



Adhesive, One-Part, Antiflutter, Medium Expansion, Medium Strength

1 Scope

1.1 Material Description. This specification covers a pumpable one-part adhesive suitable for bonding exterior automotive body panels for antiflutter applications.

1.1.1 The material shall be compatible with production pretreatment, E-Coat, and topcoat systems, and shall not be adversely affected by bake temperatures up to 204 °C.

1.1.2 This material shall expand and cure in the heat of the E-Coat ovens.

1.2 Symbols. Not applicable.

1.3 Applicability. This adhesive material is typically used to bond closure inner to closure outer panels (interior to the periphery bond), to provide resistance to dynamic flutter within the closure assembly.

1.4 Remarks. This antiflutter adhesive is typically used with galvanized steel closure assemblies. It may be considered for aluminum closure assemblies if additional antiflutter performance is required.

2 References

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

2.1 External Standards/Specifications.

ASTM D570	ASTM D4339	EPA Method 24	SAE J1524
ASTM D1875	ASTM E502	SAE J243	SAE J1864

2.2 GM Standards/Specifications.

GMW3059	GMW14874	GMW15481	GMW15735
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3 Requirements

3.1 Toxicity. The toxicity shall be disclosed in kind and magnitude, as required, by the GM Materials Safety Data Sheet. In addition the material must have full approval of the appropriate medical department prior to production use.

3.2 Stability (GMW15735). Material conditioned using potential storage conditions must be capable of passing all the requirements of this specification.

3.2.1 Elevated Temperature Stability. As shipped, the adhesive must be capable of withstanding a temperature of 55 °C for 72 h without separation or caking.

3.2.2 Low Temperature Stability. As shipped, the adhesive must be capable of withstanding 3 cycles of the applicable cycle schedule outlined in GMW15735.

3.2.3 Storage Stability. The shelf life of the adhesive in closed containers shall be 90 days at a temperature not to exceed 35 °C. Shelf life of the material commences upon the receipt of the material from the manufacturer.

3.3 Pressure Stability (SAE J1864). As shipped, the adhesive must not separate or cake.

3.4 Non-Smoking. The adhesive shall not smoke up to 177 °C and shall not be classified greater than a slight smoker at 191 °C.

3.5 Material Properties – Uncured Adhesive. See Table 1.

Table 1: Material Properties – Uncured Adhesive

Properties	Values	Test Methods
Color	Black	Visual
Odor	The material shall not have a noxious odor in either cured or uncured condition	ASTM D4339
Sag Resistance	No sag or slide at room temperature or during bake	SAE J243, ADS-10, C
VOC	< 0.2%	EPA Method 24
Viscosity As Received Maximum Aged	37 s ± 13 s < 100 s	SAE J1524 Aged per GMW15735
Density	1.3 g/cm ³ ± 0.1 g/cm ³	ASTM D1875
Flash Point	> 200 °C	ASTM E502
Homogeneity	Material must be homogeneous and free of lumps or air bubbles	-
Volume Expansion	100% ± 30%	GMW15481

VOC = Volatile Organic Compound

3.6 Material Properties – Cured Adhesive. See Table 2.

Table 2: Material Properties – Cured Adhesive

Properties	Values	Test Methods
Moisture Absorption	< 3% by weight	ASTM D570
Bondline Readthrough	No perceivable bondline readthrough	Visual Inspection

3.7 Adhesive Properties. Test specimens, prepared as specified in the designated procedures, must meet the requirements of GMW14874 Medium Expansion - Medium Strength (ME - MS).

3.7.1 This procedure must be repeated for each bonding system under consideration for the application.

3.8 Other tests may be required to validate the specific application.

4 Manufacturing Process

Not applicable.

5 Rules and Regulations

5.1 Legal Regulations. All materials must satisfy applicable laws, rules, regulations and recommendations valid in the country of usage.

5.2 Language. In the event of conflict between the English and domestic language, the English language shall take precedence.

5.3 Inspection and Rejection. Samples of components or materials released to a GM material specification shall be tested for conformity with the requirements of this material specification and approved by the responsible Engineering department prior to commencement of delivery of bulk supplies.