

**MOLYBDENUM DISULFIDE,
LITHIUM SOAP, AND POLYETHYLENE IN GREASES****Application**

This procedure is used to determine the molybdenum disulfide, lithium soap, and polyethylene content in greases that are generally used for wheel bearings. Refer to FLTM AJ 150-02 when only molybdenum disulfide and/or polyethylene content must be determined and the grease contains no other solid lubricants or fillers.

Apparatus Required**Analytical Balance**

Precision +/- 0.1 mg

Extraction Apparatus, Soxhlet, Ground Glass Joint

Includes flask, extraction tube and Allihn Condenser

Tubing

6.4 mm I.D.

Flask

250 mL

Tube and Flask

Joint 24/40

Thimbles, Extraction Cellulose

Single thickness, 33 x 80 mm

Hot Plate

Variable temperature

Tall Form Beaker

300 or 400 mL

Separatory Funnel, Squibb

500 mL; ground glass stopper No. 19 or equivalent

Weighing Bottle

Date	Action	Revisions
2001 01 16	Revised	Editorial – no technical change A. Cockman
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Mortar and Pestle

Crucible, Gooch, Porcelain

(Coors Series 27007) 35 mL capacity

Boiling Chips

"Boileezers" B-365 or equivalent

Laboratory Refrigerator

Capable of maintaining 7 +/- 2 °C

The above apparatus may be obtained at any reputable laboratory equipment supply house.

Materials Required

Glass Microfiber Filters

Whatman 934-AH, 2.4 cm

Filter Paper

Whatman No. 42 and No. 541 or equivalent.

pH Test Paper

Hydron pH test paper or equivalent.

Petroleum Ether or N-Hexane

Reagent grade. Caution: Low flash point.

30 % Glacial Acetic Acid/70 % Toluene Solution

Reagent grade. Caution: Corrosive

Ammonium Sulfide (46-52 %)

Technical grade.

Nitric Acid

Concentrated (69.5 %). Caution: Corrosive

Sulfuric Acid

Concentrated (95 %). Caution: Corrosive

Isopropyl Alcohol

Reagent grade. Caution: Low flash point