



SEALANT, SILICONE RUBBER, OXIME CURED, HIGH VISCOSITY, BLACK

WSS-M4G323-A13

1. SCOPE

The material defined by this specification is a one component thixotropic spreadable silicone rubber based adhesive/sealant. It is capable of being pumped, metered, and distributed into a gasket profile. These materials are ready for use as received, requiring no catalyst or heat cure.

2. APPLICATION

This specification was released originally for materials used for formed-in-place gaskets such as engine oil pan, rocker cover, cylinder block or oil pump, where high operating temperatures (up to 204 °C) may be encountered. The material is a high viscosity, medium modulus, oxime cured material with excellent blowout resistance and long assembly time, good oil resistance and excellent adhesion and joint movement resistance on oiled steel and aluminum panels. This material has very poor resistance to coolant/water and must not be used for these applications.

3. REQUIREMENTS

Material specification requirements are to be used for initial qualification of materials.

3.1 APPROVED SOURCES

This specification requires the use of approved sources. Only the sources identified on the Ford Approved Source List (ASL) can be used when this specification is listed on the drawing, CAD file, or other documents. The list of approved sources is located within Ford at www.mats.ford.com or available externally through a Ford Materials Engineer.

3.2 SPECIFIC GRAVITY (ASTM D792, Method A)

1.25 - 1.37

3.3 EXTRUSION RATE (Semco Press Flow, 620 kPa, 23 °C)

40 – 60 grams/minute

3.4 BLOW OUT RESISTANCE (FLTM BV 126-01, 14 kPa pressure, 30 minutes cure at 23 °C at 50% R.H., 0.75 mm and 1.0 mm gap, 4.0 mm flange)

One minute cure time:

Gap, 0.75 mm

150 seconds, min

Gap, 1.00 mm

70 seconds, min

30 minutes cure time:

Gap, 1.00 mm

200 seconds, min

Note: Take 1 minute to assemble and test 30 minutes after assembly.

Date	Action	Revisions	Rev. 02
2017 05 12	Reactivated	See revision paragraph	A. Reaume NA
2017 01 04	Inactive	No replacement	S. Short, NA
2014 12 08	Released		A. Reaume NA

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- 3.5 CURE RATE RANGE** (Assembly Time) 7 – 20 min
(FLTM BV 125-01, max time at which both surfaces have a continuous strip of sealant at 23 °C and 50% R.H.)
- 3.6 TOTAL SILICONE VOLATILES** 0.6 max
(FLTM AV 102-01, cured 24 h at 23 +/-2 °C and 50 +/-5% R.H.)
- 3.7 CURED PROPERTIES**
(Properties determined after curing the sealant for 16 +/-2 h at 23+/-2 °C and 50+/-5% relative humidity with a 2.0 mm cross section.)
- 3.7.1 Original Tensile Strength 1.7 MPa min
(ASTM D412, Die C)
- 3.7.2 Elongation 290 % min
- 3.7.3 Modulus at 100 % 0.5 MPa min
- 3.7.4 Durometer Hardness 31 - 46
(ASTM D2240, Shore A, instantaneous)
- 3.8 OIL IMMERSION**
(ASTM D471, 168h at 150+/-2 °C, ASTM SF105 Oil, after cure per paragraph 3.7)
- 3.8.1 Tensile Strength Change -10% max
(ASTM D412, Die C)
- 3.8.2 Elongation Change -40% max
- 3.8.3 Volume Change -20% max
- 3.8.4 Hardness Change +40 max
(ASTM D2240, Shore A, instantaneous)
- 3.9 HIGH TEMPERATURE RESISTANCE**
(ASTM D573, 168h at 175+/-2 °C, after cure per paragraph 3.7)
- 3.9.1 Tensile Strength Change +40 to -10 %
(ASTM D412, Die C)
- 3.9.2 Elongation Change -60 % max
- 3.9.3 Hardness Change +22 max
(ASTM D2240, Shore A, instantaneous)
- 3.10 LAP SHEAR ADHESION & JOINT MOVEMENT**
(SAE J1523, test on clean panels and panels dipped with ASTM SF105 oil, bondline thickness 1.0 mm, after cure per paragraph 3.7)