Ford Motor Company

FORD LABORATORY TEST METHOD AK 117-01

QUANTITATIVE ANALYSIS OF SOLVENT CONTENT OF CLEANERS

Application

This test method is used to determine the percent solvent in a cleaner.

The procedure is intended to be a simplified version of the applicable ASTM Standard (e.g. D 501 or D 800) as well as being more appropriate for dealing with the many formulations of cleaners that are commonly encountered in plant operations.

Apparatus Required

Analytical Balance
Precision +/- 0.1 mg

Distillation Flask

Reflux Condenser

Solvent Collection Trap
Refer to ASTM D 322

Pycnometer

Hot Plate

Glass Beads or Pumice Stone

Graduated Cylinder
250 mL

The above apparatus is available from any reputable laboratory equipment supply house.

Materials Required

Distilled or Deionized Water
20 micromhos/cm at 25 °C maximum conductivity (ASTM D 1125)

Date	Action	Revisions
2001 01 22	Revised	Editorial – no technical change A. Cockman
1990 04 26		

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Potassium Carbonate
Reagent grade

Strontium Chloride or Silicone
CAUTION: Strontium chloride is toxic.

Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 °C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

Method 1 - For Water-immiscible solvents

1. Add a 10 g sample of the material to a distillation flask.

2. Add 200 mL of distilled water to the flask.

3. Assemble the apparatus which consists of:

   (a) Distillation flask
   (b) Reflux condenser
   (c) Solvent collection trap similar to ASTM D 322.

   This trap serves to collect and measure the solvent and return the water to the distilling flask.

4. Starting with the solution at 23 +/- 2 °C, heat the distillation flask so that the refluxing starts 10 minutes after heat has been applied.

5. Take a reading of the amount collected in the trap 2 h from the start of refluxing.

6. Make additional readings at the end of each subsequent 1 h period until the analysis is complete, that is, when the volume of solvent does not increase by more than 0.1 mL in any 2 consecutive 1 h periods.

7. Discontinue heating.

8. When the analysis is complete, allow the distillate to stand for at least 1 h until it settles clear and cools to 23 +/- 2 °C.

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