



AMERICAN NATIONAL
STANDARD

ANSI/ASTM D 568 - 77

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Standard Test Method for RATE OF BURNING AND/OR EXTENT AND TIME OF BURNING OF FLEXIBLE PLASTICS IN A VERTICAL POSITION¹

This Standard is issued under the fixed designation D 568; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval.

This method has been approved for use by agencies of the Department of Defense to replace method 2022 of Federal Test Method Standard 406, and for listing in the DoD Index of Specifications and Standards.

1. Scope

1.1 This method covers a small-scale laboratory screening procedure for comparing the relative rate of burning and/or extent and time of burning of plastics in the form of flexible, thin sheets or films, tested in the vertical position. This method should be used to establish relative burning characteristics of plastic materials and should not be used as a fire hazard test method.

1.2 **Cautions**—During the course of combustion, gases or vapors, or both, are evolved which may be hazardous to personnel. Adequate precautions should be taken to protect the operator.

NOTE 1—Method D 635, Test for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position², Method D 1433, Test for Rate of Burning and/or Extent and Time of Burning of Flexible Thin Plastic Sheet Supported on a 45-deg Incline², and Method D 2863, for Measuring the Minimum Oxygen Concentration to Support Candle-like Combustion of Plastics (Oxygen Index)², may provide additional related information on the burning characteristics of plastics in sheet form.

1.3 *This standard should be used to measure and describe the properties of materials, products, or systems in response to heat and flame under controlled laboratory conditions and should not be used for the description or appraisal of the fire hazard of materials, products, or systems under actual fire conditions.*³

NOTE 2—The values stated in SI units are to be regarded as the standard.

2. Applicable Documents

2.1 ASTM Standards:

D 374 Tests for Thickness of Solid Electrical

Insulation²

D 618 Conditioning Plastics and Electrical Insulating Materials for Testing²

3. Summary of Method

3.1 A specimen of plastic, of standard length and width, the thickness of the sample as furnished, is suspended vertically and exposed to a gas flame at its lower end. Time and extent of burning, are measured and reported if the specimen does not burn 38 cm. An average burning rate is reported if the specimen burns to the 38-cm mark.

4. Significance

4.1 This method provides a means of comparing the rate of burning and/or extent and time of burning of plastics in the form of flexible thin sheet. *Test data should only be compared with data for a material of comparable thickness.* Useful information may be obtained from a plot of burning rate versus thickness. Correlation with burning characteristics under actual use conditions is not implied. Excessive shrinkage of specimens during test may invalidate the results.

4.2 This method is not intended to be a criterion for fire hazard. The fire hazard

¹ This method is under the jurisdiction of Committee D-20 on Plastics and is the direct responsibility of Subcommittee D20.30 on Thermal Properties.

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² *Annual Book of ASTM Standards*, Part 35.

³ This caveat has been placed in the standard in accordance with a policy established by the ASTM Board of Directors in September 1973. This caveat will remain in this standard until Committee E-39 on Fire Hazard Standards has approved it as a fire hazard standard.