



Adhesive, Induction Cure, Epoxy, Structural - Metal

1 Scope

1.1 Material Description. This specification details the physical properties and performance requirements of a one-component, heat curing (induction or oven), thermosetting, epoxy based, structural adhesive paste, modified to reach sufficient handling strength (metal distortion) in a normal induction cure cycle.

1.1.1 The adhesive shall be capable of being metered mixed and dispensed with current production equipment. It shall be compatible with production systems, including paint, and cannot be adversely affected by paint oven temperatures reaching 200 °C.

1.2 Symbols. Not applicable.

1.3 Applicability. The adhesive is commonly used in a hem joint configuration to bond steel body components such as inner/outer body panels on doors, hoods, deck lids and other components.

1.4 Remarks. The adhesive can be cured in the E-coat bake oven with or without a prior single 4 s induction cure cycle in a normal, hairpin coil, run at 3 kHz. Other induction cure coil designs may necessitate longer dwell times for the cure cycle. Provisions should be made in the fabrication process to monitor hem flange temperatures during induction heating to ensure that the level of required cure is met.

2 References

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

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

GMW3059

GMW14270

GMW18077

2.3 Additional References. None.

3 Requirements

3.1 Materials approved to this standard shall meet the requirements stated in GMW18077-Type 1-MS-GB.

3.2 All materials supplied to this standard must comply with GMW3059, **Restricted and Reportable Substances**, including the requirement to obtain a GM-approved International Material Data System (IMDS) submission.

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.

6 Approved Sources

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

A list of approved materials can be found in the GM Materials Approved Source List. To access this list, reference GMW14270 for latest location. This GM material file is provided to third parties to reduce redundant testing of materials. If an approved material is used, the part supplier can use the 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.

7 Notes

7.1 Glossary.

Electrophoretic Painting Process (E-Coat): The E-coat process is best described as a cross between plating and painting. It is a process where a metal part is immersed in a water-based solution containing a paint emulsion. An electric voltage is applied to the part causing the paint emulsion to condense onto the part.

7.2 Acronyms, Abbreviations, and Symbols.

GHS	Globally Harmonized System of Classification and Labeling of Chemicals
GSSLT	Global Subsystem Leadership Team
IMDS	International Material Data System
MSDS	Material Safety Data Sheet
PPAP	Production Part Approval Process
SDS	Safety Data Sheet

8 Coding System

This standard shall be referenced in other documents, drawings, etc., as follows:

Material per 9985599

9 Release and Revisions

This standard was originated in March 1986. It was first published in April 1986.

Issue	Publication Date	Description (Organization)
1	APR 1986	Initial publication.
2	AUG 1989	Editorial changes. Title Change.
3	MAR 2019	Revised to current template. (Materials - Adhesives Global Subsystem Leadership Team (GSSLT))