

EVAPORATION RATE OF SOLVENTS**Application**

This method is used to determine the evaporation rate of solvents and diluents.

The evaporation rate of a solvent is defined as the rate at which it will evaporate, at a temperature below its boiling point, when placed in an atmosphere of specified temperature and humidity.

Apparatus and Materials Required**Filter Paper**

Uniform transparency, not hardened, even and of uniform density. Size approx 100 x 150 mm, e.g., Schleicher & Schüll 598, Whatman No. 91, or equivalent.

Diethylether

Reference solvent.

Pipette**Petri Dish**

Approx 80 mm dia.

Stop Watch**Procedure**

1. The test must be performed in a draught-free room at a temperature 20 ± 2 °C and 65 ± 3 % relative humidity. Ensure that all test equipment and the material under test have attained this temperature. Use a transparent screen for close observation to avoid heat (of breath, etc.) affecting the test.
2. Lay the filter paper across the top of the petri dish and using the pipette, drop 0.3 mL of the material under test on the filter paper within 5 s and start the stop watch at the last drop of material. The distance between pipette and paper must be 10 mm.

Date	Action	Revisions
2001 03 13	Revised	Editorial – no technical change A. Cockman
1994 02 28		

Printed copies are uncontrolled

Page 1 of 2

Copyright © 2001, Ford Global Technologies, Inc.

3. Support the filter paper in a vertical position and allow to dry.
4. Stop the watch when by visual examination the filter paper appears to be dry.
5. The test must be run five times with alternate runs of the material under test and the referenced standard solvent (Diethylether) using a new filter paper for each test.

Evaluation

Calculate the average evaporation rate according to the following formula:

$$\text{Evaporation Rate} = \frac{\text{Average Evaporation Time of the Material Under Test}}{\text{Average Evaporation Time of the Reference Solvent}}$$

Note:

1. For evaporation rates below 15 results should not differ by more than +/-5 % of the average.
2. For high evaporation rates better results will be obtained if tests are run simultaneously with butyl acetate 98/100, evaporation rate 14, or ethylene glycol acetate, evaporation rate 60, for comparison.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.