



Elastomer for Sealing Between Pipe Fuel Filler and Body Panel

1 Scope

This standard covers the materials and performance of elastomeric sealing between the fuel filler pipe and the cut-out in the body panel.

1.1 Material Description. Materials covered by this standard are divided into three (3) types.

- **Type A:** Chlorinated Polyethylene (CPE).
- **Type B:** Acrylonitrile-Butadiene Rubber (NBR).
- **Type C:** Drawing defined (e.g., using SAE J200 or ASTM D2000 line callout).

1.2 Symbols. Not applicable.

1.3 Applicability. Performance of elastomeric sealing materials for use between the fuel filler pipe and the cut-out in the body panel.

2 References

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

2.1 External Standards/Specifications.

ASTM D2000	ISO 188	ISO 1431-1	ISO 7619-1
IEC 62631-1	ISO 815-1	ISO 3865	SAE J200
ISO 37			

2.2 GM Standards/Specifications.

GMW3059	GMW14270	GMW14914	GMW17821
GMW14162			

2.3 Additional References.

Drawing/Math Data File
Relevant Test Procedures

3 Requirements

3.1 Requirements on Test Specimens.

3.1.1 Resources.

3.1.1.1 Test Samples. Unless otherwise specified, the shape, size and number of test pieces shall be in accordance with the relevant test procedures. Unless otherwise specified, samples are finished parts or to be taken from finished parts. If not otherwise stated, mechanical properties in delivery state and after heat or fluid immersion are to be tested at +23 °C and with the same test procedures.

3.1.2 Conditioning. Conditioning shall be as specified in the relevant test procedures.

3.1.3 Equipment. Conforming to the relevant test procedures.

3.1.4 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.5 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this specification shall be determined correctly with respect to its physical definition.

3.1.6 Facilities. Conforming to the relevant test procedures.

3.1.7 Deviations. Deviations from the requirements of this standard shall have been agreed upon. Such deviations shall be specified on component drawings, test certificates, reports, etc.

3.2 Material and Performance Requirements. Material and performance requirements are summarized in Table 1.

3.3 All materials supplied to this standard must comply with GMW3059, **Restricted and Reportable Substances**, including the requirement to submit a full material composition disclosure to GM via the International Material Data System (IMDS) or via a completed GMW3059 report form.

Table 1: Material and Performance Requirements

Property	Test Method	Unit	Value
Hardness			
Type A	Hardness to ISO 7619-1	Shore A	65 ± 5
Type B	Hardness to ISO 7619-1	Shore A	60 ± 5
Type C	As specified on drawing/math data file	Shore A	As specified on drawing
Elongation at Break			
Type A and Type B	ISO 37, dumbbell test piece Type 4	Percent (%)	250 minimum
Type C	As specified on drawing/math data file	%	As specified on drawing
Age Resistance (Heat Aging)			
Type A	ISO 188 Method B, 168 h -2 h at +100 °C ± 3 °C Change in Hardness	Shore A	+15 maximum
Type B	ISO 188 Method B, 168 h -2 h at +70 °C ± 3 °C Change in Hardness	Shore A	+10 maximum
Type C	As specified on drawing/math data file	Shore A	As specified on drawing
Ozone Resistance			
Type A	ISO 1431-1, 50 pphm, 20% strain, 40 °C ± 2 °C, 72 h -2 h, Visual Examination		No cracks
Type B	ISO 1431-1, 50 pphm, 10% strain, 25 °C ± 2 °C, 72 h -2 h Visual Examination		No cracks
Type C	As specified on drawing/math data file		As specified on drawing
Fuel Resistance			
Type A	GMW14914, Table 1, "Conventional Gasoline"; 48 h -2 h, +23 °C ± 5 °C Test piece thickness: 1 mm ± 0.1 mm Change of volume (15 minutes after removal) Change of Hardness (15 minutes after removal) Change of Hardness after storage in air for 48 h at +23 °C Ozone Resistance after storage in air for 48 h at +23 °C	% Shore A Shore A	+50 maximum -15 to +2 -5 to +15 No cracks
Type B	GMW14914, Table 1, "Conventional Gasoline"; 48 h -2 h, +23 °C ± 5 °C Test piece thickness: 1 mm ± 0.1 mm Change of volume (15 minutes after removal) Change of Hardness (15 minutes after removal) Change of Hardness after storage in air for 48 h at +23 °C	% Shore A Shore A	+50 maximum -20 to +2 -5 to +15
Type C	As specified on drawing/math data file	%	As specified on drawing