

Polymer Systems Technology Limited

UK & Ireland Distributor



© 2005 - Polymer Systems Technology Limited TM
Unit 2. Network 4. Cressex Business Park,
Lincoln Road, High Wycombe, Bucks. HP12 3RF
Phone +44 (0) 1494 446610
Fax: +44 (0) 1494 528611
Web: <http://www.siliconepolymers.co.uk>
Email: sales@silicone-polymers.co.uk



Product Profile

MED-4011 Silicone Elastomer

Description:

NuSil Technology MED-4011 Silicone Elastomer is a two-part, translucent, pourable silicone system which will cure at room temperature. Cure time can be reduced with elevated temperature. When properly cured MED-4011 offers high tear strength along with other excellent physical properties and an operating temperature range of -65°C to 250°C (-85°F to 484°F).

Applications:

NuSil Technology MED-4011 Silicone Elastomer is designed as an adhesive, encapsulating compound or mold-making material. The variable cure schedule allows flexibility for the user to cure from room temperature to 150°C to accelerate cure.

NuSil Technology's MED-4011 is a restricted product. It shall not be considered for use in human implantation for a period of greater than 29 days.

Mixing:

MED-4011 Part A and Part B are mixed in a 10:1 ratio by weight. Care should be taken to minimize air entrapment during mixing.

Vacuum Deaeration:

Air entrapped during mixing should be removed by common vacuum deaeration procedure, observing all

applicable safety precautions. Apply full vacuum slowly to a container rated for use and of volume at least four times the volume of material to be deaerated. Hold vacuum until bulk deaeration is complete.

NOTE: A PRIMER MAY BE REQUIRED IN SOME BONDING APPLICATIONS. NUSIL TECHNOLOGY CF1-135 SILICONE PRIMER IS RECOMMENDED.

Typical Properties as Supplied:

	<u>MED-4011</u>
Chemical Classification	VMQ
Color, Part A	Translucent
Color, part B	Clear
Consistency, @ 25°C (77°F)	
Flowable	
Viscosity, cP Part A	100,000
Viscosity, cP Part B	5,000
Mix Ratio (by weight)	10:1

Typical Properties:

Cured 3 min. @ 150°C (302°F)

Post cured 1 hour @ 150°C (302°F)

	<u>MED-4011</u>
Specific Gravity @ 25°C (77°F)	1.09
Durometer, Type A	29
Tensile Strength, psi / MPa	750 / 5.2
Elongation, %	500
Tear Strength, ppi / kN/m	45 / 7.9
Modulus, 200%, psi / MPa	110 / .8

Test Methods:

	<u>ASTM</u>	<u>NTM</u>
Specific Gravity	D792	003
Durometer Hardness	D2240	006
Tensile Strength, psi	D412	007
Elongation, percent	D412	
007		
Tear Strength	D624	009
Modulus, 100%, psi	D412	028

Packaging:

One Pint kit Five Gallon kit
 One Gallon kit

Typical Cure Schedule:

<u>Temperature °C (°F)</u>	<u>Cure Time</u>
25°C (77°F)	24 Hours
65°C (149°F)	4 Hours
100°C (212°F)	1 Hour
125°C (257°F)	45 Minutes
150°C(302°F)	15 Minutes

Substrate Considerations:

MED-4011 will cure in contact with most materials common to biomedical assemblies. Exceptions include sulfur cured organic rubbers, latex, chlorinated rubbers, some RTV silicones and unreacted residues of some curing agents. Units to be encapsulated or potted should be clean and free of surface contaminants. Containers and dispensers to be used with MED-4011 should also be clean and dry. Cure inhibition can usually be prevented by washing all containers with clean solvent or volatilizing the contaminants by heating.

FDA Master File:

A Master File for MED-4011 is in process with the U.S. Food and Drug Administration. This Master File will contain the results of applicable chemical and mechanical equivalency tested as well as confirmatory biological testing. Customers interested in authorization to reference these files must contact NuSil Technology.

Warnings About Product Safety:

NuSil Technology believes that the information and data contained herein is accurate and reliable; however, it is the user's responsibility to determine

suitability and safety of use for these materials. NuSil Technology can not know the specific requirements of each application and hereby makes the user aware that is has not tested or determined that these materials are suitable or safe for any application.

It is the user's responsibility 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. There has been no testing done by NuSil Technology 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, you should review the latest Material Safety Data Sheets and contact NuSil Technology for any questions about product safety information you may have.

No chemical should be used in a food, drug, cosmetic, or medical application or process until you have determined the safety and legality of the use. It is the responsibility of the user 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, you should obtain available product safety information and take the necessary steps to ensure safety of use.

Specifications:

The typical properties shown in this technical profile should not be used as a basis for preparing specifications. Please contact NuSil Technology for assistance and recommendations in establishing particular specifications.

Patent Warning:

NuSil Technology disclaims any expressed or implied warranty against the infringement of any patent. NuSil Technology does not warrant that the use or sale of the products described herein will not infringe the claims of any United States patents or other country's patents covering the product itself or the use in combination with other products or in the operation of any process.

Warranty Information:

NuSil Technology's warranty period is 6 months from date of shipment when stored below 40°C in original unopened containers. Unless NuSil Technology provides you with 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 any other express or implied warranty, including warranties of merchantability and of fitness for use. Your 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, and NuSil Technology expressly disclaims any liability for incidental or consequential damages.