

## Product Information

### Introduction

Viton™ GBL-600S A fluoroelastomer is a 68% fluorine, peroxide-cured fluoroelastomer with a gum polymer viscosity of ~65 (ML at 121 °C (250 °F)). Viton™ GBL-600S A utilizes the latest Advanced Polymer Architecture (APA) and FWRD technologies from Chemours, enabling high performance in the most critical applications, without the use of a fluorinated surfactant during production.

### Features

- Excellent fluid resistance to oils, hot water and steam, as well as acids.
- Excellent physical properties with high elongation, both original and aged in standard compounds and in formulations with no or low filler, even after aging.
- Outstanding compression set resistance with either low or no post-cure.
- Ideal for blending with Viton™ GBL-200S A to reach intermediate viscosity ranges for injection molding as well as with other FWRD APA grades (e.g., GF-S A, GLT-S A, ...).
- Manufactured without fluorinated surfactant.

### Compounding and processing

- Viton™ Curative No. 7 (VC-7) is the suggested coagent for all Viton™ GBL-600S A compounds and is usually used at a 2.5 phr level or lower, unless high modulus is needed. High levels of VC-7 can bleed out and cause molding flaws.
- The use of TMAIC (trimethylalyl isocyanurate) is not suggested, as it causes poor mold release and high compression set.

- 2,5-Bis(*tert*-butylbutoxy)-2,5-dimethylhexane is used commonly as crosslinking peroxide, often as 45% active free flowing powder on a silica/calcium carbonate carrier. Typical levels are 1.5 phr or lower.
- The suggested process aids for Viton™ GBL-600S A are Struktol® HT-290, either alone or in combination with Struktol® WS-280 (recommended level 0.75 to 1.0phr). Armeen® 18D or PAT®-44/04 are also suitable for use with Viton™ GBL-600S A compounds.
- Viton™ GBL-600S A can be easily compounded on hot roll mills as well as in internal mixers (recommended >72% load factor for the latter)

### Safety and Handling

Before handling or processing Viton™ GBL-600S A, be sure to read and be guided by the suggestions in the Chemours technical bulletin, "Handling Precautions for Viton™ and Related Chemicals".

### Product Description

Viton™ GBL-600S A	
Chemical Composition	Terpolymer of hexafluoropropylene, vinylidene fluoride, tetrafluoroethylene, and a proprietary cure site monomer
Physical Form	Sheet
Appearance	Off-white to tan
Odor	None
Mooney Viscosity, ML 1 + 10 at 121 °C (250 °F)	65
Specific Gravity	1.85
Storage Stability	Excellent
Fluorine, %	~68

**Table 1. General properties of Viton™ GBL-600S A**

Compound	phr		
Viton™ GBL-600S A	100		
Thermax® Floform N990	30		
Zinc Oxide	3		
Viton™ Curative No. 7 (VC-7)	2.2		
Luperox® 101 XL 45	1.5		
Struktol® HT 290	1		
<b>Rheological Properties</b>			
<b>Mooney Viscosity, ML 1+10 at 121 °C (250 °F)</b>			
Final Mooney, MU	61		
<b>Mooney Viscosity, ML 1+4 at 100 °C (212 °F)</b>			
Final Mooney, MU	89		
<b>MDR Cure Rate - 180 °C (356 °F) / 6 min / arc 0.5°</b>			
ML, dNm	1.79		
MH, dNm	22.76		
Ts1, min	0.39		
Ts2, min	0.44		
T10, min	0.44		
T50, min	0.66		
T90, min	1.12		
<b>Mooney Scorch - 135 °C (275 °F) / 45 min</b>			
Initial Mooney, MU	49		
Minimum Mooney, MU	28		
Ts1, min	5.8		
Ts2, min	6.1		
T5, min	6.9		
T10, min	7.7		
T35, min	9.5		
<b>Low Temperature Properties</b>			
<b>Tg by DSC - Polymer</b>			
Tg, °C	-17		
<b>Temperature Retraction – Press Cure: 10 min / 180°C (356 °F), Post-Cured: 16 hr / 230 °C (446 °F)</b>			
TR10, °C	-17		
TR30, °C	-14		
<b>Vulcanizate Properties</b>			
<b>Press Cure: 10 min / 180 °C (356 °F)</b>	<b>Post-Cured:</b>	<b>Post-Cured:</b>	<b>Post-Cured:</b>
	<b>None</b>	<b>4 hr / 200 °C (392 °F)</b>	<b>16 hr / 230 °C (446 °F)</b>
<b>Hardness Shore A, 1 sec</b>			
Shore A, pts	69	71	75
<b>Tensile Properties, Type 2, at 23 °C (73 °F)</b>			
Tensile Strength, MPa	12.8	14.0	20.9
Elongation at Break, %	440	420	380
Modulus at 100%, MPa	2.3	2.8	3.7
<b>Tear Strength</b>			
<b>Tear Strength Type B – Angle without nick Test Pieces</b>			
Tear Strength, kN/m at 23 °C (73 °F)	19	23	26
Tear Strength, kN/m at 150 °C (302 °F)	4	4	6
<b>Compression Set Properties:</b>			
<b>Curing conditions: 10 min / 180 °C (356 °F)</b>	<b>Post-Cured:</b>	<b>Post-Cured:</b>	<b>Post-Cured:</b>
	<b>None</b>	<b>4 hr / 200 °C (392 °F)</b>	<b>16 hr / 230 °C (446 °F)</b>
<b>Compression Set, 70 hr at 200 °C (392 °F), Type B</b>			
Compression Set, %	33	28	25
<b>Compression Set, 168 hr at 200 °C (392 °F), Type B</b>			
Compression Set, %	45	40	33
<b>Compression Set, VW, 94 hr at 180 °C (356 °F)</b>			
Compression Set at 5 sec, %	-	-	53
Compression Set at 30 min, %	-	-	41

**Table 2. Aging Properties of Viton™ GBL-600S A**

<b>Aging Properties</b>	
Post-Cured: 16 hr / 230 °C (446 °F)	
<b>Heat Aging, 168 hr at 250 °C (482 °F)</b>	
<b>Hardness Shore A, 1 sec</b>	
Shore A, pts	74
Delta Hardness, pts	0
<b>Tensile Properties, Type 2, at 23 °C (73 °F)</b>	
Tensile Strength, MPa	16.0
Delta TS, %	-23
Elongation at Break, %	410
Delta Elongation, %	+8
Modulus at 100%, MPa	3.5
Delta 100%, %	-6
<b>Fluid Aging, 168 hr at 150 °C (302 °F) in Motul® ATF VI (Dexron® VI)</b>	
<b>Hardness Shore A, 1 sec</b>	
Shore A, pts	73
Delta Hardness, pts	-1
<b>Tensile Properties, Type 2, at 23 °C (73 °F)</b>	
Tensile Strength, MPa	16.2
Delta TS, %	-22
Elongation at Break, %	280
Delta Elongation, %	-27
Modulus at 100%, MPa	3.7
Delta 100%, %	+1
<b>Weight &amp; Volume Change</b>	
Weight Change, %	+0.7
Volume Change, %	+0.9

**Table 3. Compound Ingredients**

<b>Compound Ingredients</b>	<b>Supplier</b>
Thermax® Floform N990	Cancarb Limited
Zinc Oxide (99% pure, 5 microns)	Sigma-Aldrich
Viton™ Curative No. 7 (VC-7)	The Chemours Company
Luperox® 101 XL 45	Arkema
Struktol® HT 290	Schill+Seilacher

**Table 4. Test Procedures**

<b>Property Measured</b>	<b>Test Procedure</b>
Compression Set	ISO 815-1:2019
Compression Set VW	VW PV 3307:2004-08
Hardness	ISO 48-4:2018
MDR (moving die rheometer)	ISO 6502-3:2023
Mooney Viscosity	ISO 289-1:2015
Mooney Scorch	ISO 289-2:2020
DSC (differential scanning calorimetry)	ISO 22768:2020
Temperature Retraction	ISO 2921:2019
Fluid Aging	ISO 1817:2022
Heat Aging	ISO 188:2023
Stress/Strain Properties	ISO 37:2024
Tear Strength	ISO 34-1:2022

Test temperature is 23 °C (73 °F), except where specified otherwise.

---

**For more information, visit [viton.com](http://viton.com)**

The information set forth herein is furnished free of charge and based on technical data that Chemours believes to be reliable. It is intended for use by persons having technical skill, at their own discretion and risk. The handling precaution information contained herein is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Because conditions of product use are outside our control, Chemours makes no warranties, express or implied, and assumes no liability in connection with any use of this information. As with any material, evaluation of any compound under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate under or a recommendation to infringe any patents.

NO PART OF THIS MATERIAL MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING OR OTHERWISE WITHOUT THE PRIOR WRITTEN PERMISSION OF CHEMOURS.

© 2023 The Chemours Company FC, LLC. Viton™ and any associated logos are trademarks or copyrights of The Chemours Company FC, LLC. Chemours™ and the Chemours Logo are trademarks of The Chemours Company.