GM	WORLDWIDE ENGINEERING STANDARDS	Material Specification	GMW16751

Grease, Fluorinated

1 Scope

1.1 Material Description. This specification defines grease composed of perfluoropolyether oil and polytetrafluoroethylene or Polyurea thickener.

1.2 Symbols. Not applicable.

1.3 Applicability. Grease defined by this specification is intended for applications requiring resistance to water, fuel, oil, and aggressive chemicals. Fluorinated grease with polytetrafluoroethylene (PTFE) thickener is often used in vehicle interiors, pin calipers, and clutch forks (spheric pin articulation). Fluorinated grease with Polyurea or PTFE thickener is used to provide insertion force reduction and long term protection of electrical contacts.

1.4 Remarks. Fluorinated grease with PTFE thickener is compatible with most elastomers and plastics. Fluorinated grease with Polyurea thickener should not be used to eliminate vehicle interior noise.

2 References

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

2.1 External Standards/Specifications.

ASTM D217	ASTM D2596	DIN 51350	DIN ISO 2137
ASTM D566	ASTM D6138	DIN 51802	DIN ISO 2176
ASTM D2265	ASTM D6184	DIN 51805	

2.2 GM Standards/Specifications.

GMW3059	GMW14270

2.3 Additional References.

Safety and Industrial Hygiene (S&IH) Technical Standard (TS), S&IH TS 3.4-160-02 (available at www.gmsupplypower.covisint.com).

3 Requirements

3.1 All materials supplied to this standard must comply with GMW3059, **Restricted and Reportable Substances**, including the requirement to submit a full material composition disclosure to GM via the International Material Data System (IMDS) or via a completed GMW3059 report form.

3.2 Performance Requirements.

3.2.1 Base oil. Perfluoropolyether (PFPE) oil shall be used as the base oil.

3.2.2 Thickener. Fluorinated grease shall contain either polytetrafluoroethylene (PTFE) particles or Polyurea as the thickening agent

3.2.2.1 Polyurea thickeners are produced from the reaction of isocyanates and amines and are sometimes referred to as diurea or tetraurea, depending on the size of the urea structure.

3.2.2.2 Thickener Designations. The designation for fluorinated grease containing PTFE thickener is PT. The designation for fluorinated grease containing Polyurea thickener is UT.

3.2.3 Specific Requirements. The grease shall meet the requirements listed in Appendix A, Table A1 and Table A2.

3.3 Nomenclature. Grease type, thickener type, and consistency are defined using the following nomenclature:

© Copyright 2017 General Motors Company All Rights Reserved

Documents
Document Sharing Hub

Copyright General Motors Company
Provided by IHS Markit under license with General Motors Company
Reproduction, distribution or publication of these standards is expressly prohib
Licensee=/, User=,
Not for Resale,
Full document details: GMW GMW16751 2017

4XY# where:

- **4** means PFPE oil-based grease
- **XY** are letters designating thickener type shown in 3.2.2.1
- **#** is a number from one to three (1 to 3) indicating National Lubricating Grease Institute (NLGI) consistency. (Example):
- 4PT2 is PFPE oil-based grease
- PTFE thickener
- National Lubricating Grease Institute (NLGI) consistency 2

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 S&IH TS 3.4-160-02 where available.

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.

Engineering qualifications of an approved source are required for this standard. Only sources listed in the GM Materials File (i.e., GM SupplyPower) under this standard number have been qualified by engineering as meeting the requirements of this standard. To access this list, reference GMW14270 for latest location.

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

© Copyright 2017 General Motor Company All Rights Reserved

Documents
Document Sharing Hub

Copyright General Motors Company
Provided by IHS Markit under license with General Motors Company
Reproduction, distribution or publication of these standards is expressly prohib
Licensee=/, User=,
Not for Resale,
Full document details: GMW GMW16751 2017