



## **Grease, Mineral Oil and Polyurea Thickener**

### **1 Introduction**

**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.** Grease shall be a smooth homogeneous mixture of petroleum oil and a polyurea thickener. Additives to improve oxidation stability, rust inhibition, mechanical stability, and wear resistance may be included.

**1.2 Symbols.** Not applicable.

**1.3 Applicability.** Grease described in this specification is intended for use in Constant Velocity Joints (CVJ), half shafts or bearings.

**1.4 Remarks.** None.

### **2 References**

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

#### **2.1 External Standards/Specifications.**

|            |            |            |                  |
|------------|------------|------------|------------------|
| ASTM D88   | ASTM D2265 | ASTM D2596 | FED-STD-791-3005 |
| ASTM D217  | ASTM D2266 | ASTM D4048 | FED-STD-791-5309 |
| ASTM D972  | ASTM D2270 | ASTM D6184 | JIS K 2220       |
| ASTM D1743 | ASTM D2509 | DIN 51807  |                  |

#### **2.2 GM Standards/Specifications.**

GMW3059

#### **2.3 Additional References.**

- GM Part Numbers; 9985313, 9986102, 9986407, see Table 7

### **3 Test Preparation and Evaluation**

#### **3.1 Resources.**

**3.1.1 Facilities.** Contact GM Material Engineering for list of approved testing locations.

**3.1.1.1 Calibration.** The test facilities and equipment shall be in good working order and shall have a valid calibration label.

**3.1.1.2 Alternatives.** Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

**3.1.1.2.1** Contact GM Material Engineering before running at alternative facilities or with alternative equipment.

**3.1.2 Equipment.** Use equipment as part of the requirements of the applicable test in 2.1. For alternative equipment, contact GM Material Engineering fluids group.

**3.1.3 Test Vehicle/Test Piece.** Not applicable.

**3.1.4 Test Time.** Test timing should be agreed upon by GM material engineering and supplier. Testing should be completed in a reasonable amount of time for the applicable test in 2.1.

**3.1.5 Test Required Information.** Not applicable.

**3.1.6 Personnel/Skills.** Operator should be qualified to run the applicable test per the test method in 2.1.

**3.2 Preparation.** To be prepared per corresponding test method.

**3.3 Conditions.**

**3.3.1 Environmental Conditions.** Run test on the required condition in the test method. If alternative conditions are requested. Contact GM Material Engineering before running.

**3.3.2 Test Conditions.** Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

**3.4 Instructions.** Carry out as part of the requirements of the applicable test in 2.1.

**3.5 Data.** Not applicable.

**3.6 Safety.**

This Engineering Standard may involve safety requirements for hazardous materials, the method of operations and equipment. This standard does not propose to address all the safety issues associated with its use. It is the responsibility of the user of this standard to ensure compliance with all appropriate safety and health practices. This would include any specific training that may be required. The safety and health standards include site specific rules and procedures, company rules and procedures, and Government Standards. Contact shall be made with the appropriate site Safety and Health personnel for further direction and guidance in these matters.

**3.7 Documentation.** Samples of components or material released to this standard shall be tested for conformity with the requirements of this standard and approved by the responsible GM Department prior to the start of delivery of production level components or materials.

Any change to the component or material, e.g., design, function, properties, manufacturing process and/or location of manufacture requires a new release of the product. It is the sole responsibility of the supplier to provide the customer, unsolicited, with documentation of any change or modification to the product/process, and to apply for a new release.

If not otherwise agreed to, the entire verification test shall be repeated and documented by the supplier prior to start of delivery of the modified or changed product. In some cases, a shorter test can be agreed to between the responsible GM department and the supplier.

**3.7.1 Test Results.** See Section 4.

## 4 Requirements and Procedure

**4.1 Requirements on Test Specimens.** Test specimens should be conditioned based on the requirements in the applicable test method listed in 2.1.

**4.2** 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).

**4.3 General.** Grease type, performance level and consistency are defined in Table 1 thru Table 6. See Table 7 for details regarding Material Coding, e.g., 6BR2, 6WL2, etc.

**4.4 Material Requirements.** See Table 1 and Table 2.

**Table 1: Thickener Content (6BR2 Only)**

| Property | Requirement |
|----------|-------------|
| Polyurea | 8.2% ± 0.5% |