GM	WORLDWIDE ENGINEERING STANDARDS	Material Specification	GMW17405

Incoming Paint and Sealer Material Documentation Requirements

1 Scope

1.1 Material Description. This specification details the minimum information that must accompany each batch of material arriving for use at a GM assembly plant or painted parts supplier. The following materials are covered in this procedure.

- Pretreatment/Powerwash System Chemicals
- Electrodeposition (ELPO) – Resin and Paste
- Paint Shop Sealers – Pumpable and Preform
- Primer Surfacer – Liquid and Powder
- Plastic Parts Primers
- Basecoat or Monocoat
- Clearcoat
- Sprayable Deadener and Sound Damper
- Reprocess, Primers/Basecoats/Clearcoats/Catalysts

1.2 Symbols. Not applicable.

1.3 Applicability. This standard provides the key incoming material properties for the materials listed in 1.1. These key properties may be used by the plants to track the consistency of the materials they receive to ensure that the materials will perform properly in production.

2 References

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

2.1 External Standards/Specifications.

ASTM D523	ASTM D2240	ASTM D4052	ISO 1148
ASTM D792	ASTM D2369	ASTM D5180	ISO 2808
ASTM D1474	ASTM D3451	ASTM D5861	ISO 2811
ASTM D1475	ASTM D3960	ASTM D5965	ISO 3251
ASTM D2196	ASTM D4017	ASTM E70	SAE J1524

2.2 GM Standards/Specifications.

GMW3019	GMW15174	GMW15979	GMW16680
GMW3025	GMW15481	GMW16070	GMW16920
GMW3059	GMW15545	GMW16087	GMW17056
GMW6725	GMW15777	GMW16150	GMW17065
GMW14829	GMW15978	GMW16292	

2.3 Additional References.

Environmental Protection Agency (EPA) Reference Method 24

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3 Requirements

3.1 Requirements on Delivery. Each CONTAINER of material must be properly identified with at least the following information.

- GMWXXXX - 998XXXX or regional number (e.g., LXXX XXX, EDS, etc.)
- Supplier
- Batch Number
- GM Part Number (if applicable)
- Container Tare Weight
- Total Weight of Filled Container
- Supplier Material Identification Number
- Date of Manufacture
- Container Volume (gallons/liters of material)
- Expiration Date (month, day, year) (MMM, dd, yyyy) e.g., JAN, 07, 2015
- Storage Requirements (temperature range, humidity, other…)

3.1.1 The following information shall be provided for each batch of material that arrives at a GM assembly plant or painted parts supplier. This is intended to provide documentation that the materials coming into a plant meet specification and should, therefore, deliver the expected performance on the vehicle if processed properly. The data shall be reported on a Certificate of Analysis (COA) form.

3.1.2 Each COA shall begin by identifying the batch with the following information:

- Supplier
- GMWXXXXX - 998XXXX or regional number (Example: LXXX XXX, EDS, etc.)
- Batch Identification (ID) Number
- GM Part Number (if applicable)
- Supplier Material ID Number (Product Code)
- Manufacture Date (month, day, year) (MMM, dd, yyyy), Example: JAN, 07, 2015

3.1.3 Following the batch identification information, each COA shall be listed in a table format with the following column headings.

- Property/Attribute: Property or attribute being tested or measured.
- Test Method/Procedure: The test method or procedure (e.g., ASTM D523, GMW15777) that is used to determine the value of the property or attributes.
- Specification Requirement: Specification range for that property. This range is established during the Production Part Approval Process (PPAP) conducted as part of the Technology Approval for a material or is defined in the GM material specification. A supplier can use an alternative range as long as it is narrower than the ranges previously identified.
- Batch Results: Actual results for that batch.

3.1.4 COA tables that specify the required properties/attributes for each of the materials identified in Section 1.1 are included in Appendix A.

3.1.5 The COA batch information can be transmitted electronically to the assembly plant.

3.1.6 Each new batch of primer surfacer, basecoat and clearcoat must also be accompanied by a batch sprayout panel. This panel is a representative sprayout of the new batch of material applied at target filmbuild. Basecoat batch panels shall also have clearcoat applied at target filmbuild. The back of the batch panels shall be labeled with the batch test results for each of the required properties identified in Appendix A.

3.1.7 If a supplier wants to deviate from any of the requirements specified in Appendix A, the supplier must submit a written request for deviation to GM Vehicle Systems Paint Materials. Deviations to supplier COAs should be handled using the regional process of change. The supplier will receive a written response either approving or rejecting their request for deviation.

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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.

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 File (MATSPC) under this standard number have been qualified by Engineering as meeting the requirements of this standard.

7 Notes

7.1 Glossary.

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

7.2 Acronyms, Abbreviations, and Symbols.

#	Number
1K	One component
2K	Two component
COA	Certificate of Analysis
DOI	Distinctness of Image
ELPO	Electrodeposition
EOLR	End of Line Repair
EPA	Environmental Protection Agency
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
ID	Identification
IMDS	International Material Data System
LASD	Liquid Applied Sound Damper
MSDS	Material Safety Data Sheet
NCO	Isocyanate Content

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NTU Nephelometric Turbidity Unit
PPAP Production Part Approval Process
SDS Safety Data Sheet
UV Ultraviolet
VOC Volatile Organic Compound

8 Coding System

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

Material per GMW17405

9 Release and Revisions

This standard was originated in June 2015. It was first approved by Vehicle Systems - Paint Materials and Facility in October 2015. It was first published in October 2015.

Issue	Publication Date	Description (Organization)
1	OCT 2015	Initial publication.

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Appendix A: Material Properties and Attributes

Material	Attribute	Test Procedure	Frequency	Specified Range	Batch Results
Pretreatment					
Cleaners	Free Alkalinity	Titration	Every batch		
	Total Alkalinity	Titration	Every batch		
Rinse Conditioner	Titanium	Spectrophotometer	Every batch		
Phosphate	Appearance	Visual Assessment	Every batch	Clear green liquid	
	Free Acid	Titration	Every batch		
	Total Acid	Titration	Every batch		
Zirconium Oxide	pH	ASTM E70	Every Batch		
	Zirconium	Spectrophotometer	Every Batch		
	Copper	Spectrophotometer	Every Batch		
Sealant Rinse (Inorganic)	Free Acid	Titration	Every batch		
	Zirconium Level or Counter Ion	Spectrophotometer or Ion Specific Electrode	Every batch		
Sealant Rinse (Organic)	Viscosity	ASTM D2196	Every batch		
	pH	ASTM E70	Every batch		
	% Weight Solids	ASTM D2369	Every batch		
Phosphates Additives	Appearance	Visual Appearance Assessment	Every batch		
(Use attributes only if applicable)	Specific Gravity/Density	ASTM D1475	Every batch		
	Free Acid	Titration	Every batch		
	Metal Concentration	Spectrophotometer	Every batch		
	Fluoride Level	Ion Specific Electrode	Every batch		
Powerwash					
Alkaline Cleaners	Free Alkalinity	Titration	Every batch		
	Total Alkalinity	Titration	Every batch		
Acidic Cleaners	pH	ASTM E70	Every batch		
	Specific Gravity	ASTM D1475	Every batch		
Rinse Aid	pH	ASTM E70	Every batch		
	Specific Gravity	ASTM D1475	Every batch		
ELPO					
Resin Component	% Weight Solids	ASTM D2369	Every batch		
	% Volume Solids	Formula	Every batch		
	Specific Gravity/Density	ASTM D1475	Every batch		
	Crater Rating/Contamination	Evaluate with control pigment paste	Every batch		
Pigment Paste Component	% Weight Solids	ASTM D2369	Every batch		
	% Volume Solids	Formula	Every batch		
	Specific Gravity/Density	ASTM D1475	Every batch		
	Viscosity	ASTM D2196	Every batch		

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