



Grease, Wheel Bearing, High Temperature, No. 2

1 Scope

1.1 Material Description. A grease having high temperature, extreme pressure, and other characteristics suitable for lubrication of tapered roller wheel bearings.

1.2 Symbols. Not applicable.

1.3 Applicability. This grease is typically used for lubrication of tapered roller wheel bearings where extreme temperature and pressure environments are present.

2 References

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

2.1 External Standards/Specifications.

ASTM D97

ASTM D445

ASTM D4693

ASTM D4950

ASTM D217

ASTM D4170

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 Properties. Must meet all requirements of ASTM D4950, Category GC, with the following exceptions:

Properties	Values	Test Methods
Consistency, worked penetration, mm/10	265 to 295	ASTM D217
Low temperature performance, torque at -40 °C, Nm	14.0 maximum	ASTM D4693
Fretting wear test	10 mg maximum	ASTM D4170
Thickener	-	-
Type	Note 1	
Concentration	Note 1	
Additives	-	-
Type	Note 1	
Concentration	Note 1	
Base Oil	-	-
Pour point, °C	Note 1	ASTM D97
Viscosity at 40 °C, cSt	Note 1	ASTM D445
Viscosity at 100 °C, cSt	Note 1	ASTM D445

Note 1: Supplier to report.

cSt = Centistokes

3.2 Vehicle Performance Test. Grease shall perform satisfactorily in heavy duty service tests, such as taxi cab duty, without evidence of any lubrication problems when vehicles are serviced following owner's manual recommendations.

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.

5.6 All materials supplied to this standard must comply with the requirements of GMW3059, **Restricted and Reportable Substances for Parts.**

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.

7 Notes

7.1 Glossary. Not applicable.

7.2 Acronyms, Abbreviations, and Symbols.

cSt	Centistokes
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
GSSLT	Global Subsystem Leadership Team
MSDS	Material Safety Data Sheet
No.	Number