

# **Technical Information**

### Introduction

Viton" GLT-200S\* fluoroelastomer is a 64% fluorine, peroxide-cured, low temperature fluoroelastomer similar to Viton" GLT-600S, but with a significantly lower gum polymer viscosity of -25 (ML at 121 °C [250 °F]). GLT-200S utilizes the latest technology from Chemours, Advanced Polymer Architecture (APA), which includes a novel peroxide cure site along with an optimized molecular weight distribution.

# Features

- Cures exceptionally fast to a high state of cure
- Is ideal for blending with Viton<sup>™</sup> GLT-600S to reach intermediate viscosity ranges for injection molding
- Improved mold release/mold fouling properties
- Improved mold flow and less shear sensitivity than 65 Mooney Viton<sup>™</sup> GLT-600S
- Excellent physical properties with high elongation, both original and aged
- Heat, fluids, and low temperature resistance comparable to Viton<sup>®</sup> GLT-600S
- Improved water resistance/lower volume swell in water
- Excellent compression set resistance with either low or no post-cure

### Processing

A load factor of 72%+ for internal mixing of GLT-200S is recommended. The suggested process aids for GLT-200S are 0.75 phr of Struktol® HT290, either alone or in combination with 0.5 phr of PAT-777, or combinations of 0.5 phr Armeen® 18D with carnauba wax or Struktol® WS280. The use of DIAK<sup>™</sup> 8 is NOT suggested, as it

\*Viton" GLT-200S was formerly named VTR-8505.



causes poor mold release and high compression set. DIAK<sup>®</sup> 7 (TAIC) is the suggested coagent for all GLT-200S compounds and usually used at a 2.5 phr level or lower, unless high modulus is needed. High levels of TAIC can bleed out and cause molding flaws.

# **Safety and Handling**

Before handling or processing Viton" GLT-200S, be sure to read and be guided by the suggestions in the Chemours technical bulletin, "Handling Precautions for Viton" and Related Chemicals."

# **Product Description**

Chemical Composition	Copolymer of perfluoromethylvinyl ether, vinylidene fluoride, and tetrafluoroethylene with a cure site monomer
Physical Form	Sheet
Appearance	White to tan
Odor	None
Mooney Viscosity, ML 1 + 10 at 121 °C (250 °F)	25
Specific Gravity	1.80
Storage Stability	Excellent
Fluorine, %	~64

# Table 1. General Properties of Viton" GLT-200S Compared with Viton" GLT-600S

N1-10 at 121°C (250 °F) (gun polyme)205166Viton 'GL'-200550Viton 'GL'-200550100Viton 'GL'-600533030Nebolo30303030Nebolo3333Nebolo33333Nebolo33333Nebolo33333Nebolo33333Nebolo33333Nebolo33333Nebolo33333Nebolo33333Nebolo33333Nebolo32533Stellar, Minum51325Nebolo141312Nebolo161325Stellar, Minu161312Stellar, Minu161312Stellar, Minu161312Stellar, Minu161312Stellar, Minu161312Stellar, Minu161313Stellar, Minu161413Stellar, Minu161413Stellar, Minu161414Stellar, Minu161414Stellar, Minu161414Stellar, Minu161414Stellar, Minu <th></th> <th>Viton<sup>™</sup> GLT-200S</th> <th>50/50 Blend</th> <th>Viton<sup>™</sup> GLT-600S</th>		Viton <sup>™</sup> GLT-200S	50/50 Blend	Viton <sup>™</sup> GLT-600S
Vitan' G11-600S     50    100      Znc Oxde    3    3    3      N890    30    30    30      Diak' 7    3    3    3      Yaran's D18H-50    3    3    3      Total    139    139    139      Moreney Scorch at 121 °C (250 °F)    -    -    30    28.8    23.8      10PL Reagmin    28.9    26.3    21.7    59.7    59.7    25.8    23.8    23.8      10PL Reagmin     >30    25.8    23.8	ML-10 at 121 °C (250 °F) (gum polymer)	20	51	66
2he Oxide  3  3  3    N990  30  30  30    Diak' 7  3  3  3    Varox' 00PH-50  3  3  3    Total  139  139  139    Moroxy Sorch at 121 °C (250 °F)  21.9  26.3  21.7    Minimum  13  27  45    2 PL Rise, min  28.9  26.3  21.7    5 Pt Rise, min  30  28.8  23.8    10 PL Rise, min  >30  28.8  23.8    0 Pt Rise, min  >30  28.8  23.8    10 PL Rise, min  >30  28.8  23.8    0 Pt Rise, min  28  2.7  25.8    0 Pt Rise, min  13  13  12    15 - 2 min  14  13  12    15 - 2 min  14  13  12    M-L dWn  0.5  1.4  2.6    15 - 2 min  0.4  0.4  0.4    16 - 2 min  0.6  0.6  0.7    150, min  0.1  1.1  1	Viton <sup>™</sup> GLT-200S	100	50	—
NB90    30    30    30      Dak 7    3    3    3      Varox® DBPH-50    3    3    3      Total    130    33    3      Total    130    33    3      Money Scorch at 21°C (250 °F)     45      Minnum    13    27    45      2 Pt Rise, min    28.9    26.3    21.7      5 Pt Rise, min    >30    28.8    23.8      10 Pt. Rise, min    -    >30    28.8    23.8      01 At 162 °C (24 °F), S ^Ar, 100 Range, 30 Mt Clock    12    27    27    27      10 Mt. dNm    136    13.8    127    27    27    27    27    20    21    21 <td>Viton<sup>™</sup> GLT-600S</td> <td>—</td> <td>50</td> <td>100</td>	Viton <sup>™</sup> GLT-600S	—	50	100
Dik'7    3    3    3      Varox® DBPH-50    3    3    3      Total    139    139    139      Money Socrch at 12 °C (250 °F)     45      Minimum    13    27    45      2 PL Ras, min    28.9    28.3    21.7      5 PL Ras, min    >30    28.8    23.8      10 PL Risq, min    -    >30    28.8      0 Ras, min    -    >30    28.8      10 PL Risq, min    -    >30    28.8      0 Ras, min    -    >30    28.8      0 Ras Ci (22.4° F), 3° Arc, 100 Range, 30 Min Clock     12      W-L, dNm    5    1.3    12      150, min    2.8    127    13      MH, dNm    136    138    127      MI, dNm    136    138    127      ML dNm    136    138    127      ML dNm    136    138    127      ML dNm    136    138	Zinc Oxide	3	3	3
Varxet* DBPH-50    3    3    3      Total    139    139    139      Monery Scorch at 121 °C (250 °F)      45      Minimum    13    27    45      2 PL Rise, min    28.9    26.3    21.7      5 PL Rise, min    28.9    26.3    21.7      5 PL Rise, min    -30    28.8    23.8      0 DPL Rec, min    -0    >30    28.8    23.8      0 DPL Rec, min    5    13    25    25.8      0 DPL Rec, min    5    13    25    25.8      0 DPL Rec, min    28    2.7    2.7    12.7      139, min    44    1.3    12    12.7      190, min    44    4.3    12.7    12.7      ML dNm    0.5    1.4    2.6    12.7      190, min    0.4    0.4    0.4    0.4      190, min    13    1.4    2.6    1.1      195, min    1.3    1.4 </td <td>N990</td> <td>30</td> <td>30</td> <td>30</td>	N990	30	30	30
Total  139  199  199    Mononey Scorch at 121°C (250 °F)  2  45    Minnum  13  27  45    2 Pt. Rse, min  289  26.3  21.7    5 Pt. Rse, min  >30  28.8  23.8    10 Pt. Rse, min  >30  28.8  23.8    0 Pt. Rse, min  >30  25.8  25.8    D Rt 162°C (324 °F), 3° Arc, 100 Range, 30 Min Clock  13  25    Kt-2, min  14  13  12    150, min  28  2.7  2.7    160, min  136  13.8  12    MH, dNm  136  13.8  12    MH, dNm  136  13.8  12    ML, dNm  136  13.8  12    150, min  0.6  0.6  0.6    150, min  10  10  11    150, min  13  13  12    160, min  13  13  14  12    160, min  13  13  14  13    170, min  13  13 <td>Diak™ 7</td> <td>3</td> <td>3</td> <td>3</td>	Diak™ 7	3	3	3
Money Scorch at 121 °C (250 °F).  13  27  45    PL Rise, min  28.9  26.3  21.7    5 PL Rise, min  >30  28.8  23.8    10 PL Rise, min  -  >30  28.8  23.8    10 PL Rise, min  -  >30  28.8  23.8    0 DR Lise, min  -  >30  28.8  23.8    0 DR Lise, min  -  >30  28.8  23.8    0 DR Lise, or (100 Range, 30 Min Clock  -  -  30.8  25.1    14, d Nin  13.6  13.8  12.0  -    150, min  2.8  2.7  2.7  2.7    160, min  2.8  2.7  2.7  -    ML, dNin  13.6  13.8  12.0  -    MP2 COD at 177 °C (350 °F), 0.5° Arc, 100 Range, 6 Min Clock  -  -  -  -    ML, dNin  0.5  1.4  2.6  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  -  - </td <td>Varox® DBPH-50</td> <td>3</td> <td>3</td> <td>3</td>	Varox® DBPH-50	3	3	3
Minimum    13    27    45      2 Pt Rise, min    28.9    26.3    21.7      5 Pt Rise, min    >30    28.8    23.8      10 Pt Rise, min    -    >30    28.8    23.8      0 Dt At IS2 °C (324 °F), 3° Arc, 100 Range, 30 Min Clock    -    >30    25.8      0 Ret IS2 °C (324 °F), 3° Arc, 100 Range, 30 Min Clock    14    13    12      150, min    2.8    2.7    2.7      190, min    4.4    4.3    12      Mt-4, dNm    13.6    13.8    127      08D 2000 at 177 °C (350 °F), 0.5° Arc, 100 Range, 6 Min Clock    127    127      Mt-4, dNm    0.5    1.4    2.6      150, min    0.6    0.6    0.7      150, min    1.0    1.0    1.1      150, min    1.3    1.3    1.5      Mt-4, dNm    2.91    2.80    2.84      Rosend Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—U/D = 0.1 mut 27 °C (350 °F)    5.3    3.1      Mt-4, dNm    2.1    3.1 <td< td=""><td>Total</td><td>139</td><td>139</td><td>139</td></td<>	Total	139	139	139
2P. Rise, min  28.9  26.3  21.7    5P. Rise, min  >30  28.8  23.8    10Pt. Rise, min  -  >30  25.8    ODRat IS2 °C (324 °F), 3° Arc, 100 Range, 30 Min Clock    W-L, d\m  5  1.3  25.    ts-2, min  1.4  1.3  1.2    t50, min  2.8  2.7  2.7    190, min  4.4  4.3  5.1    M-H, d\m  1.3  1.2  1.4    MH, d\m  1.3  1.2  1.4    MH, d\m  1.3  1.2  1.4    MH, d\m  1.3  1.3  1.2    MH, d\m  0.4  0.4  0.4    V50, min  0.6  0.6  0.7    V50, min  1.0  1.0  1.1    V50, min  1.3  1.3  1.5    M-L, d\m  2.9  2.80  2.64    Sp.min  1.3  1.3  1.5    M-L, d\m  2.81  3.1  4.7    Sp.min  1.13  1.3  1.5 <t< td=""><td>Mooney Scorch at 121 °C (250 °F)</td><td></td><td></td><td></td></t<>	Mooney Scorch at 121 °C (250 °F)			
>30    288    238      10Pt. Rise, min    –    >30    258      00R at 162 °C (324 °F), 3° Arc, 100 Range, 30 Min Clock    13    25      M-L, dNm    5    13    25      ts-2, min    1.4    1.3    12      t50, min    2.8    2.7    2.7      t90, min    4.4    4.3    5.1      M-H, dNm    136    138    127      MDR 2000 at 177 °C (350 °F), 0.5° Arc, 100 Range, 6 Min Clock    W    M      M-L, dNm    0.5    1.4    2.6      ts-2, min    0.4    0.4    0.4      v50, min    0.6    0.6    0.7      t90, min    1.0    1.0    1.1      t95, min    1.3    1.3    1.5      M-H, dNm    29.1    28.0    26.4      Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—U/D = O/1 and 1.0    1.1    1.5      H-H, dNm    29.1    28.0    26.4    26.4      Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—U/D = O/1 and 1.0	Minimum	13	27	45
10 Pt. Rise, min  –  >30  25.8    ODR at 162 °C (324 °F), 3° Arc, 100 Range, 30 Min Clock    M-L, dNm  5  1.3  25    ts-2, min  1.4  1.3  1.2    t50, min  2.8  2.7  2.7    t90, min  4.4  4.3  5.1    M-L, dNm  1.36  1.38  1.27    MUL, dNm  0.5  1.4  2.6    ML-L, dNm  0.5  1.4  2.6    total colspan="4">total colspan="4" total colspan="4">total colspan="4" total colspan="4">total colspan="4" total colspan="4">total colspan="4" total colspan="4">total colspan="4" total	2 Pt. Rise, min	28.9	26.3	21.7
DRat 162 °C (324 °F), 3° Arc, 100 Range, 30 Min Clock  13  25    M-L, d\m  13  12    ts-2, min  14  13  12    t'50, min  28  2.7  2.7    t'90, min  44  4.3  5.1    M-H, d\m  136  138  127    MD2000 t177 °C (350 °F), 0.5° Arc, 100 Range, 6 Min Clock  13  14  26    M-L, d\m  0.5  1.4  26  0.4  0.4  0.4    ts-2, min  0.4<	5 Pt. Rise, min	>30	28.8	23.8
M-LoNm    5    13    25      ts-2,min    14    13    12      t'50,min    28    2.7    2.7      t'90,min    44    4.3    51      M-H,dNm    136    138    127      DD2000 at 177 °C (350 °F), 0.5° Arc, 100 Range, 6 Min Clock    138    127      M-L,dNm    0.5    1.4    2.6      ts-2, min    0.4    0.4    0.4      t'50, min    0.6    0.6    0.7      t'50, min    1.0    1.0    1.1      t'55, min    1.3    1.3    1.5      M-H, dNm    29.1    28.0    26.4      Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—U/D = 0/1 and 10/1    1.1    1.5      M-H, dNm    29.1    28.0    26.4      Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—U/D = 0/1 and 10/2    26.4    26.4      113    3.1    4.7    5.3    2.6      124    5.0    6.1    6.9    2.6      1,129    6.5	10 Pt. Rise, min	—	>30	25.8
14  1.3  12    t50,min  28  2.7  2.7    t90,min  4.4  4.3  5.1    M-H,dNm  136  138  127    MDR 2000 at 177 °C (350 °F), 0.5° Arc, 100 Range, 6 Min Clock	ODR at 162 °C (324 °F), 3° Arc, 100 Range, 30 Min Clock			
150, min  28  27  27    190, min  44  43  51    M-H, dNm  136  138  127    MDR 2000 at 177 °C (350 °F), 0.5° Arc, 100 Range, 6 Min Clock   4  26    M-L, dNm  0.5  1.4  2.6    ts-2, min  0.4  0.4  0.4    t50, min  0.6  0.6  0.7    t90, min  1.0  1.0  1.1    t95, min  1.3  1.3  1.5    M-H, dNm  29.1  28.0  26.4    Rosand Capillary Rheometer at 100° (212 °F), 1.5 mm die—L/D = 0/1 aut 21.0°  28.0  26.4    Stear Acte (sec.*)	M-L, dNm	5	13	25
190  44  4.3  5.1    M-H, dNm  136  138  127    MDR 2000 at 177 °C (350 °F), 0.5° Arc, 100 Range, 6 Min Clock       M-L, dNm  0.5  1.4  2.6    ts-2, min  0.4  0.4  0.4    t'50, min  0.6  0.6  0.7    t'90, min  1.0  1.0  1.1    t95, min  1.3  1.3  1.5    M-H, dNm  29.1  28.0  26.4    Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 10/2  28.0  26.4    Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 10/2  28.0  26.4    Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 10/2  28.0  26.4    Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 10/2  28.0  6.5  7.7  8.3    1.13  3.1  4.7  5.3  6.5  7.7  8.3    1.29  6.5  7.7  8.3  10.0  10.1    2.221  7.9  9.3  10.0  10.1    Spider Mold Flow Test—S	ts-2, min	1.4	1.3	1.2
M-H, d\m  136  138  127    MDR 2000 at 177 °C (350 °F), 0.5° Arc, 100 Range, 6 Min Clock  0.5  1.4  2.6    M-L, d\m  0.5  1.4  0.6    ts-2, min  0.4  0.4  0.4    t'50, min  0.6  0.6  0.7    t'90, min  1.0  1.1  1.1    t95, min  2.9.1  2.8.0  2.64    M-H, d\m  29.1  2.8.0  2.64    Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 1.3  1.3  1.5    M-H, d\m  29.1  2.8.0  2.64    Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 1.5  2.64  2.64    Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 1.5  2.64  3.6    Shear Rate (sec1)  2.1  3.1  4.7  5.3    I_129  5.0  6.1  6.9  3.1    1_129  6.5  7.7  8.3  3.0    I_221  7.9  9.3  10.0  3.1    Specter Mold Flow Test—Sum (0.031 in)—Transfer Pressure 1.03 Imunet Imuter 1.07 Imuter 1.07 Imuter 1.07 Imuter 1.07 Imut	t'50, min	2.8	2.7	2.7
MDR 2000 at 177 °C (350 °F), 0.5° Arc, 100 Range, 6 Min Clock  1.4  2.6    M-L, dNm  0.5  1.4  2.6    ts-2, min  0.4  0.4  0.4    t'50, min  0.6  0.6  0.7    t'90, min  1.0  1.0  1.1    t'95, min  1.3  1.3  1.5    M-H, dNm  29.1  28.0  26.4    Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 at 1.7    Shear Rate (sec-1)    I 113  3.1  4.7  5.3    A 452  5.0  6.1  6.9    1,12.9  6.5  7.7  8.3  3.1    2,21  7.9  9.3  10.0  10.0    Stipter Mold Flow Test—Sprue 0.8 mm (0.031 in)—Transfer Pressure 10.3 bar—(Cured 7 min at 177 °C (350 °F))    Total Shot Weight, g  31.7  32.0  31.8    Weight of Spider, g  24.8  14.5  9.8	t'90, min	4.4	4.3	5.1
M-L, dNm  0.5  1.4  2.6    ts-2, min  0.4  0.4  0.4    t'50, min  0.6  0.6  0.7    t'90, min  1.0  1.0  1.1    t'95, min  1.0  1.0  1.1    t'95, min  1.3  1.3  1.5    M-H, dNm  29.1  28.0  26.4    Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 10/1  20.1  28.0  26.4    Rosand Capillary Rheometer (sec <sup>-1</sup> )  3.1  4.7  5.3    1.13  3.1  4.7  5.3    1.14  5.0  6.1  6.9    1.12  5.0  6.1  6.9    1.12.0  6.5  7.7  8.3    2.21  7.9  9.3  10.0    Spider Mole Mous1 in)—Transfer Pressure 10.3 bar—(Cured 7 min at 177 °C I350 °F)    Total Shot Weight, g  31.7  32.0  31.8    Weight of Spider, g  24.8  14.5  9.8	M-H, dNm	136	138	127
ts-2, min    0.4    0.4    0.4      t'50, min    0.6    0.6    0.7      t'90, min    1.0    1.0    1.1      t'95, min    1.3    1.3    1.5      M-H, dNm    29.1    28.0    26.4      Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 10/1    2    2    2      Shear Rate (sec-4)    5.3    6.1    6.9      1,129    6.5    7.7    8.3      2,221    7.9    9.3    100      Spider Mold Flow Test—Sprue 0.8 mm (0.031 in)—Transfer Pressure 103 bar —(Cured 7 min at 177 °C (350 °F))      Total Shot Weight, g    31.7    32.0    31.8      Weight of Spider, g    24.8    14.5    9.8	MDR 2000 at 177 °C (350 °F), 0.5° Arc, 100 Range, 6 Min	Clock		
150, min  0.6  0.6  0.7    1'90, min  1.0  1.0  1.1    t'95, min  1.3  1.3  1.5    M-H, dNm  29.1  28.0  26.4    Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 10/1    Shear Rate (sec <sup>-1</sup> )    Shear Rate (sec <sup>-1</sup> )    113  3.1  4.7  5.3    1.12  3.1  4.7  5.3    1.13  3.1  4.7  5.3    1.12  5.0  6.1  6.9    1.12.9  6.5  7.7  8.3    2.221  7.9  9.3  10.0    Spider Mold Flow Test—Sprue 0.8 mm (0.031 in)—Transfer Pressure 103 bar—(Cured 7 min at 177 °C [350 °F])    Total Shot Weight, g  31.7  32.0  31.8    Weight of Spider, g  24.8  14.5  9.8	M-L, dNm	0.5	1.4	2.6
10  10  11    19, min  13  13  15    19, min  29.1  28.0  26.4    Memore at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 at U/1    Shear Rate (sec <sup>-1</sup> )    Shear Rate (sec <sup>-1</sup> )    Shear Rate (sec <sup>-1</sup> )    113  3.1  4.7  5.3    452  5.0  6.1  6.9    1,129  6.5  7.7  8.3    2,221  7.9  9.3  10.0    Spider Mold Flow Test—Sprue 0.8 mm (0.031 in)—Transfer Pressure 103 bar—(Cured 7 min at 177 °C (350 °F))    Total Shot Weight, g  31.7  32.0  31.8    Weight of Spider, g  24.8  14.5  9.8	ts-2, min	0.4	0.4	0.4
13  1.3  1.5    M-H, dNm  29.1  28.0  26.4    Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 10/1    Shear Rate (sec <sup>-1</sup> )    Shear Rate (sec <sup>-1</sup> )    113  3.1  4.7  5.3    452  5.0  6.1  6.9    1,129  6.5  7.7  8.3    2,221  7.9  9.3  10.0    Spider Mold Flow Test—Sprue 0.8 mm (0.031 in)—Transfer Pressure 103 bar—(Cured 7 min at 177 °C (350 °F))    Total Shot Weight, g  31.7  32.0  31.8    Weight of Spider, g  24.8  14.5  9.8	t'50, min	0.6	0.6	0.7
M-H, dNm    29.1    28.0    26.4      Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 10/1    3.0	t'90, min	1.0	1.0	1.1
Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die—L/D = 0/1 and 10/1    Shear Rate (sec <sup>-1</sup> )    113  3.1  4.7  5.3    452  5.0  6.1  6.9    1,129  6.5  7.7  8.3    2,221  7.9  9.3  10.0    Spider Mold Flow Test—Sprue 0.031 in)—Transfer Pressure 103 bar—(Cured 7 min at 177 °C [350 °F])    Total Shot Weight, g  31.7  32.0  31.8    Weight of Spider, g  24.8  14.5  9.8	ť95, min	1.3	1.3	1.5
Shear Rate (sec <sup>-1</sup> )  3.1  4.7  5.3    113  5.0  6.1  6.9    1,129  6.5  7.7  8.3    2,221  7.9  9.3  10.0    Spider Mold Flow Test—Sprue 0.8 mm (0.031 in)—Transfer Pressure 103 bar—(Cured 7 min at 177 °C [350 °F])    Total Shot Weight, g  31.7  32.0  31.8    Weight of Spider, g  24.8  14.5  9.8	M-H, dNm	29.1	28.0	26.4
113  3.1  4.7  5.3    452  5.0  6.1  6.9    1,129  6.5  7.7  8.3    2,221  7.9  9.3  10.0    Spider Mold Flow Test—Osmm (0.031 in)—Transfer Pressure 103 bar—(Cured 7 min at 177 °C [350 °F])    Total Shot Weight, g  31.7  32.0  31.8    Weight of Spider, g  24.8  14.5  9.8	Rosand Capillary Rheometer at 100 °C (212 °F), 1.5 mm die	e—L/D = 0/1 and 10/1		
452  5.0  6.1  6.9    1,129  6.5  7.7  8.3    2,221  7.9  9.3  10.0    Spider Mold Flow Test — Sprue 0.8 mm (0.031 in) — Transfer Pressure 103 bar — (Cured 7 min at 177 °C [350 °F])  Stat    Total Shot Weight, g  31.7  32.0  31.8    Weight of Spider, g  24.8  14.5  9.8	Shear Rate (sec <sup>-1</sup> )			
1,129  6.5  7.7  8.3    2,221  7.9  9.3  10.0    Spider Mold Flow Test—Sprue 0.8 mm (0.031 in)—Transfer Pressure 103 bar—(Cured 7 min at 17° C [350 °F])    Total Shot Weight, g  31.7  32.0  31.8    Weight of Spider, g  24.8  14.5  9.8	113	3.1	4.7	5.3
2,221    7.9    9.3    10.0      Spider Mold Flow Test—Sprue 0.8 mm (0.031 in)—Transfer Pressure 103 bar—(Cured 7 min at 177 °C [350 °F])    Total Shot Weight, g    31.7    32.0    31.8      Weight of Spider, g    24.8    14.5    9.8	452	5.0	6.1	6.9
Spider Mold Flow Test—Sprue 0.8 mm (0.031 in)—Transfer Pressure 103 bar—(Cured 7 min at 177 °C [350 °F])      Total Shot Weight, g    31.7    32.0    31.8      Weight of Spider, g    24.8    14.5    9.8	1,129	6.5	7.7	8.3
Total Shot Weight, g    31.7    32.0    31.8      Weight of Spider, g    24.8    14.5    9.8	2,221	7.9	9.3	10.0
Weight of Spider, g    24.8    14.5    9.8	Spider Mold Flow Test—Sprue 0.8 mm (0.031 in)—Transfer	Pressure 103 bar—(Cured 7 min at 1	L77 °C [350 °F])	
	Total Shot Weight, g	31.7	32.0	31.8
Fill Factor, % 78 45 31	Weight of Spider, g	24.8	14.5	9.8
	Fill Factor, %	78	45	31

continued

	Viton™ GLT-200S	50/50 Blend	Viton <sup>™</sup> GLT-600S
Physical Properties at RT—Original (Cured 7 min at 177 °C [350 °F].	—No post-cure)		
M-10, MPa	0.63	0.72	0.7
M-100, MPa	3.1	3.4	3.2
Tensile, MPa	11.4	12.4	13.8
T-B, psi	1,656	1,795	2,001
Elongation, %	256	292	310
Hardness, A, pts	66	66	64
"Hot" Tear Strength at 150 °C (302 °F)—Original (Cured 7 min at 17	7 °C [350 °F]—No post-cur	re)	
Tear Die B (nicked), N/mm	9.4	10.1	10.6
Physical Properties at RT—Original (Cured 7 min at 177 °C [350 °F]	—Post-cured at 232 °C [30]	2 °F] as noted)	
	2 hr	2 hr	2 hr
M-10, MPa	0.7	0.8	0.6
M-100, MPa	3.7	3.9	3.5
Tensile, MPa	16.2	18.2	18.4
T-B, psi	2,350	2,642	2,671
E-B, %	254	298	308
Hardness, A, pts	68	67	67
Compression Set, Method B, O-Rings			
22 hr at 200 °C (392 °F)			
– Post-cured at 232 °C (450 °F)	13	11	13
70 hr at 200 °C (392 °F)			
– No Post-cure	23	26	25
– Post-cured at 232 °C (450 °F)	20	20	20
Low Temperature Testing			
Tg by DSC, °C	-32.8	-32.9	-32.8
Physical Properties at RT—Heat Aged 70 hr at 250 °C (482 °F) in 0v	/en		
M-10, MPa	0.7	0.8	0.7
% Change, M10	0	-1	7
M-100, MPa	3.3	3.6	3.1
% Change, M100	-9	-9	-11
Tensile, MPa	19.5	19.2	18.2
% Change, T-B	20	6	-1
Elongation, %	328	325	346
% Change, E-B	29	9	12
Hardness, A, pts			
1 di di 1655, A, p.5	67	67	67

# Table 1. General Properties of Viton<sup>®</sup> GLT-200S Compared with Viton<sup>®</sup> GLT-600S (continued)

continued

	Viton™ GLT-200S	50/50 Blend	Viton™ GLT-600S
Physical Properties at RT—Heat Aged 70 hr at 275 °C (527 °F) in	Oven		
M-10, MPa	0.7	0.8	0.7
% Change, M10	3	5	5
M-100, MPa	3.8	3.7	3.2
% Change, M100	4	-5	-10
Tensile, MPa	13.6	13.8	13.7
% Change, T-B	-16	-24	-26
Elongation, %	250	273	307
% Change, E-B	-2	-8	0
Hardness, A, pts	67	67	67
Pts Change	-1	0	0
Physical Properties at RT—Aged 168 hr at 150 °C (302 °F) in ASTM #105 0il (5W/30)			
M-10, MPa	0.8	0.8	0.8
% Change, M10	15	8	34
M-100, MPa	3.9	4.1	4.3
% Change, M100	7	5	22
Tensile, MPa	8.9	8.6	8.6
% Change, T-B	-45	-53	-53
Elongation, %	165	156	158
% Change, E-B	-35	-47	-49
Hardness, A, pts	70	69	69
Pts Change	2	2	2
Volume Swell, %	0.7	0.8	0.7
Fluid Immersions—Volume Swell			
Fuel C, 168 hr at 23 °C (73 °F)	8.6	8.3	8.6
CM15 Fuel, 168 hr at 23 °C (73 °F)	32.0	36.4	28.8
Distilled Water, 168 hr at 100 °C (212 °F)	3.9	3.8	3.2

# Table 1. General Properties of Viton" GLT-200S Compared with Viton" GLT-600S (continued)

#### **Test Procedures**

Property Measured	Test Procedure
Compression Set	ASTM D395, Method B (25% deflection)
Compression Set, O-Rings	ASTM D395, Method B (25% deflection)
Hardness	ASTM D1414, durometer A
Mooney Scorch	ASTM D1646, small rotor at 121 °C (250 °F)
Mooney Viscosity	ASTM D1646, ten pass at 121 °C (250 °F)
ODR (oscillating disk rheometer)	ASTM D2084
Property Change After Heat Aging	ASTM D573
Stress/Strain Properties 100% Modulus Tensile Strength (T-B) Elongation (E-B)	ASTM D412, pulled at 8.5 mm/sec (20 in/min)
Temperature Retraction (TR-10)	ASTM D1329
Volume Change in Fluids	ASTM D471

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

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