

# Silicone Rubber Material Specification

<b>Standard Gasket Compound</b>	GE7A1	
<b>Common Names/Aliases</b>	Silicone Rubber	
<b>Grade</b>	Commercial, FDA	
<b>Color</b>	Red	
<b>Chemical Group (ASTM D-2000 Code)</b>	VQM,Q (GE)	
<b>Application</b>	Rubber of choice where for high temperature, medical, and food grade static seals. Complies with numerous ASTM, Military, and FDA specifications. Relatively poor tensile, tear, and abrasion resistance renders unsuitable for many dynamic sealing applications.	
<b>Competing Compounds</b>		
<b>Standard Specifications (related technical specs detailed below)</b>	ASTM D-2000-01 M5GE706-A19-B37-E016-E036-EA14-F19-G11; ZZR-765 Cl 2a & 2b, Grade 70; FDA CFR 177.2600; AMS 3304; AS3582 (supersedes MS 9068)	
	<b>Physical Properties</b>	
<b>Item (Unit)</b>	<b>Specification</b>	<b>Actual</b>
<b>Hardness - Durometer</b>	70 +/- 5 Shore A	71 Shore A
<b>Tensile Strength</b>	870 psi (6 MPa) min	995 psi (6.9 MPa)
<b>Elongation%</b>	150% min	175%
<b>Temperature Range</b>	n/a	-80 F/+400 F (-62 C/+204 C)
<b>Specific Gravity</b>	n/a	1.43
	<b>Actual Test Data (ASTM D2000 Suffix Reference)</b>	
	(A19) Heat Age, 70 hrs @ 437° F (225° C)	
<b>Hardness-Durometer Change</b>	+10 Shore A max	+4 Shore A
<b>Tensile Strength Change</b>	-25% max	-14.3%
<b>Elongation% Change</b>	-30% max	-18.4%
	(B37) Compression Set, 22 hrs @ 347° F (175° C)	

<b>Original Deflection</b>	<b>25% max</b>	<b>12.4%</b>
	<b>Compression Set, 70 hrs @ 302° F (150° C)</b>	
<b>Compression Deflection%</b>	<b>n/a</b>	<b>19.4%</b>
	<b>(EA14) Water Resistance 70 hrs @ 212° F (100° C)</b>	
<b>Hardness-Durometer Change</b>	<b>+/-5 Shore A max</b>	<b>-1 Shore A</b>
<b>Volume Change</b>	<b>+/-5% max</b>	<b>+2.5%</b>
	<b>(EO16) ASTM #1 Oil, 70 hrs @ 302° F (150° C)</b>	
<b>Hardness-Durometer Change</b>	<b>0/-15 Shore A max</b>	<b>-7 Shore A</b>
<b>Tensile Strength Change</b>	<b>-20%</b>	<b>-2.9%</b>
<b>Elongation% Change</b>	<b>-20%</b>	<b>0</b>
<b>Volume Change</b>	<b>0/+10% range</b>	<b>+6.4%</b>
	<b>(EO36) ASTM #3 Oil, 70 hrs @ 302° F (150° C)</b>	
<b>Hardness-Durometer Change</b>	<b>-30 Shore A max</b>	<b>-20 Shore A</b>
<b>Tensile Strength Change</b>	<b>n/a</b>	<b>n/a</b>
<b>Elongation% Change</b>	<b>n/a</b>	<b>n/a</b>
<b>Volume Change</b>	<b>+60% max</b>	<b>+35%</b>
	<b>(F19) Low Temperature Brittleness, 3 min @ -67° F (-55° C)</b>	
<b>Per ASTM D2137, Method A</b>	<b>Non-Brittle</b>	<b>Pass</b>
	<b>Low Temperature Brittleness, 3 min @ -85° F (-65° C)</b>	
<b>Per ASTM D2137, Method A</b>	<b>Non-Brittle</b>	<b>Pass</b>