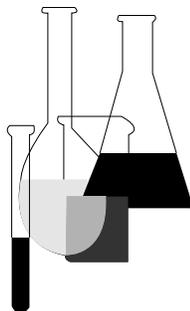




Product Properties Test Guidelines

OPPTS 830.6321 Dielectric Breakdown Voltage



INTRODUCTION

This guideline is one of a series of test guidelines that have been developed by the Office of Prevention, Pesticides and Toxic Substances, United States Environmental Protection Agency for use in the testing of pesticides and toxic substances, and the development of test data that must be submitted to the Agency for review under Federal regulations.

The Office of Prevention, Pesticides and Toxic Substances (OPPTS) has developed this guideline through a process of harmonization that blended the testing guidance and requirements that existed in the Office of Pollution Prevention and Toxics (OPPT) and appeared in Title 40, Chapter I, Subchapter R of the Code of Federal Regulations (CFR), the Office of Pesticide Programs (OPP) which appeared in publications of the National Technical Information Service (NTIS) and the guidelines published by the Organization for Economic Cooperation and Development (OECD).

The purpose of harmonizing these guidelines into a single set of OPPTS guidelines is to minimize variations among the testing procedures that must be performed to meet the data requirements of the U. S. Environmental Protection Agency under the Toxic Substances Control Act (15 U.S.C. 2601) and the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. 136, *et seq.*).

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OPPTS 830.6321 Dielectric breakdown voltage.

(a) **Scope**—(1) **Applicability.** This guideline is intended to meet testing requirements of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 U.S.C. 136, *et seq.*).

(2) **Background.** The source material used in developing this harmonized OPPTS test guideline is OPP guideline 63–21 Dielectric breakdown voltage (Pesticide Assessment Guidelines, Subdivision D: Product Chemistry, EPA Report 540/9–82–018, October 1982) and 40 CFR 158.190 Physical and chemical characteristics.

(b) **Test method**—(1) **Objective.** The objective of this test is to determine the potential for hazard when the pesticide product is used on or in the vicinity of electrical equipment and electrical conduits. The dielectric breakdown voltage of an insulating liquid is of importance as a measure of the liquid's ability to withstand electric stress without failure. Data is required when the end-use product is a nonconductant liquid and is to be used around electrical equipment.

(2) **Test details.** (i) The Agency recommends the method described in ASTM D–877, “Standard Test Method for Dielectric Breakdown Voltage for Insulating Liquids Using Disk Electrodes” (see paragraph (d) of this guideline). Other methods may be substituted as appropriate for the particular properties of the pesticide to be tested. If an alternative method is used, it is recommended that the registrant consult with the Agency prior to adopting the test method.

(ii) The test method covers a referee and a routine procedure for determining the dielectric breakdown voltage of insulating liquids.

(iii) Test procedure. (A) The test liquid is poured into a cup with rigidly mounted brass electrodes connected to an appropriate power source with automatic circuit-interrupting equipment. Voltage is incrementally increased until the circuit-interrupting equipment is activated and the breakdown voltage is recorded.

(B) For referee testing, one breakdown shall be made on each of five successive fillings of the cup. If the five values meet the defined criterion for statistical consistency, their average value will be reported as the breakdown voltage. If the five values do not meet the criterion, one breakdown on each of five additional cup fillings will be made and the average of the ten trials will be reported as the breakdown voltage of the sample.

(C) For routine testing, five breakdowns may be made on one cup filling with 1 min intervals between breakdowns. The average of these values will be considered the breakdown voltage of the sample if the criterion for statistical consistency is met. If the criterion is not met, the cup will be refilled with a new sample and five breakdowns will be made

on the new sample. The average of the ten breakdowns will be considered as the breakdown voltage.

(D) The applications, apparatus, sampling procedures, and criterion for statistical consistency are described in the ASTM method (see paragraph (d) of this guideline).

(c) **Reporting.** (1) Report the data on dielectric breakdown voltage by following the instructions in paragraph (d) of this guideline or other Agency-approved test.

(2) Any methods used to characterize the physical properties of a pesticide shall be referenced or described in the application for registration. If the methods used are listed in paragraph (d) of this guideline, reference to the method will suffice. If other methods are used, copies of such methods must be submitted with the application.

(3) References that denote “ASTM” refer to standardized methods published by the American Society for Testing and Materials. Philadelphia, PA.

(4) The applicant shall submit his own statistical evaluation of the precision and accuracy of these measurements (e.g., standard deviations or confidence intervals) when appropriate.

(d) **References.** The following references should be consulted for additional background material on this test guideline.

(1) American Society for Testing and Materials, “Standard Test Method for Dielectric Breakdown Voltage of Insulating Liquids Using Disk Electrodes, D-877,” ASTM, Philadelphia, PA (latest annual index).

(2) [Reserved]