



Edge Sealing Epoxy (2 Component)

1 Scope

1.1 Material Description. This specification covers the properties of a two (2) component epoxy coating system that consists of a difunctional Bis-phenol A Epichlorohydrin derived liquid epoxy resin, and a condensation product of polyamine and dibasic acid curing agent. This material has a long open time at room temperature after mixing but, cures rapidly in thin films at 121 °C (250 °F).

1.2 Symbols. Not applicable.

1.3 Applicability. This material is being used for edge sealing sheet molded compound (SMC) panels that have been sanded through the in-mold coating (IMC) or smoothed at the edges.

1.4 Remarks. The material must be paintable using the paint system being applied at the target assembly plant. Performance must meet GMW14797.

2 References

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

2.1 External Standards/Specifications.

ASTM D445	ASTM D1475	ASTM D1652	ASTM D2471
ASTM D1209	ASTM D1544	ASTM D2196	ASTM D2896

2.2 GM Standards/Specifications.

GMW3059	GMW14270	GMW14797
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3 Requirements

3.1 Test Procedures. Tests shall be conducted using the latest issue of the test procedures indicated. Suitable precautions should be taken to ensure that applicable safe limits are not exceeded when conducting test procedures, processes, and or/handling of the materials required by this specification.

3.2 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.

3.3 Material Properties.

3.3.1 Component A (Resin). See Table 1.

3.3.2 Component B (Crosslinker). See Table 2.

3.3.3 Mixed Material (Component A Mixed with Component B). See Table 3.

Table 1: Component A (Resin)

Properties	Test Values	Test Methods
Resin	Epoxy	Infrared Characterization Scan
Gardner Color Number	One (1) maximum (clear liquid)	ASTM D1544
Viscosity	110 poise to 150 poise	ASTM D445 at 25.00 °C ± 0.01 °C
Epoxide Equivalent Weight	185 g to 192 g of resin contains one (1) equivalent of epoxide	ASTM D1652

Table 2: Component B (Crosslinker)

Properties	Test Values	Test Methods
Color	50 (Platinum to Cobalt)	ASTM D1209
Amine Number	343 mg KOH/g to 370 mg KOH/g	ASTM D2896
Viscosity at 25.00 °C ± 0.01 °C	~70 cP	ASTM D2196
Density	0.983 kg/L (8.2 lb/gal)	ASTM D1475

Table 3: Mixed Material (Component A Mixed with Component B) Cured Epoxy

Properties	Test Values	Test Methods
Viscosity, Initial	1540 cP	ASTM D2196
Gel Time, 100 g mass	8.7 h	ASTM D2471
Gel Time at 150 °C	2.0 minutes minimum	Hot Plate
Mixed Pot Life	1.5 h to 2 h at 25 °C	ASTM D2196
Cure Schedule	2 h at 80 °C (176 °F) 3 h at 125 °C (257 °F)	ASTM D2471

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.

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.