



Grease, High Temperature Water Spray Resistant, No. 1-2

1 Scope

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose/Material Description. This specification covers high temperature, water spray resistant grease having uniformly dispersed short fibers and zinc oxide fillers. The grease will be thickened with an aluminum thickener.

1.2 Symbols. Not applicable.

1.3 Applicability. The grease is intended for the lubrication of automotive hardware mechanisms that are subjected to possible high temperatures and excessive water spray and/or water flow exposures as encountered in automotive body preparations and paint application currently used in production.

1.4 Remarks. None.

2 References

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

2.1 External Standards/Specifications.

ASTM D88	ASTM D445	ASTM D1742	ASTM D4049
ASTM D217	ASTM D566	ASTM D3232	

2.2 GM Standards/Specifications.

GMW3059

2.3 Additional References. Not applicable.

3 Requirements

3.1 Requirements on Delivery.

3.1.1 Chemical Requirements. Typical chemical composition, by mass (%), is as follows in Table 1.

Table 1: Chemical Requirements

Component	Mass Percent
Aluminum Complex	6 to 9
Polypropylene	4 to 6
Zinc Oxide	4 to 6
Moisture (water)	1 maximum
Sand or Gritty material	0.03 maximum

3.1.2 Physical Requirements. See Table 2.

Table 2: Physical Requirements

Test	Method	Requirement	Units
Consistency (penetration) worked, 25 °C	ASTM D217	280 to 330	1/10 mm
Dropping Point	ASTM D566	230 Minimum	°C
Bleeding, 160 °C, 1 h	ASTM D3232	The grease shall neither slide down the panel nor show any indication of oil bleeding out.	
Alternate Oil Bleed Test	ASTM D1742	1.5 max	%
Viscosity of oil at 40 °C	ASTM D88	550 to 850	SUS
Viscosity of oil at 40 °C	ASTM D445	129 to 193	cSt
Water Spray Resistance	ASTM D4049	25 Maximum	%

Note: cST = Centistokes, SUS = Saybolt Universal Seconds

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. 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.