



Adhesive, One-Part, Structural, Fracture Toughened, Non-Expanding

1 Scope

1.1 Material Description. This specification describes a pumpable, one-component, fracture toughened adhesive suitable for automotive applications, such as, vehicle body panels and reinforcements. This material shall be used in the Body Shop or Fabrication Plant, on "oily metal", and cure in the heat of the Paint Bake Ovens.

1.2 Symbols. Not applicable.

1.3 Applicability. "Weld-bonding" of typical automotive flanges, with resistance weld spacing to be determined by the requirements of the application.

1.4 Remarks.

1.4.1 Structural bonds resulting from the use of this material shall provide an adhesive strength to the substrate (oily Cold Rolled Steel (CRS), galvanized steel or aluminum), that is greater than the cohesive strength of the material when tested in shear, tension and/or peel.

1.4.2 Adhesive materials approved to this specification shall be capable of maintaining bond integrity of test samples and assemblies that are fatigue tested to the prescribed frequency, load, total cycles and environment listed in the associated performance specification.

1.4.3 This material shall be compatible with current application equipment and it is recommended that the dispensing equipment be capable of "conditioning" the material to a dispense temperature of approximately 38 °C. This material shall also be compatible with GM production wash, pretreatment, and paint systems. This material shall not be adversely affected by maximum production paint bake temperatures.

2 References

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

2.1 External Standards/Specifications.

ASTM D570	ASTM D2369	EPA Method 24	SAE J1864
ASTM D1875	ASTM E502	SAE J1524	

2.2 GM Standards/Specifications.

GMW3059	GMW14270	GMW15200	GMW15735
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3 Requirements

3.1 Material Properties; Uncured Adhesive. See Table 1.

Table 1: Uncured Adhesive Material Properties

Property	Value	Test Method
Color	Blue	Visual
Moisture Absorption	< 2%	ASTM D570
Volatile Organic Compounds (VOC)	< 1%	EPA Method 24
Solids Content	> 99%	ASTM D2369
Viscosity - Initial	Report	SAE J1524 Pressure Flow Meter Method with 0.264 mm orifice at 414 kPa
Viscosity - Aged	Report	SAE J1524 Pressure Flow Meter Method with 0.264 mm orifice at 414 kPa (Aged per GMW15735)
Density	1.1 to 1.3	ASTM D1875
Flash Point	> 200 °C	ASTM E502
Homogeneity	Material must be homogeneous and free of lumps or air bubbles	Visual

3.2 Material Properties; Cured Adhesive.

3.2.1 Adhesion Requirements (GMW15200). Materials approved to this specification shall meet the performance requirements of GMW15200-HS-IR (Impact Resistance at 23 °C only).

4 Manufacturing Process

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

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

4.3 Low Temperature Stability. As shipped, the adhesive shall be capable of withstanding three (3) cycles of the applicable cycle schedule outlined in GMW15735.

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

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.

A new approval must be received for any changes, e.g., properties, manufacturing process, location of manufacture, etc. If not otherwise agreed, all testing and documentation normally required for initial release must be completed.

It is the responsibility of the supplier to inform the customer in a timely manner, without solicitation, and to include documentation of all modifications of materials and/or processes and to apply for a new release.

5.4 Material Safety Data Sheets/Safety Data Sheets (MSDS/SDS). For new product submissions, or when a change in chemical composition of an existing product has occurred, a complete copy of the Material Safety