



Polyoxymethylene Copolymer – Stainless Steel Fiber Filled, Electrostatically Dissipative

1 Scope

1.1 Material Description. This specification covers the properties of a stainless steel fiber filled, pellet formed, injection moldable, fuel resistant polyoxymethylene (acetal) copolymer.

1.2 Symbols. All plastic parts must have legible plastic compound identification symbol per GMW3116 and ISO 11469 requirements. >POM-MF(Fe)7<.

1.3 Applicability. Typical applications include fuel pump system components requiring electrostatically dissipative properties (for example fuel ports, filter housings, inlet check valves, etc.)

2 References

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

2.1 External Standards/Specifications.

ASTM E831	ISO 294-3/4	ISO 3146	ISO 11469
IEC 60093	ISO 527-1/2	ISO 3167	SAE J1645
ISO 75-1/2	ISO 1133	ISO 3451-1	SAE J1681
ISO 179/1eA	ISO 1183	ISO 9988-2	
ISO 188	ISO 1817	ISO 11359-2	

2.2 GM Standards/Specifications.

GMW3013	GMW3059	GMW3116	GMW3221
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2.3 Additional References.

TMC003 Material Safety Data Sheet guidance documents (available at www.gmsupplypower.com).

3 Requirements

Materials approved to this specification shall meet the standard requirements of GMW3013.

3.1 Requirements on Delivery. Important physical, mechanical, and thermal properties that characterize the material are summarized in Table 1. The color shall be specified on drawings as needed.

3.2 Requirements on Test Specimens. Reference GMW3221. Unless otherwise specified, injection molding of test specimens shall be accomplished per ISO 294-3/4 with the conditions for injection molding from ISO 9988-2. Unless otherwise specified, test methods and specimen dimensions are also to be in accordance with GMW3013.

All tests shall be performed on unannealed specimens immediately following a conditioning period of 24 h minimum in a controlled atmosphere per GMW3221, Code A, unless otherwise specified. In addition, tests specified at temperatures below or above 23 °C shall be conditioned at the specified temperature for 4 h minimum and tested at the specified temperature.

The values specified in Table 1 shall be met by test specimens in natural, black, or integrally colored.

3.3 Chemical Requirements. All parts manufactured from molding compounds shall be resistant to the media they contact at their place of use.

Note: For each product, the requirements to Table 1 shall be documented by a Certification Statement according to GMW3013.

3.4 Compound Properties. See Table 1. The following are also required for full specification approval. The minimum number of lots per test required is one: Electronically supplied Stress Strain Curve at multiple

temperatures, e.g., +23 °C, +85 °C, -30 °C and after 1000 h of fuel soak, Differential Scanning Calorimetry Curve, Shear Modulus Curve, and Infrared Spectroscopy Curve.

3.5 Fuel Soak. On a standard tensile bar, measure length, width, and thickness at center of gauge length prior to start of test. Measure length, width, and thickness again at center of gauge length after 1000 h fuel soak. Calculate percent change in each direction:

$$\frac{d_1 - d_2}{d_1}$$

Where:

d_1 is original measurement

d_2 is measurement after soak

3.6 Performance Requirements. Performance requirements shall be specified on part drawings or in component specifications.