



Polyurethane Structural Foam, Isocyanate Curative

1 Scope

1.1 Material Description. This specification covers the chemical and physical requirements of the isocyanate hardener component of a two-part polyurethane foam.

The structural foam system is comprised of a 1:1 mixture (by volume) of a polyol resin, 9982294 and an isocyanate curative, 9982227. The mixture of 9982294 and 9982227 is identified as 9982296.

1.2 Symbols. Not applicable.

1.3 Applicability. The polyurethane foam is used as a structural foam in areas such as A, B and C pillars and engine compartment structures.

2 References

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

2.1 External Standards/Specifications.

ASTM D92

ASTM D1638

2.2 GM Standards/Specifications.

9982294

9982296

GMW3059

GMW15735

3 Requirements

3.1 Requirements on Delivery. The isocyanate curative component must be homogeneous, free of lumps, unmixed particles and foreign materials.

3.2 Toxicity. The material must not have any adverse effect on personnel handling it. In addition, the supplier must submit a GM Materials Safety Data Sheet and receive approval from all medical, safety and industrial hygiene departments before the material can be used in production.

3.3 Stability (GMW15735). Material shall be stored in airtight containers away from heat and sunlight to prevent moisture curing effects.

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

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

3.4 Storage Stability. 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 material commences upon the receipt of the material from the manufacturer.

3.5 Color. The two components, isocyanate hardener and polyol resin, shall be in contrasting colors. The colors shall be so picked such that in instances of improper mixing, color striations shall be visible in the dispensed material.

3.6 Material Properties. See Table 1.

Table 1: Material Properties

Properties	Test Method	Value
Appearance	Not applicable	Brown, liquid
Flash Point	ASTM D92	213 °C minimum
Shelf Life	GMW15735	90 days minimum
Specific Gravity	ASTM D1638	1.24
Odor	Not applicable	Slight

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.

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 MATSPC. 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 General Motors 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.

7 Notes

7.1 Glossary.

MATSPC: Global repository of GM approved materials for corresponding GM Engineering Standards.

7.2 Acronyms, Abbreviations, and Symbols.

GHS Globally Harmonized System of Classification and Labeling of Chemicals

IMDS International Material Data System