



Low MDI Urethane Acoustic Foam, Mixture

1 Scope

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose/Material Description. This specification describes the requirements of a two (2) component, rigid polyurethane foam material used as an acoustic baffle in enclosed areas such as A pillar, B pillar, and C pillar and engine compartment structures. It must be capable of bonding to e-coated metal, be non-wicking and be compatible with all manufacturing processes. This material has an approximate volumetric expansion of 4500%.

1.1.1 Material Description and Identification. This material is a two (2) component foam comprised of a 2:1 mixture (by volume) of polymeric Methylene Diphenyl Diisocyanate (MDI) blend (GM Part Number 9986620) and a polyol blend (GM Part Number 9986621). The reacted foam mixture is identified as GM Part number 9986622 and GMW18310.

1.2 Symbols. Not applicable.

1.3 Applicability. Typical applications include acoustic baffles in A pillar, B pillar, and C pillar, and other enclosed areas.

1.4 Remarks. Not applicable.

2 References

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

2.1 External Standards/Specifications.

ASTM D92	ASTM D1475	ASTM D2126	ASTM D4339
ASTM D1622	ASTM D1735	ASTM D2196	SAE J1756

2.2 GM Standards/Specifications.

GMW3059	GMW14124	GMW14729	GMW15735
GMW14093	GMW14270		

2.3 Additional References.

- GM Part Number 9986620
- GM Part Number 9986621
- GM Part Number 9986622

3 Requirements on Test Specimen

3.1 Requirements on the Polymeric MDI Blend (GM Part Number 9986620) and Polyol Blend (GM Part Number 9986621).

3.1.1 Requirements on Delivery. The polymeric MDI blend and the polyol blend must be homogeneous and free of lumps, unmixed particles, and foreign materials.

3.1.2 Shipping Stability (GMW15735). Material shall be stored in airtight containers away from heat and sunlight.

3.1.3 Elevated Temperature Stability (GMW15735). As shipped, the material must be capable of withstanding 72 h at +54 °C. Test per GMW15735.

3.1.4 Low Temperature Stability (GMW15735). As shipped, the material must be capable of withstanding three (3) cycles of the applicable cycle schedule outlined in GMW15735.

3.1.5 Storage Stability (GMW15735). The shelf life of the material in closed containers shall be 90 days at a temperature not to exceed +35 °C, when tested per GMW15735. Shelf life of the materials commences upon receipt of the material from the manufacturer.

3.1.6 Color. The two (2) components, polymeric MDI blend and polyol blend, shall be in contrasting colors. The colors shall be picked so that in instances of improper mixing, color striations shall be visible in the dispensed material.

3.1.7 Material Properties. See Table 1 and Table 2.

Table 1: Material Properties of the Polymeric Blend (GM Part Number 9986620)

Property	Test Method	Value
Viscosity (at +25 °C)	ASTM D2196	425 cps to 525 cps
Appearance	Not applicable	Brown Liquid
Flash Point	ASTM D92	> 93 °C (> 200 °F)
Shelf Life	GMW15735	90 days minimum
Specific Gravity	ASTM D1475	1.05 to 1.18
Odor	Not applicable	Slight

Table 2: Material Properties of the Polyol (GM Part Number 9986621)

Property	Test Method	Value
Viscosity (at +25 °C)	ASTM D2196	925 cps to 1150 cps
Appearance	Not applicable	Milky White Liquid
Flash Point	ASTM D92	> 93 °C (> 200 °F)
Shelf Life	GMW15735	90 days minimum
Specific Gravity	ASTM D1475	1.04 to 1.055
Odor	Not applicable	Slight

3.1.8 Viscosity (ASTM D2196) of the Polymeric MDI Blend. In addition to being determined at +25 °C, the viscosity shall also be tested and reported at the process condition temperature.

3.2 Requirements on the Cured Foam (GM part number 9986621).

3.2.1 Requirements on Test Specimens.

3.2.1.1 Odor (ASTM D4339). The cured foam must not have a toxic or noxious odor.

3.2.1.2 Toxicity. The foam must not adversely affect the personnel handling it.

3.2.1.3 Adhesion. The foam must not crack, promote corrosion, or lose adhesion to the test panel before, during or after the following conditions.

- Initial
- After 24 h at Room Temperature
- GMW14124 Cycle F, Six (6) Cycles
- Heat Aging of 336 h at +70 °C