHA), which oversees REACH compliance.

Please contact NuSil Technology's Regulatory Compliance department with any questions or for further assistance.

## **Specifications**

Do not use the properties shown in this technical profile as a basis for preparing specifications. Please contact NuSil Technology for assistance and recommendations in establishing particular specifications.

## **Warranty Information**

The warranty period provided by NuSil Technology LLC (hereinafter "NuSil Technology") is 6 months from the date of shipment when stored below 40°C in original unopened containers. Unless NuSil Technology provides a specific written warranty of fitness for a particular use, NuSil Technology's sole warranty is that the product will meet NuSil Technology's then current specification. NuSil Technology specifically disclaims all other expressed or implied warranties, including, but not limited to, warranties of merchantability and fitness for use. The exclusive remedy and NuSil Technology's sole liability for breach of warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. NuSil Technology expressly disclaims any liability for incidental or consequential damages.

## **Warnings About Product Safety**

NuSil Technology believes, to the best of its knowledge, that the information and data contained herein are accurate and reliable. The user is responsible to determine the material's suitability and safety of use. NuSil Technology cannot know each application's specific requirements and hereby notifies the user that it has not tested or determined this material's suitability or safety for use in any application. The user is responsible to adequately test and determine the safety and suitability for their application and NuSil Technology makes no warranty concerning fitness for any use or purpose. NuSil Technology has completed no testing to establish safety of use in any medical application.

NuSil Technology has tested this material only to determine if the product meets the applicable specifications. (Please contact NuSil Technology for assistance and recommendations when establishing specifications.) When considering the use of NuSil Technology products in a particular application, review the latest Material Safety Data Sheet and contact NuSil Technology with any questions about product safety information.

Do not use any chemical in a food, drug, cosmetic, or medical application or process until having determined the safety and legality of the use. The user is responsible to meet the requirements of the U.S. Food and Drug Administration (FDA) and any other regulatory agencies. Before handling any other materials mentioned in the text, the user is advised to obtain available product safety information and take the necessary steps to ensure safety of use.

## **Patent / Intellectual Property Warning**

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