

# Polymer Systems Technology Limited

UK & Ireland Distributor



© 2005 - Polymer Systems Technology Limited <sup>TM</sup>  
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](mailto:sales@silicone-polymers.co.uk)



**NuSil Technology**

1050 Cindy Lane • Carpinteria, CA 93013

805/684-8780 • 805/566-9905 Fax

www.nusil.com

An ISO 9001 Certified Company

# Product Profile

## MED-1000 and MED-1011 Silicone Adhesives

### Description:

NuSil Technology's MED-1000 and MED-1011 are one component, self leveling silicone materials for bonding silicone elastomers to each other and to some synthetics and metals.

MED-1000 and MED-1011 contain no solvents and cure at room temperature upon exposure to atmospheric moisture. During the curing process, the silicone adhesives release acetic acid vapor as a by-product. After final cure, the resulting silicone elastomers possess the appearance, texture and general composition of many conventional silicone elastomers.

Advantages of these products include:

- Cures at room temperature at moderate relative humidity
- Self-leveling flow
- Vulcanization rate can be increased at elevated temperatures
- Provided in ready-to-use tubes for easy application

### Applications:

NuSil Technology MED-1000 and MED-1011 are used for bonding silicone elastomers to each other and to some synthetics or metals. MED-1000 and MED-1011 are produced without any additives and do not contain solvents or plasticizers.

The purchaser should thoroughly test products made in part or otherwise incorporating NuSil Technology MED-1000 and MED-1011 to determine the acceptability of the products' performance in a specific application.

**NuSil Technology's MED-1000 & MED-1011 are restricted products. They shall not be considered for use in human implantation for a period of greater than 29 days.**

### Instructions For Use:

#### Surface Preparation

Surfaces to be bonded or built-up with silicone adhesive should be cleaned thoroughly to remove possible surface contaminants. Use a non-oily cleaner or mild soap. Do not use synthetic detergents or oil-based soaps, as these soaps may be absorbed and may subsequently leach out. Rinse copiously with hot water and follow by rinsing thoroughly with distilled water. Compatible degreasers, such as 1,1,1 trichloroethane, may be used to clean metal surfaces.

The catalytic system of the adhesive is inhibited by traces of alcohol. For this reason alcohols should not be stored near the work site.

#### Bonding Applications:

Spread a layer of silicone adhesive on one of the surfaces. Squeeze together both surfaces to be bonded. Apply sufficient pressure to ensure full

contact, without forcing the silicone adhesive out from between the pieces.

## Curing Time:

Curing or vulcanization time depends upon the thickness of the silicone adhesive layer, the relative humidity, and the accessibility of atmospheric moisture to the curing adhesive.

For sections of typical thickness, a relative humidity level between 20 to 60 percent is recommended to cure the adhesive at room temperature, since controlled atmospheric moisture is an important factor for vulcanization.

Usually the adhesive forms a thick, tack-free outer skin for thick section films within a few minutes after application. The vulcanization rate will be slowed where very thin films are exposed to excessive humidity ( $\geq 80\%$  relative air humidity). For films below 80 microns, the relative air humidity should be within 30% - 50%.

Because MED-1000 and MED-1011 cure upon exposure to moisture vapor, the tubes must be kept tightly closed when not in use. A plug of cured material may form in the tip of the tube. Remove or dispense the plug from the tube before using.

## Packaging:

The acidic nature of MED-1000 and MED-1011 provides a natural bactericidal effect. While MED-1000 and MED-1011 containers may be relatively free of microorganisms, it cannot be considered sterile unless subjected to a validated sterilization process. When the adhesive is fully cured it can withstand sterilization with ethylene oxide, dry heat, or steam autoclaving.

The size and shape of fabricated articles must be considered when establishing conditions of sterilization. Larger quantities and larger parts may require longer periods of heating and may retain ethylene oxide longer than small parts. It is the responsibility of the user to determine the outgassing time required for a particular application if ethylene oxide sterilization methods are used.

MED-1000 AND MED-1011 are available in:

Six Ounce Tube  
Twelve Ounce Tube

## Caution:

MED-1000 and MED-1011 should not be used in the uncured state to repair or encapsulate living tissue in the body since about 4.5 percent acetic acid is evolved in vapor form during the cure process. On contact, uncured adhesive irritates eyes. Avoid contact with eyes and skin. Contact lens wearers should take appropriate precautions. In case of contact, flush eyes with water. Call a physician. Remove from skin with dry cloth or paper towel.

## Shipping Limitations:

None.

## Typical Properties as Supplied:

	<u>MED-1000</u>	<u>MED-1011</u>
Tack Free (minutes)	14	20
Flow (in./1 min.)	3	1
Specific Gravity	1.08	1.10
Durometer, Shore A	30	25
Tensile Strength, psi / MPa	900 / 6.2	1100 / 7.6
Elongation, %	600	750
Tear Strength, ppi / kN/m	50 / 8.8	60 / 10.5

## Test Methods:

	<u>MED-1000</u>	<u>MED-1011</u>
Appearance	NTM - 002	NTM - 002
Specific Gravity	NTM - 003	NTM - 003
Tack Free Time	NTM - 005	NTM - 005
Durometer, Shore A	NTM - 006	NTM - 006
Tensile Strength	NTM - 007	NTM - 007
Elongation	NTM - 007	NTM - 007
Tear Strength	NTM - 009	NTM - 009

## FDA Master File:

Master Files for MED-1000 and MED-1011 are in process with the U.S. Food and Drug Administration. The 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 it 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.