



Sealant Compound, Adhesive, Anaerobic, Grade 242

1 Scope

1.1 Material Description. A blue anaerobic, dimethylacrylate polyester resin base liquid compound that solidifies by polymerization (not by solvent evaporation) into a tough plastic when confined between closely fitted metal surfaces, producing an effective seal against leakage and medium shear strength resistance to loosening. This material may be used on slightly oiled cadmium and zinc plated, black oxide, and phosphate and oil coated parts and still obtain satisfactory properties. For maximum properties, parts must be cleaned.

1.2 Symbols. Not applicable.

1.3 Applicability. This material is intended for thread locking and sealing fasteners and studs for fluid pressure resistance or to prevent loosening under shock and vibration or a combination of both. May also be used for sealing hydraulic, pneumatic or pipe threaded fittings, and retaining keys and splines.

1.3.1 A material obtaining full thread locking strength with bond line thicknesses to 0.08 mm and seal with gap thicknesses to 0.15 mm using the Table 1 pin and collar test. The material curing time may be substantially reduced with accelerators or heat.

1.3.2 Temperature Use Range of -55 °C to +150 °C. Low temperature performance is based on maintaining 50% or more of the original minimum prevailing and breakaway torque after 2 h exposure (measure in 30 s or less). The low temperature test is not required for this standard. The upper temperature limit is based on Table 3 aging requirements.

1.4 Remarks. The words must, shall or will as used in this document mean a mandatory requirement.

1.4.1 Application of the product outside its use category (retaining and sealing) as defined by GMW16800, (Retaining and Sealing) is strictly prohibited.

1.4.2 Pre-applied thread form coatings have better uniform coverage and are ready to assemble for automotive production build. See GMW14657. Liquid products are mostly used for service repair.

1.4.3 Use of automated application dispensing system equipment designed for this product provides a measured uniform liquid coating. Contact the product manufacturer for equipment recommendations.

1.4.4 Finish Influence. Data in Table 1, Table 2 and Table 3 is based on standard test finishes listed in GMW16800. Production coatings and finishes are likely to provide different results.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

ASTM D445	ASTM D3278	ASTM D5657	ISO 10964
ASTM D792	ASTM D4562	ISO 10123	
ASTM D1084	ASTM D5649		

2.2 GM Standards/Specifications.

GMW3059	GMW15735	GMW16800	GMW17205
GMW14657	GMW16076		

2.3 Additional References.

Leadership, Performance, Sustainability (LPS); LPS Precision Clean, <http://www.lpslabs.com/>

3 Requirements

3.1 This product is to be tested per the methods outlined in GMW16800, Thread Locking and Sealing, Table A1: Anaerobic Test Matrix.

3.1.1 All table tests listing more than one method, the one in bold was used to generate that table data property.

3.1.2 Minimum Table Data Requirements. Table 1 and Table 2 are based on the minimum number of batches described in GMW16800, Initial Approval. Conformance to Table 3 is based on one batch.

3.1.3 Per the Global Subsystem Leadership Team decision in January 2016 submission of data for product compliance is suspended (due to limited supplier testing resources at the time of this refresh). Table 1, Table 2 and Table 3 values are based on previous testing.

Table 1: Initial Qualification Requirements

Properties	Test Method	Values
Unpolymerized		
Prevailing Torque	ASTM D5649 , ISO 10964	3 N·m to 11 N·m
Breakaway Torque	ASTM D5649	10 N·m to 24 N·m
Flash Point	ASTM D3278	100 °C minimum
Specific Gravity	ASTM D792	1.07 ± 0.05
Storage/Stability Viscosity Increase	GMW15735, GMW16800 (4.7)	50% maximum
Toxicity/Health and Safety	GMW3059	
Polymerized		
(Pin and Collar)	ASTM D4562 , ISO 10123	6 MPa minimum
Fluid Compatibility, 168 h at 150 °C, GMW16076 oil	See GMW16800 (4.16)	
Prevailing Torque	ASTM D5649 , ISO 10964	-50% or less of original minimum
Breakaway Torque	ASTM D5649	-50% or less of original minimum
Corrosion to Metal (aluminum and steel)	GMW16800 (4.6)	No Corrosion

Table 2: Batch/Lot Requirements

Unpolymerized		
Appearance Color	GMW16800 (4.8) Blue	Smooth Homogeneous Mixture
Viscosity at 25 °C, Brookfield Model RVF, Spindle 3 At 2/2.5 rpm At 20 rpm	ASTM D445, ASTM D1084 , GMW16800 (4.4)	4500 mPa·s minimum 700 mPa·s to 2000 mPa·s
Polymerized		
Cure Speed 90/100% (prevailing torque), steel, 24 h minimum, room temperature	ASTM D5649	2.5 N·m minimum
Hot Strength, 2 h at 150 °C Prevailing Torque Breakaway Torque	GMW16800 (4.13), measure after 30 s after removal	-50% or less of original minimum -50% or less of original minimum

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