



Grease, Electrical Connector

1 Scope

1.1 Material Description. This specification covers an inorganically gelled, water resistance grease based on a stabilized, high viscosity synthetic hydrocarbon oil.

1.2 Symbols. Not applicable.

1.3 Applicability. The approved grease must be compatible with the materials used in electrical switch connector construction. The intended usage is headlight switch connectors.

1.4 Remarks. This grease is mildly thixotropic, becoming semifluid on agitation but returns to the gelled state when energy input ceases.

2 References

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

2.1 External Standards/Specifications.

ASTM D217	ASTM D638	ASTM D1264	FTM 791C
ASTM D445	ASTM D942	ASTM D2265	
ASTM D566	ASTM D972	ASTM D4048	

2.2 GM Standards/Specifications.

GMW3059

2.3 Additional References.

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

3 Requirements

3.1 Physical Properties. The grease shall be smooth, transparent, and free of any foreign material (see Table 1).

3.2 Compatibility. The grease shall be compatible with the plastics (such as polycarbonate) and other materials in the specified application. Compatibility with plastics is evaluated as follows:

Injection mold tensile test bars (ASTM D638). Bend the bars in a test fixture to achieve a 0.5% strain. Apply a light coating of grease on the tension side of the test bar. The grease should be wiped off the bars, after 240 h at the temperature which simulates continuous use of the mating parts in the field. The bars should be inspected for signs of incompatibility. Crazing, embrittlement (reduction in flexibility), cracking, breaking or other failures in the plastic is evidence of incompatibility and failure of the grease.

3.3 Assembly Function. The greased assembly shall meet all the functional requirements as specified on the detail and assembly drawings.

Table 1: Physical Properties

Properties	Values	Test Methods
Penetration		ASTM D217
Unworked	310 to 340	
Worked (60 strokes)	310 to 360	
Dropping Point, °C	250 minimum	ASTM D566/ASTM D2265
Oil Separation (24 h, 100 °C) ^{Note 1}	5% maximum	Federal Test Method (FTM) 791C Method 321.3
Evaporation (24 h, 100 °C) ^{Note 1}	1% maximum	ASTM D972
Oxidation Stability, (100 h, 100 °C)	35 kPa maximum	ASTM D942
Water Washout at 80 °C	4% maximum	ASTM D1264
Base Oil Viscosity, mm ² /s (cSt) at 100 °C	39 to 41	ASTM D445
Copper Corrosion, Rating	1b maximum	ASTM D4048

Note 1: Nonstandard conditions.

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. All shipments of material or parts under contract or purchase order manufactured to this specification shall be equivalent in every respect to the initial samples approved by Engineering. There shall be no changes in either formulation or manufacturing processes permitted without prior notification and approval by Engineering. Lack of notification by the supplier constitutes grounds for rejection of any shipment. While samples may be taken from incoming shipments and checked for conformance to this specification, the supplier shall accept the responsibility for incoming shipments meeting this specification without dependence upon purchaser's inspection.

The series of tests used to approve each batch of product along with acceptance limits will be agreed upon by the purchaser and seller. The laboratory providing the certificate of analysis must also participate in a proficiency testing program (round robin) that is approved by the Fuels, Fluids, and Lubricants Global Subsystem Leadership Team (GSSLT) or designate. The Fuels, Fluids, and Lubricants GSSLT or designate must receive copies of the proficiency testing reports directly from the test program administrator.

5.4 Initial Source Approval. No shipment shall be made by any supplier until representative initial production samples have been approved by the Fuels, Fluids, and Lubricants Global Subsystem Leadership Team or designees meeting the requirements of this specification.

5.5 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.