

NAVISTAR, INC.		
Material, Parts, and Process Specifications (MPAPS)		NUMBER: MPAPS BT-34
		Former Designation: CEMS BT-34
TITLE: Oil Content Test Adapted from ORD JR-OME PD #115 dated 21 November 1956.		CURRENT REV No.: 1412
		DATE: Dec. 2014
WRITTEN/EDITED BY: Materials Engineering	APPROVED BY: Materials Engineering	SUPERSEDES: CEMS BT-34 - August 2009
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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>		
Change Notice: Update to MPAPS format.		

1.0 SCOPE

This method covers a procedure for determining the oil content of a material such as engine cooling system stopleak compound.

2.0 APPARATUS

- 2.1 Mortar and pestle
- 2.2 Steam bath
- 2.3 Analytical balance with a sensitivity of 0.1 milligram
- 2.4 Erlenmeyer flask, 500 milliliters
- 2.5 Beaker, 250 milliliters
- 2.6 Filter funnel
- 2.7 Desiccator
- 2.8 Gravity-convection oven capable of maintaining 212 ± 2 degrees Fahrenheit
- 2.9 Graduated cylinder, 50 milliliters

3.0 MATERIAL

- 3.1 Filter paper, coarse
- 3.2 Ethyl ether, ACS
- 3.3 Trichloroethylene, ACS

4.0 PROCEDURE

- 4.1 Place approximately 10 grams of samples, weighed to the nearest 0.01 gram, into a 500 milliliter Erlenmeyer flask.
- 4.2 Add 40 milliliters of trichloroethylene and place the flask on the steam bath for 30 minutes.
- 4.3 Remove from the steam bath and cool to room temperature.
- 4.4 Filter the contents through a coarse filter paper collecting the filtrate in the 250 milliliter beaker which has been previously weighed to the nearest 0.1 milligram.
- 4.5 Wash the flask three times with 10 milliliter portions of trichloroethylene, passing the washings through the filter into the tared beaker.
- 4.6 Wash the oil from the filter paper using trichloroethylene, collecting the washing in the tared beaker.
- 4.7 Place the beaker on a steam bath and evaporate the trichloroethylene.

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4.8 Cool the beaker and add 10 milliliters of ethyl ether. Mix and evaporate the ether on the steam bath.

4.9 Place the beaker into a gravity-convection oven maintained at a temperature of $212 \pm 2^\circ \text{F}$ for 30 minutes.

4.10 At the end of the 30-minute heating period remove the beaker and cool to room temperature in a desiccator.

4.11 Weigh the beaker and contents to the nearest 0.1 milligram.

CAUTION: Perform the evaporations in a hood as vapors of trichloroethylene are toxic and ethyl ether vapors are highly flammable. Do not use open flames.

5.0 REPORT

Calculate the oil content as follows:

$$\% \text{ Oil} = \frac{(B-A)}{S} 100$$

where

A = weight of the empty beaker in grams

B = weight of the beaker and oil in grams

C = weight of sample used in grams

5.1 Report the average of duplicate determinations as "Oil content, % by weight".

6.0 TECHNICAL INFORMATION

For further information related to the technical content of this specification, contact:	Suppliers may purchase controlled copies of this specification by contacting:
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