



ENGINEERING STANDARDS

Material Specification

9986102

Grease, Polyurea CV Joint

1 Scope

1.1 Material Description. This specification outlines the properties of a mineral oil based, polyuria thickened grease.

1.2 Symbols. Not applicable.

1.3 Applicability. Typically used in CV joint applications. This grease can also be used when protection against extreme pressure is needed.

2 References

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

2.1 External Standards/Specifications.

ASTM D128	ASTM D972	ASTM D4048	JIS K2283
ASTM D217	ASTM D1743	ASTM D6184	
ASTM D445	ASTM D2266	ASTM E168	
ASTM D566	ASTM D2509	JIS K2220	

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 Physical Properties. See Table 1.

Table 1: Physical Properties

Properties	Values	Test Methods ^{Note 1}
Penetration Worked (60 strokes), 0.1 mm Cold, 6 h soak -40 °C, 0.1 mm	285 to 340 45 minimum	ASTM D217 or JIS K2220 5.3 ASTM D217 or JIS K2220 5.3 modified to include cold soak after 60 strokes, undisturbed penetration
Dropping Point, °C	190 minimum	ASTM D566 or JIS K2220 5.4
Oil Separation (24 h, 100 °C)	6% maximum	ASTM D6184 or JIS K2220 5.7
Evaporation (22 h, 99 °C)	1% maximum	ASTM D972 or JIS K2220 5.6B
Oxidation Stability, (1 h, 150 °C)	69 kPa maximum	JIS K2220 5.8
Copper Strip Corrosion, (1 h, 150 °C)	3b maximum	ASTM D4048
Low Temperature Torque (-30 °C)	0.98 Nm maximum starting	Japanese Industry Standard (JIS) K2220 5.14
Timken OK Load	5.44 kg minimum	ASTM D2509 or JIS K2220 5.16
Corrosion Prevention	Pass	ASTM D1743
4-Ball Wear (100 °C), scar diameter	1.00 mm maximum	ASTM D2266 modified as indicated
Thickener Type	Polyurea	ASTM D128 or ASTM E168
Texture	Smooth	Visual
Base Oil Viscosity mm ² /s (cSt) at 100 °C	12 minimum	ASTM D445 or JIS K2283

Note 1: For purposes of this specification, alternate test methods have been specified for several properties. Equivalency in test results between the two (2) methods has been determined for this material either through test method review or by actual test data generation. This should not be interpreted to imply that the indicated test methods are equivalent for all grease products against this or any other specifications.

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