

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS BT-36
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Grease Extraction		CURRENT REV No.: 1802
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<i>This specification may involve hazardous materials, equipment, and procedures. This specification does not purport to address all of the safety issues associated with its use. The user is responsible to consult appropriate safety and health practices and to determine the applicability of regulatory limits prior to use.</i>		

1.0 SCOPE

This method covers a procedure for separating the petroleum ether insoluble components from a grease.

2.0 APPARATUS

- 2.1 Balance with a sensitivity of 0.1 gram.
- 2.2 Beaker, 800 milliliters.
- 2.3 Beaker, 300 milliliters (tall form).
- 2.4 Round bottom flask, 1000 milliliters, s 24/40
- 2.5 Soxhlet Extraction apparatus, large; top s 55/50, bottom s 24/40
- 2.6 Extraction condenser, large s 55/50
- 2.7 Glass-Col heater to fit 1000 milliliter round bottom flask.
- 2.8 Graduated cylinder, 500 milliliters.
- 2.9 Stirrer, magnetic.
- 2.10 Oven capable of maintaining $210 \pm 5^{\circ}\text{F}$ ($99 \pm 3^{\circ}\text{C}$).

3.0 MATERIAL

- 3.1 Petroleum ether, 30-60° C, ACS.
- 3.2 Whatman Extraction Thimble, 43 x 123 mm.

4.0 PROCEDURE

- 4.1 Set up apparatus as in Figure above.
- 4.2 Weight out 100 ± 5 grams of sample into a tared extraction thimble.
- 4.3 Add 400 milliliters of petroleum ether to the flask and reflux at a rate such that the maximum extractant level in the thimble is between the top of the grease and the top of the thimble. Stir continually.
- 4.4 Extract for four hours after the petroleum ether in the extraction tube appears colorless or unchanged.
- 4.5 Pour the contents of the flask and extraction tube and two 25 milliliter washings of each into an 800 milliliter beaker. Carefully evaporate off the petroleum ether on a steam plate in a hood and save the remaining fluid for further tests.

CAUTION: Extra care should be taken as petroleum ether is extremely flammable.

- 4.6 Place the thimble in a 300 milliliter beaker and carefully evaporate on steam bath in hood until all traces of petroleum ether have disappeared.
- 4.7 Dry the thimble in an oven at $210 \pm 5^{\circ}\text{F}$ ($99 \pm 3^{\circ}\text{C}$) for one hour. Cool and weigh to nearest 0.1 gram.



Soxhlet Extraction Apparatus

5.0 REPORT

Calculation: % Petroleum ether insoluble = $\frac{\text{Weight of petroleum insoluble}}{\text{Weight of sample}} \times 100$

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Revision History

Revision Level	Change	Approved by	Date Approved
1802	Converted to MPAPS	R. Goluch	2/13/2018

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