



Polyolefin Alloy – Weather Resistant, 900 MPa Flexural Modulus, High Flow GMN7301

1 Scope

1.1 Material Description. This specification covers the properties of a weather resistant, high melt flow rate, 900 MPa nominal flexural modulus polyolefin alloy, pellet form, injection molding compound. For the purpose of this specification, polyolefin alloy is defined as an alloy of polypropylene plastic and EP or EPDM rubber.

1.1.1 Paintability. Approved paint systems that can be used on this material are listed in the GM Approved Paint on Parts Systems (GM APOPS) database.

1.2 Symbol. The material abbreviation according to ISO 11469 is >E/P<.

1.3 Typical Application. Typical applications include the following: bumper fascias.

2 References

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

2.1 External Standards/Specifications.

ASTM D3763	ISO 3451/1
ISO 178	ISO 11469
ISO 294	SAE J1545
ISO 527	SAE J1960
ISO 1133	SAE J1976
ISO 1183	

2.2 GM Standards/Specifications.

GMW3001	GMW3221
GMW3059	

3 Requirements

Important physical, mechanical and thermal properties that characterize the material are summarized in charts. The color shall be specified on drawings, in material specifications and otherwise.

3.1 Sample Conditioning. Unless otherwise specified, test specimens shall be injection molded according to ISO 294.

Test shall be conducted 40 hours minimum after molding and immediately following a conditioning period of 24 hours minimum at conditions per GMW3221, code A. All tests shall be performed on unannealed specimens.

Tests shall be conducted using the latest issue of the test methods indicated. Suitable precautions should be taken to ensure that applicable safe limits are not exceeded when conducting test procedures, processes, and/or handling the materials required by this specification.

3.2 Compound Properties. See Tables 1 and 2.

3.3 Performance Requirements. Performance Requirements e.g., flammability, fogging or resistance to odor shall be specified on part drawings or in component specifications.

4 Manufacturing Process

Not applicable.

Table 1 Compound Properties (Natural)

Properties	Standard	Unit	Values
Mineral Filler	ISO 3451/1, Method A	% by mass	11 max.
Density	ISO 1183, Method A	g/cm ³	0.89 to 1.00
Melt Flow Rate	ISO 1133	g/10 min	15 to 26
Flexural Modulus	ISO 178, 80 x 10 x 4 mm specimen, 2 mm/min test speed, 64 mm support span	MPa	830 to 1100
Tensile Stress at Yield	ISO 527-1/2, specimen A, 50 mm/min test speed	MPa	12 minimum
Multiaxial Impact Strength at 23 ± 2°C	ASTM D3763, specimen C, 2.2 m/s impact velocity	J at max load	15 minimum All failures must be ductile
Multiaxial Impact Strength at -30 ± 2°C	ASTM D3763, specimen C, 2.2 m/s impact velocity	J at max load	18 minimum All failures must be ductile
Weather Resistance (See Note 2) Color Change Surface Defects	2 years exposure to direct weather in Arizona and Florida per SAE J1976 Procedure A. Measure color as defined in Note 1 below.	ΔE	3.0 max. No objectionable defects allowed.
Accelerated Weather Resistance (See Note 2) Color Change Surface Defects	2500 kJ/m ² exposure to exterior xenon arc apparatus per SAE J1960. Measure color as defined in Note 1 below.	ΔE	3.0 max. No objectionable defects allowed.