



Grease, Lithium Thicken, PTFE Filled Synthetic

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 outlines the properties of a polytetrafluoroethylene (PTFE) filled, lithium soap thickened synthetic grease. This grease is intended for wide temperature lubrication of bearings, sliding surfaces and small gear trains and is compatible with most ester-vulnerable plastics and polymers. The PTFE filler provides improved lubricity and low temperature starting torque.

1.2 Symbols. Not applicable.

1.3 Applicability. This lubricant is typically used in bearings, sliding surfaces, and small gear trains requiring a wide temperature range.

1.4 Remarks. None.

2 References

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

2.1 External Standards/Specifications.

ASTM D128	ASTM D445	ASTM D2265	ASTM E168
ASTM D217	ASTM D972	ASTM D4048	FTM 791C

2.2 GM Standards/Specifications.

GMW3059

2.3 Additional References. Not applicable.

3 Requirements

3.1 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.

3.2 Properties, Requirements and Test Methods. See Table 1.

Table 1: Properties, Requirements and Test Methods

Properties	Requirements	Test Methods
Penetration worked 60 strokes, 0.1 mm	265 to 295	ASTM D217
Penetration, cold, after 6 h soak at 40 °C, 0.1 mm	140 minimum	ASTM D217. Modified to include cold soak after 60 strokes, undisturbed penetration
Dropping Point, degrees Celsius (°C)	193 Minimum	ASTM D2265
Oil Separation, percentage (%), after 24 h at 100 °C	5.0 Maximum	FTM 791C, Method 321.3

Properties	Requirements	Test Methods
Evaporation, percentage (%), after 24 h at 100 °C	1.0 Maximum	ASTM D972
Copper Strip Corrosion after 1 h at 150 °C	1B Rating Maximum	ASTM D4048
PTFE Content, weight percentage (%)	8 to 12	ASTM D128
Thickener Type	Lithium Soap	ASTM D128 or ASTM E168
Appearance	Smooth	Visual
Base Oil Kinematic Viscosity at 100 °C, Centistoke (cSt)	8.0 to 9.0	ASTM D445

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.

6 Approved Sources

Materials supplied to this specification must be approved by General Motors.

The appropriate GM Materials Engineering department(s) must confirm material as meeting the requirements of this specification. Any test data sheets of material submitted to General Motors for such confirmation (e.g., during Production Part Approval Process (PPAP)) under this material specification must list all properties and must apply corresponding test methods of this material specification.