



Grease, Synthetic, Number 2 with Polytetrafluoroethylene

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 defines grease composed of a synthetic hydrocarbon base oil, silica thickener, and polytetrafluoroethylene (PTFE) micro powder.

1.2 Symbols. Not applicable.

1.3 Applicability. This grease is intended for lubrication requiring load carrying capacity and a wide temperature range of -40 °C to 200 °C. Specific applications include gear boxes, bearings, cables, and slides.

1.4 Remarks. None.

2 References

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

2.1 External Standards/Specifications.

ASTM D217	ASTM D1742	ASTM D2596
ASTM D1264	ASTM D2266	

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.

3.1.1 Base Oil. Synthetic hydrocarbons comprised of olefin oligomers (polyalphaolefins) shall be used as the base oil.

3.1.2 National Lubricating Grease Institute (NLGI) Category. The product shall meet NLGI category GC-LB.

3.1.3 PTFE Content. The product shall contain between 2% to 3% by mass PTFE in the form of micro powder.

3.1.4 Thickener. Silica shall be used as the thickener.

3.2 Specific Requirements. See Table 1.

Table 1: Specific Requirements

Requirement	Method	Limit	Units
Appearance	Visual	Translucent white	Unitless
Four ball wear scar	ASTM D2266	0.5 maximum	mm

Requirement	Method	Limit	Units
Four ball Extreme Pressure (EP) weld load	ASTM D2596	400 maximum	Kg
Oil separation	ASTM D1742	2 maximum	Mass%
Penetration, Worked 60 strokes at 25 °C	ASTM D217	265 to 295	mm/10
Water washout at 80 °C	ASTM D1264	3 maximum	Mass%

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.

For other GM locations, the responsible engineering group should be contacted to obtain the approved source in that individual country.