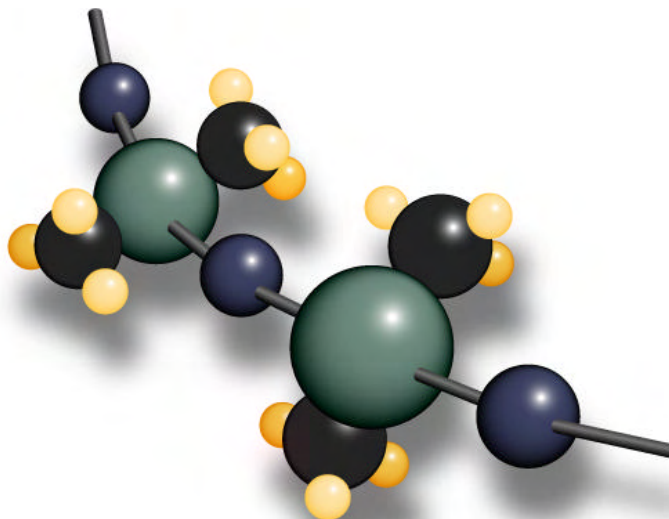


# Polymer Systems Technology Limited

UK & Ireland Distributor



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# VersaSil<sup>3</sup>

High Consistency Elastomer Series

## Product Profile



Creative Partners in a Material World

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An ISO 9001 Certified Company

### Description

- A series of versatile high consistency elastomers designed for optimal performance in a wide range of applications
- Produce tough, durable elastomers when cured
- Available in durometers of 30 through 80 (Type A)
- Developed to be compounded with the inhibitor CAT-40 and the platinum catalyst CAT-55
- Can also be processed/cured using 2,4 dichlorobenzoyl and other peroxide catalysts
- Advantages include: low cost, variable table life, high tear strength, wide processing parameters, translucent and non-tacky surface
- Master Files for the VersaSil<sup>3</sup> series have been filed with the U.S. Food and Drug Administration
- When cured using CAT-40 and CAT-55, advantages include: no volatile by-products, lower cure temperature, and optional post-cure

### Applications

- For mass production with maximum flexibility
- For transfer/compression molding, extrusion, and calendaring

**NuSil Technology LLC's VersaSil<sup>3</sup> series are restricted products. They shall not be considered for use in human implantation for a period of greater than 29 days.**

Typical Properties	VersaSil <sup>3</sup> 30 MED-4032	VersaSil <sup>3</sup> 40 MED-4042	VersaSil <sup>3</sup> 50 MED-4052	ASTM	NT-TM
<b>Cured: 10 min @ 116°C (241°F)*</b>					
Specific Gravity	1.10	1.11	1.16	D792	003
Durometer, Type A	30	40	50	D2240	006
Tensile Strength	1,200 psi (8.3 MPa)	1,475 psi (10.2 MPa)	1,325 psi (9.1 MPa)	D412	007
Elongation	1,100%	950%	1,100%	D412	007
Tear Strength	165 ppi (29.1 kN/m)	180 ppi (31.7 kN/m)	230 ppi (40.6 kN/m)	D624	009
	VersaSil <sup>3</sup> 60 MED-4062	VersaSil <sup>3</sup> 70 MED-4072	VersaSil <sup>3</sup> 80 MED-4082	ASTM	NT-TM
<b>Cured: 10 min @ 116°C (241°F)*</b>					
Specific Gravity	1.16	1.22	1.22	D792	003
Durometer, Type A	60	70	80	D2240	006
Tensile Strength	1,300 psi (9.0 MPa)	1,100 psi (7.6 MPa)	1,050 psi (7.2 MPa)	D412	007
Elongation	875%	875%	800%	D412	007
Tear Strength	250 ppi (44.1 kN/m)	240 ppi (42.3 kN/m)	240 ppi (42.3 kN/m)	D624	009

\*Mix Ratio 100:1:1 (Base:CAT-40:CAT-55)

### Instructions for Use

**Note:** CAT-40 and CAT-55 masterbatches are sold separately. Quantities desired should be specified when ordering.

### Calculations

While a long table life is desirable, slower cure rates associated with long table lives can contribute to porosity in extruded tubing and calendered sheeting. Adjust levels of CAT-40 for variable table life and cure rates. The following table summarizes suggested blended ratios for molding and calendaring.

### Packaging

25 Lb Box (11.4 kg)  
1000 Lb Gaylor (455 kg)

### Warranty

12 Months

	<b>Molding</b>	<b>Extrusion</b>
Base Stock	100 pph	100 pph
CAT-40	1-3 pph	0.3-1 pph
CAT-55	1.0 pph	1.0 pph

### **Milling**

Soften approximately 25% of the total calculated base stock on a cooled 2-roll mill. Add entire calculated quantity of CAT-40 and mill until homogenous. While the base/CAT-40 mixture is turning on the mill, add the CAT-55 in small increments until the entire calculated amount is added. Finally, mill in the remaining base stock. Take caution to avoid overmilling.

**Note:** CAT-40 and CAT-55 are supplied in highly concentrated masterbatches. These masterbatches are provided at a consistency that can be easily cut with a spatula or knife. Be certain that the instrument used is thoroughly cleaned between contact with CAT-40 and CAT-55.

### **Curing**

These elastomers will cure in a mold cross section up to 0.075" thick in less than 10 minutes @ 116°C (241°F). If desired, implement an optional post-cure, such as 4 hours @ 177°C (351°F). Cure rate may be accelerated by heat. These elastomers cure at a wide range of times and temperatures to accommodate different production needs. Contact NuSil Technology LLC for details. If using peroxide catalysts, reference manufacturer recommendation for establishing proper post cure parameters.

### **Cure Inhibition**

The cure may be inhibited by traces of amines, sulfur, nitrogen oxide, organo-tin compounds, and carbon monoxide. Examples of materials that should not come in contact with the uncured elastomer include: wooden spatulas, latex gloves, organic rubbers, and residues from RTV or peroxide-cured silicone elastomers.

### **Storage**

Reseal unused base materials in supplied packaging and keep at ambient room temperature (~25°C). CAT-40 and CAT-55 are supplied sealed in polypropylene bags and placed in HDPE containers. Store unused portions of CAT-40 and CAT-55 by first re-wrapping in the polypropylene bag and then sealing tightly in the HDPE container.

### **FDA Master Files**

Master Files for the VersaSil<sup>3</sup> series have been filed with the U.S. Food and Drug Administration. Customers interested in authorization to reference the Master Files must contact NuSil Technology LLC.

NuSil Technology LLC's Master Files contain both a manufacturing and compendium section. The compendia include testing of bulk material properties, mechanical/physical properties, chemical properties, and confirmatory biological testing. The tables below summarize the biological testing completed on the formulation components of these materials.

<b>Test</b>	<b>Result</b>
Cytotoxicity	Non-Cytotoxic
Hemolysis	Non-Hemolytic
Systemic Injection Test with Extracts	Non-Toxic
Intracutaneous Test with Extracts	Non-Irritant
Implantation Test (one week)	Non-Irritant
Genotoxicity	Non-Mutagenic
Pyrogenicity	Non-Pyrogenic
Sensitization	Non-Sensitizer

<b>Extracts</b>
Sodium Chloride Solution (Saline)
Alcohol in Saline Solution
Polyethylene Glycol 400 (PEG)
Vegetable Oil

### **USP Class VI / ISO 10993 Status**

After being cured with CAT-40 and CAT-55, these elastomers are compliant with USP Class VI requirements and applicable ISO 10993 requirements. Please contact NuSil Technology LLC for a complete list of tests performed.

## **Warnings About Product Safety**

NuSil Technology LLC believes that the information and the data contained herein are accurate and reliable. However, the user is responsible to determine the material's suitability and safety of use. NuSil Technology LLC 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 LLC makes no warranty concerning fitness for any use or purpose. NuSil Technology LLC has completed no testing to establish safety of use in any medical application.

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

## **Specifications**

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

## **Patent Warning**

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

## **Warranty Information**

NuSil Technology LLC's warranty period is 12 months from the date of shipment when stored below 40°C in original unopened containers. Unless NuSil Technology LLC provides a specific written warranty of fitness for a particular use, NuSil Technology LLC's sole warranty is that the product will meet NuSil Technology LLC's then current specification. NuSil Technology LLC specifically disclaims any other expressed or implied warranty, including warranties of merchantability and fitness for use. The exclusive remedy and NuSil Technology LLC'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 LLC expressly disclaims any liability for incidental or consequential damages.