

# Polymer Systems Technology Limited

UK & Ireland Distributor



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An ISO 9001 Certified Company

# Product Profile

## MED1-4213 & MED2-4213 Fast Cure Silicone Adhesives

### Description:

NuSil Technology MED1-4213 and MED2-4213 silicone adhesives are two-part, 1:1 mix, translucent, silicone systems for bonding silicone elastomers to each other and to some metals and plastics. MED1-4213 will cure at room temperature but cure time can be rapidly reduced at elevated temperatures. MED2-4213 will only partially cure at room temperature but can be rapidly cured at elevated temperatures; See the typical cure schedule section. Both adhesives are pourable, self-leveling, high tear strength silicone materials. In many cases the use of a silicone primer may not be needed to obtain suitable adhesion.

### Applications:

MED1-4213 and MED2-4213 are designed for applications requiring the use of silicone adhesives to bond silicones to each other and to other substrates such as metals and plastics. After mixing the A and B sides together, cure begins. Advantages of these products are:

- Unlike one-part RTV silicone adhesives, MED1-4213 and MED2-4213 do not require atmospheric moisture for curing.
- There is no curing byproduct such as acetic acid or methyl alcohol.

MED1-4213 cures at room temperature; MED2-4213 cures rapidly at elevated temperatures

- Unlike one-part RTV adhesives, cure rate of both products may be rapidly accelerated by

application of heat in an oven, or by heat gun or heat lamp.

- Good adhesion to silicones, and to many unprimed metal and plastic substrates can be obtained.
- Relatively low viscosity allows the packaging of the products into easy-to-use, airless, side-by-side kits that eliminate the difficulty of mixing and deairing.

### Mixing:

In side-by-side kits, MED1-4213 and MED2-4213 are mixed in a 1:1 ratio through the use of a static mix and dispense cartridge. A disposable static mix tip is attached to the cartridge and the Part A and Part B are extruded through the static mix tip, dispensing directly onto the substrate. Note: it is sometimes prudent to discard the first few grams of extruded material, as good static mixing often does not occur until after this point. MED1-4213 and MED2-4213 can also be purchased in standard two-part 2-pint, 2-gallon, 10-gallon, and 2-drum kits. When using these standard kits, care should be used to minimize air entrapment during mixing. The mixed product should be placed in a vacuum chamber to remove entrapped air, which reduces bubble formation during curing.

### Typical Properties as Supplied:

	<u>MED1-4213</u>
Chemical Classification	VMQ
Color	Translucent
Viscosity, cP Part A	80,000

Viscosity, cP Part B	Thixotropic
Mix Ratio	1:1
Work Time, Minutes	5

### Typical Properties as Supplied:

	<u>MED2-4213</u>
Chemical Classification	VMQ
Color	Translucent
Viscosity, cP Part A	80,000
Viscosity, cP Part B	Thixotropic
Mix Ratio	1:1
Work Time, Hours	2

### Test Properties:

Cured 24 hours @ 25°C (77°F)

	<u>MED1-4213</u>
Specific Gravity @ 25°C (77°F)	1.10
Durometer, Shore A	15
Tensile Strength, psi	600
Elongation, %	650
Tear Strength, ppi, Die B	75

	<u>MED2-4213</u>
Specific Gravity @ 25°C (77°F)	1.10
Durometer, Shore A	15
Tensile Strength, psi	600
Elongation, %	650
Tear Strength, ppi, Die B	75

### Typical Cure Schedule:

<u>Temperature</u>	<u>MED1-4213</u>	<u>MED2-4213</u>
25°C	4-6 Hours	N/A
70°C	10 Minutes	N/A
100°C	5 Minutes	30 Minutes
150°C	1 Minute	15 Minutes

### Substrate Consideration:

MED1-4213 & MED2-4213 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 MED1-4213 & MED2-4213 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.

### Packaging:

Fifty ML Side by Side Kit  
 Two Hundred ML Side by Side Kit  
 Four Hundred ML Side by Side Kit  
 Two Pint Kit  
 Two Gallon Kit  
 Ten Gallon Kit

### FDA Master File:

A Master File for MED1-4213 has been filed with the U.S. Food and Drug Administration. These Master Files contain the results of applicable chemical and mechanical equivalency tested as well as confirmatory biological testing. A Master File for MED2-4213 is in process with the U.S. Food and Drug Administration. These Master Files 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:**

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## **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.