



Grease, Corrosion Resistant Calcium

1 Scope

1.1 Material Description. This specification describes the properties of a calcium complex grease that provides good lubricating properties in addition to effective corrosion prevention in severe conditions caused by salt water, salt air, or environmental or atmospheric chemicals.

1.2 Symbols. Not applicable.

1.3 Applicability. This grease provides good corrosion protection in severe conditions caused by salt water or other environmental chemicals.

2 References

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

2.1 External Standards/Specifications.

ASTM D128	ASTM D665B	ASTM D1831	ASTM D2596
ASTM D217	ASTM D1264	ASTM D2265	ASTM D3527
ASTM D445	ASTM D1743	ASTM D2266	ASTM D4048
ASTM D610	ASTM D1748	ASTM D2509	FTM 791C

2.2 GM Standards/Specifications.

GMW3059

2.3 Additional References.

TMC003 Material Safety Data Sheet guidance documents (available at www.gmsupplypower.com).

3 Requirements

See Table 1.

Table 1: Physical Properties

Properties	Test Values	Test Methods
Base Oil Viscosity	Report	ASTM D445
Thickener Type	Calcium Complex	ASTM D128 Supplementary Method
Penetration, worked, 0.1 mm	290 to 320	ASTM D217
Cold Penetration, 0.1 mm (worked 60 × prior to cold soak of 6 h at -18 °C, undisturbed penetration after soak, brass cone at room temperature)	175 Minimum	ASTM D217, Modified as indicated
Dropping Point, degrees Celsius (°C)	260 Minimum	ASTM D2265
Oil Separation, percent (%) (after 6 h at 100 °C)	4.0 Maximum	Federal Test Method (FTM) 791C, Method 321.3

Properties	Test Values	Test Methods
Copper Strip Corrosion, 1 h at 150 °C	Number kilograms (kg) Rating Maximum	ASTM D4048
Texture	Smooth	Not applicable
4-Ball Extreme Pressure Performance,	-	ASTM D2596
Load Wear Index	20 Minimum	-
Weld Point, N/force	1961Mminimum	-
4-Ball Wear Protection, Scar Diameter, millimeters (mm)	0.65 Maximum	ASTM D2266
Timken Okay. Load, kilograms (kg)	11 Minimum	ASTM D2509
Wheel Bearing Life, hours	80 Minimum	ASTM D3527
Roll Stability, percent (%) Change	10 Maximum	ASTM D1831
Water Washout at +79.4 °C, percent (%)	15 Maximum	ASTM D1264
Rust Protection	Pass	ASTM D1743
Rust Protection, Modified to use 5% Synthetic Sea Water per ASTM D665B	Pass	ASTM D1743 Modified as indicated
Rust Protection	Pass	ASTM D1748
Salt Spray Corrosion Resistance, 1000 h Test Duration	Pass	ASTM D610 Modified as indicated

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.