



Adhesive, Two-Part, Urethane, Hardener

1 Scope

This specification describes the hardener component, one (1) part of a two (2)-part adhesive for primerless bonding of Fiber Reinforced Plastic (FRP) panels to FRP, primed steel or primed aluminum.

1.1 Material Description. The adhesive system is comprised of a Part A resin component 9986131 and a hardener component 9982264. The mixture of 9986131 and 9982264 is identified as 9982265.

1.2 Symbols. Not applicable.

1.3 Applicability. The mixture of the hardener component 9982264 with the resin component 9986131 when mixed in the correct ratio will result in an adhesive that is suitable for bonding vehicle structures.

1.4 Remarks. This system shall be capable of being metered, mixed and dispensed with current production equipment. It shall be compatible with production paint systems and cannot be adversely affected by paint oven temperatures reaching 130 °C.

2 References

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

2.1 External Standards/Specifications.

ASTM D1875	ASTM E502	SAE J1864
ASTM D2369	SAE J1524	

2.2 GM Standards/Specifications.

9982265	GMW3059	GMW15735
9986131	GMW14270	

3 Requirements

3.1 Material Properties. See Table 1.

3.2 Color. The two (2) components shall be in contrasting colors. The colors shall be so picked, that, in instances of improper mixing, color striations shall be visible in the dispensed bead.

Table 1: Material Properties

Properties	Values	Test Methods
Color	Black	Visual
Solids Content	100% reactive	ASTM D2369
Viscosity	15 Pa.s nominal	SAE J1524, Viscometer Model (RVT) Brookfield Method, 10 min ⁻¹ (10) rpm, spindle Number six (6) and 23 °C
Density	1.22 kg/L	ASTM D1875
Flash Point	> 93 °C	ASTM E502
Homogeneity	Material shall be homogeneous and free of lumps or air bubbles	Visual

3.3 Additional Requirements. The manufacturer shall supply an Infra-red spectrum and a thermo-gravimetric scan of the material.

4 Manufacturing Process

4.1 Stability (GMW15735). Store in airtight containers (to prevent moisture curing effects) away from heat and sunlight. Material conditioned using potential storage conditions shall be capable of passing all the requirements of this specification.

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

4.3 Low Temperature. As shipped, the material must be capable of withstanding three (3) cycles of the applicable low temperature stability cycle outlined in GMW15735.

4.4 Storage Stability. The shelf life of the material in closed containers shall be 180 days at a temperature not to exceed 35 °C. Shelf life of the material commences upon the receipt of the material from the manufacturer.

4.5 Pressure Stability (SAE J1864). As shipped, the adhesive must 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 Data Sheet/Safety Data Sheet must be submitted in compliance with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) requirements or other country-specific MSDS/SDS requirements.

5.5 All materials supplied to this standard must comply with the requirements of the International Material Data System (IMDS) and GMW3059, **Restricted and Reportable Substances**.

6 Approved Sources

Materials supplied to this specification must be approved by General Motors.

A list of approved materials can be found in the GM Materials Approved Source List. This GM Material File is provided to third parties to reduce redundant testing of materials. If approved material already listed is used, the part supplier can use GM Material File reference for Production Part Approval Process (PPAP) material approval. If the decision is made to use a not yet approved material, contact GM Materials Engineering for details on the approval process. The material approval process must be completed prior to PPAP start date of the part supplied to General Motors.

Engineering qualifications of an approved source are required for this standard. Only sources listed in the GM Materials File (i.e., GM SupplyPower) under this standard number have been qualified by engineering as meeting the requirements of this standard. To access this list, reference GMW14270 for latest location.

For other GM locations, the responsible engineering group should be contacted to obtain the approved source in that individual country.