GM ENGINEERING STANDARDS	Material Specification	9986260

Sealer - Pumpable, Low Bake, Paintable

1 Scope

This specification details the requirements of a paintable, low bake, normal weight sealer. The material is applied in the paint shop after the Electrocoat (e-coat) bake and before primer surfacer. It must be capable of being applied either manually or robotically. This material is intended to seal interior and exterior joints against water, dust, air intrusion and corrosion. In addition, this material is intended for use in areas of the vehicle where a high level of appearance performance is required and must therefore be capable of being finesse skived and have excellent compatibility with production primer surfacer and topcoat systems.

1.1 Material Description. The material must be a smooth and homogeneous mixture that is free of air, lumps, unmixed particles or foreign materials. It must be capable of being dispensed with approved and validated production displacement pumping and application equipment, including single point streaming, swirl, ribbon tip and automated hem sealing. It must not have a noxious or toxic odor in either the uncured or cured state. In addition, the material must not adversely affect the personnel handling it.

1.2 Symbols. Not applicable.

1.3 Applicability. Intended to seal interior and exterior joints**.** A paintable, low bake, normal weight sealer to have excellent compatibility with production primer surfacer and topcoat systems.

1.4 Remarks. The material must adhere to all approved production e-coat substrates. It must have good durability and not accelerate the rusting of steel over which it is applied.

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	GMW3221	GMW14270	GMW16087

2.3 Additional References.

PPAP Documentation Requirements

3 Requirements

3.1 Sample Conditioning. All samples are to be conditioned prior to each required test to GMW3221, Code D.

3.2 Performance Requirements. All performance requirements are detailed in GMW16087.

3.3 Production Part Approval Process (PPAP). In addition to the requirements detailed above, all new material must comply with and meet all PPAP Documentation Requirements including, but not limited to, Product and Process Specific Design Matrix, Design Failure Mode and Effects Analysis (DFMEA), Process Failure Mode and Effects Analysis (PFMEA), Key Product Characteristic (KPC), Key Control Characteristic (KCC), Process Flow and Control Plan, Formulation Footprint, Process Capability Study and Measurement Systems Analysis.

3.3.1 Detailed technology specific bake charts must be developed and submitted to the appropriate GM Paint Engineer for approval.

4 Manufacturing Process

Not applicable.

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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.

The appropriate GM Materials Engineering Department (Product Engineering or Manufacturing Engineering) must confirm materials as meeting the requirements of this specification. Only materials/sources listed in the GM Materials Approved Source List under this standard number have been qualified by Engineering as meeting the requirements of this standard.

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.

7 Notes

7.1 Glossary. Not applicable.

7.2 Acronyms, Abbreviations, and Symbols.

DFMEA	Design Failure Mode and Effects Analysis
e-coat	Electrocoat
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
IMDS	International Material Data System
KCC	Key Control Characteristic
KPC	Key Product Characteristic
MSDS	Material Safety Data Sheet
PFMEA	Process Failure Mode and Effects Analysis
PPAP	Production Part Approval Process
SDS	Safety Data Sheet

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