



Blackout/High Temperature Resistant Paint for Bulb Shields

1 Scope

This specification covers a flat black, high temperature resistant coating for stainless steel or chrome plated stainless steel surfaces. This material is intended to blacken headlamp bulb shields and similar applications.

1.1 Material Description. The material shall be homogeneous, free of impurities, dry to a smooth finish and be capable of withstanding temperatures of up to 430 °C without a loss of adhesion.

1.2 Symbols. Not applicable.

1.3 Applicability. Black inner coatings for headlamp bulb shields is not recommended due to high cost, contact Product Engineering if glare reduction is required.

1.4 Remarks. These high temperature flat black coatings are part of a total painted product system and must meet the requirements set forth in this specification and those shown on engineering drawings. Initial approval per this specification must be evaluated and approved for each substrate.

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

GMW14729

GMW14829

2.3 Additional References.

TMC003 Material Safety Data Sheet guidance documents (available at www.gmsupplypower.com).

3 Requirements

3.1 Color and Gloss. This material shall be black in color and have a flat finish.

3.2 Solids Content. The solids content shall be established at time of approval by the purchaser and set forth in the Material Safety Data Sheet (MSDS).

3.3 Dry Time. Air dry time before heat cure, minimum of 15 minutes at a typical dry film thickness of 25 µm.

3.4 Post Cure. Dry coating will be cured at 345 °C or higher, for 45 minutes or longer.

3.5 Humidity 96 h, GMW14729. Panels or parts shall withstand 96 h humidity exposure when tested in accordance with GMW14729. After humidity, the coating shall not exhibit any blistering, wrinkling, fading, delamination, etc. The coating shall also pass tape adhesion after humidity per GMW14829, Method A, with a minimum of 99% coating adhesion.

3.6 Heat Resistance. Panels or parts must pass a continuous exposer of 430 °C for 8 h without flaking or blistering and without significant surface deterioration, significant color change or significant outgassing.

3.7 Headlamp Applications. For bulb shield applications in headlamps, the following requirement must be met.

3.7.1 Temperature Test. Headlamp assemblies must pass a continuous burn (low beam) of 600 h without blistering, significant surface deterioration, significant color change or significant outgassing.

4 Manufacturing Process

4.1 Source Shipment Responsibility. It will be the responsibility of the supplier to ensure that the material is not exposed to temperatures during shipment which would cause the material to fail to meet any of the requirements of this specification.

4.2 Initial Source Approval No shipment shall be made by any supplier until representative initial production samples have been approved by engineering as meeting the requirements of this specification.

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.

If not otherwise agreed, all release tests shall be repeated and documented by the supplier prior to commencement of delivery of non-conforming bulk supplies. In individual cases, a shorter test can be agreed to between the responsible Engineering department and the supplier.

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. In addition, product MSDS/SDS submissions must be in compliance with specific country General Motors TMC003 Material Safety Data Sheet/Safety Data Sheet guidance documents where available.

5.5 All materials supplied to this standard must comply with the requirements of GMW3059, Restricted and Reportable Substances for Parts.

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.

GHS	Globally Harmonized System of Classification and Labeling of Chemicals
MSDS	Material Safety Data Sheet
SDS	Safety Data Sheet