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UK & Ireland Distributor



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Product Profile

Product Profile VersaSil³ Series

Product Description:

VersaSil³ 30, 50, and 70 are a family of versatile high consistency elastomers designed for optimal performance in a wide range of applications. This system includes 3 base stocks which when vulcanized produce tough, durable elastomers with nominal Shore A durometers of 30, 50, and 70. Additionally, the base stocks may be blended to produce elastomers of intermediate durometer.

The 3 base stocks were developed to be compounded with CAT-40 and CAT-55. CAT-40 is the inhibitor component. CAT-55 is the platinum catalyst component.

Applications and Advantages:

These materials were developed for volume-users who demand maximum flexibility. Applications include extrusion, transfer and compression molding, and calendaring. Advantages of the series include:

- Low cost
- Blendable to modify durometer and other physical properties
- Variable table life
- High tear strength
- Wide processing parameters
- Translucency
- Non-tacky surface
- No volatile by-products
- Lower cure temperature
- Optional post cure

Instructions for Use:

Each series is supplied as a three part system which must be compounded on a two roll mill prior to use. Choose the desired durometer base stock, VersaSil³ 30, 50, or 70. Note that a 40 durometer elastomer can be achieved by blending VersaSil³ 30 and VersaSil³ 50 in a 1:1 mix ratio. Similarly, a 1:1 blend of VersaSil³ 50 and VersaSil³ 70 will yield a 60 durometer elastomer.

Calculations:

It is widely known that long table life is desirable. However, the slower cure rate associated with a longer table life can contribute to porosity in extruded tubing and calendared sheeting. CAT-40 levels can be adjusted for variable table life and cure speeds. The following table summarizes suggested blended ratios for molding and extrusion.

	MOLDING	EXTRUSION
Base Stock	100pph	100pph
CAT-40	1.0-3.0pph	0.3-1.0pph
CAT-55	1.0pph	1.0pph

Milling:

Soften approximately 25% of the total calculated base stock on a cooled 2-roll mill. Add entire calculated quantity of CAT-40. Mill until homogeneous. 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 that had been previously set aside. Caution should be taken to avoid overmilling.

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

Vulcanization:

Cure of the catalyzed system is accelerated by heat. The elastomer will cure in a mold cross section up to 0.075-inch thick in less than ten minutes at 116°C (240°F). Vulcanization rate can be accelerated with increased temperatures. An optional post cure, such as 4 hours at 177° C(350°F) may be implemented if desired.

Typical Vulcanization Properties (10 minutes @ 116°C)

Property	VersaSil 30	VersaSil 50	VersaSil 70
Specific Gravity	1.11	1.16	1.20
Durometer (Shore A)	30	50	70
Tensile Strength (psi)	1190	1200	1000
Elongation (%)	1000	1000	875
Tear (ppi)	160	235	215

The information above represents a brief summary of properties tested. For a complete listing of all tests performed, please contact Nusil Technology.

FDA Masterfile Status:

Nusil Technology's Masterfiles are comprised of both a manufacturing and a compendium section. The compendia includes testing of bulk material properties, mechanical/physical properties, chemical properties, and confirmatory biological testing. The table below summarizes the biological testing completed on the formulation components of these materials. Please contact Nusil Technology about the VersaSil³ series masterfile status.

STANDARD FDA CLASS

TEST

CYTOTOXICITY	CYTOTOXICITY TEST USING THE ISO ELUTION METHOD IN THE L-929 MOUSE FIBROBLAST CELL LINE
HEMOLYSIS	IN VITRO HEMOLYSIS STUDY (EXTRACTION METHOD)
SYSTEMIC EXTRACTS	USP SYSTEMIC TOXICITY STUDY IN THE MOUSE (EXTRACTS)
INTRACUTANEOUS EXTRACTS	ACUTE INTRACUTANEOUS REACTIVITY STUDY IN THE RABBIT (EXTRACTS)
IMPLANTATION ONE WEEK	USP MUSCLE IMPLANTATION STUDY IN THE RABBIT WITH HISTOPATHOLOGY (ONE WEEK)
SALMONELLA MUTAGEN	AMES SALMONELLA/ MAMMALIAN MICROSOME MUTAGENICITY ASSAY
RABBIT PYROGEN	RABBIT PYROGEN STUDY- MATERIAL MEDIATED
SENSITIZATION	DELAYED CONTACT SENSITIZATION STUDY (A MAXIMIZATION METHOD) IN THE GUINEA PIG (SALINE)

Each lot of material is tested for cytotoxicity and emission spectroscopy as per NAMS procedure number M-GP23-100, and ASTM E-2 SM 11-22 respectively. For additional information regarding these tests performed, please contact a Technical Sales Representative at Nusil Technology.

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 into contact with the unvulcanized elastomer include wooden spatulas, latex gloves, organic rubbers, and residues from RTV or peroxide-cured silicone elastomers.

Storage:

Unused base materials should be resealed in supplied packaging and kept at ambient temperature (~25°C). CAT-40 and CAT-55 are both supplied sealed in polypropylene bags and placed in HDPE containers. Store unused portions of CAT-40 and CAT-55 first by re-wrapping the material in the polypropylene bags and then sealing tightly in the polyethylene container.

Kit Sizes/Ordering Information:

Base material is available in two kit sizes, 25lb boxes and 1000lb Gaylord containers. CAT-40 and CAT-55 masterbatches are available in 1lb and 10 lb containers.

Please note that the base material, the CAT-40, and CAT-55 masterbatches are sold separately. Quantities desired should be specified at the time of ordering.

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.

USP Class VI / ISO 10993 Status:

These elastomer systems have been tested per USP Class VI requirements and are compliant with most ISO 10993 requirements. Please contact Nusil Technology for a complete list of tests performed.

Warranty:

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.

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.