



Hysol[®] US4028

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DESCRIPTION

Hysol[®] US4028 is an unfilled, flexible polyurethane elastomer formulated for general casting, potting and encapsulation. This system is ideal for both hand-mixing and meter/mix dispensers. Since this product is NON-TDI (Toluene Diisocyanate), NON-MOCA (4, 4' methylene (bis) 2-chloroaniline) there is minimal processing and handling hazards to production personnel. US4028 offers excellent handling properties at room temperature such as low viscosity, adequate pot life, low moisture insensitivity, and system components are non-crystallizing at sub-ambient temperatures. Cure can be obtained at ambient or elevated temperatures. In addition, this system has excellent low temperature flexibility properties, fast cure and high green strength, with excellent tear and abrasion resistance. Recommended applications are abrasion resistant parts, belts, gaskets, boots and cable connector potting. The excellent properties also suggest its use for electrical potting and encapsulation.

Hydrolytic Stability (7 days boiling water)	
Hardness Loss	4
Weight Loss, %	0.62
Dry Heat Aging (21 days @ 93°C)	
Hardness Gain, %	9
Weight Loss, %	4.4
Moisture Absorption, %	
24 hrs	1.55
7 days	1.16
Shrinkage, in/in	
Cured 16 hrs @ 160°F ± 3°F	0.0097
Cured 8 hrs @ 175°F ± 10°F	0.0111
Physical Properties after Thermal Aging (14 days @ 93°C ± 3°C)	
Hardness, Shore A	83
Tensile Strength, psi, minimum	1600
Elongation, %, minimum	180
Tear Strength, (DIEC), minimum	125
Young's Modulus, psi, maximum	1400

APPLICATION CHARACTERISTICS

Color	Part A	Lt. Amber
	Part B	Amber
Viscosity @ 25°C, Brookfield RVF		
Spindle 4, Speed 10 cps	Part A	1400-2000
Spindle 3, Speed 10 cps	Part B	55-60
Specific Gravity @ 25°C	Part A	1.03
	Part B	1.11
Isocyanate Content, %	Part A	6.2
	Part B	0
Shelf life, months, minimum from date of shipment		
	Part A	6
	Part B	6

TYPICAL CURED PROPERTIES

Color	Dk. Amber
Hardness, Shore A	75 ± 5
Hardness Loss @ 200°F	-2
Tensile Strength, psi, minimum	
@ 24°C	1700
@ 93°C	840
@ -54°C	4800
Elongation, %, minimum	
@ 24°C	395
@ 93°C	260
@ -54°C	140
Tear Strength, (DIEC), pli, minimum	
@ 24°C	220
@ 93°C	95
@ -54°C	700
Young's Modulus, psi, maximum	
@ 24°C	600
@ 93°C	700
@ -54°C, x 10 ⁴	2.5
Glass Transition Temperature, °C, maximum	-50

CURED ELECTRICAL PROPERTIES

Dielectric Strength @ .015" thickness, volts/mil	875
Dielectric Constant	
@25°C	
1 kHz	5.59
10 kHz	5.38
100 kHz	5.11
@100°C	
1kHz	4.73
10 kHz	4.59
100 kHz	4.47
@125°C	
1 kHz	4.69
10 kHz	4.53
100 kHz	4.39
Dissipation Factor	
@25°C	
1kHz	.0229
10 kHz	.0299
100 kHz	.0376
@100°C	
1kHz	0.0221
10 kHz	.0171
100 kHz	.0180
@125°C	
1kHz	.0274
10 kHz	.0190
100 kHz	.0179
Volume Resistivity, ohm-cm	
@ 25°C	5.29 x 10 ¹²
@ 100°C	1.54 x 10 ¹²
@ 125°C	1.32 x 10 ¹²
Surface Resistivity, ohm	
@ 25°C	3.56 x 10 ¹³
@ 100°C	1.28 x 10 ¹²
@ 125°C	8.14 x 10 ¹¹

NOT FOR PRODUCT SPECIFICATIONS
 THE TECHNICAL DATA CONTAINED HEREIN ARE INTENDED AS REFERENCE ONLY.
 PLEASE CONTACT LOCTITE CORPORATION QUALITY DEPARTMENT FOR ASSISTANCE AND RECOMMENDATIONS ON SPECIFICATIONS FOR THIS PRODUCT.

HANDLING

Mix ratio, parts by weight	Part A / Part B	100/20
Mix ratio, parts by volume	Part A / Part B	5.4/1.0
Pot life, 200 grams mass, min.		25 ± 5
Gel time, 200 gram mass, min.		35
Peak exotherm temperature, 200 gram mass, °F		132
Peak exotherm temperature, 454 gram mass, °F		148

CURE SCHEDULE

21 hrs @ 77°F / 2 ½ hrs @ 175°F ± 10°F or
 16 hrs @ 160°F ± 3°F or
 8 hrs @ 175°F ± 10°F or
 7 days @ 77°F (for full properties)

DIRECTIONS FOR USE

1. Pre-mix resin and pre-mix hardener separately.
2. Weigh the above ratio of resin and hardener into a clean container, and mix until a uniform color.
3. Pour mixture into another clean container, and mix for 30 seconds, than use.
4. Use low speed mixing to reduce air entrapment. If air bubbles persist, place under vacuum.
5. Cure mixture according to above cycle. Cure time is measured after the product reaches curing temperature.

GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

This product is not recommended for use in pure oxygen and/or oxygen rich systems and should not be selected as a sealant for chlorine or their strong oxidizing materials.

STORAGE

Liquid Storage – Liquids should be stored at 23°C or below, in closed containers. If stored below 23°C, the material MUST be allowed to come to room temperature, in the sealed container, to avoid moisture contamination.

DATA RANGES

The data contained herein may be reported as a typical value and/or range values based on actual test data and are verified on a periodic basis.

Note

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. It is the user's responsibility to determine suitability for the user's purpose of any production methods mentioned herein and to adopt such precautions as

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Loctite Electronics

Henkel Loctite Corporation, 211 Franklin Street, Olean, NY 14760, U.S.A.
 716.372.6300 www.loctite.com

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