



AMERICAN NATIONAL
STANDARD

ANSI/ASTM D 3243 - 77

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Standard Test Methods for FLASH POINT OF AVIATION TURBINE FUELS BY SETAFLASH CLOSED TESTER¹

This Standard is issued under the fixed designation D 3243; 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.

1. Scope

1.1 These methods describe a procedure for the determination of the flash point, by a Setaflash® Tester, of aviation turbine fuels. The procedure may be used to determine whether a fuel will or will not flash at a specified temperature (flash/no flash) (Method A), or the actual flash point temperature (Method B). The presence of volatile diluents may also be determined by this procedure (Method C).

1.2 Results using the specified apparatus have been shown to be comparable in magnitude to those obtained by using the Tag Closed-Cup procedure as described in Method D 56.

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.*

NOTE 1 The values stated in SI units are to be regarded as the standard.

2. Applicable Documents

2.1 ASTM Standards:

D 56 Test for Flash Point by Tag Closed Tester²

E 1 Specification for ASTM Thermometers³

3. Summary of Methods

3.1 *Method A, Flash/No Flash Test*—A 2-ml sample is introduced, by means of a preset syringe, through a self-sealing filler port, into the tightly closed sample cup which has been

equilibrated at the specification or target temperature. After 1 min, a test flame is introduced into the sample cup and an observation made as to whether a flash occurred. Results are reported as "flash" or as "no flash" at the specific temperature of the test.

3.2 *Method B, Finite (or Actual) Flash Point*—A 2-ml sample is introduced, by means of a preset syringe, through a self-sealing filler port, into the sample cup which has been equilibrated at a temperature 6°C (10°F) below the expected flash point. After 1 min, the test flame is introduced into the cup. If no flash is observed the temperature is gradually increased and the test flame reintroduced every 2°C (3°F) until a flash is obtained. The temperature at which the sample flashed is noted, the sample cup and lid and shutter are cleaned and the temperature of the cup equilibrated 3°C (5°F) below the previously observed flash point. A fresh portion of the sample is injected and after 1 min, the test flame is introduced into the sample cup. If no flash is observed the temperature is gradually increased and the test flame reintroduced every 0.5°C (1°F). The temperature at which a flash occurs is noted. The sample cup and lid are cleaned and the temperature is set to equilibrium 1°C (2°F) below the last obtained flash point. The test procedure is repeated at the equilibrated temperature and at a 0.5°C (1°F)

¹ These methods are under the jurisdiction of ASTM Committee D-2 on Petroleum Products and Lubricants. Current edition approved Aug. 26, 1977. Published October 1977. Originally published as D 3243 - 73 T. Last previous edition D 3243 - 76.

² Annual Book of ASTM Standards, Parts 23 and 29.

³ Annual Book of ASTM Standards, Parts 25 and 44.