



Designation: D2764 – 99 (Reapproved 2004)<sup>e1</sup>

# Standard Test Method for Dimethylformamide-Insoluble (DMF-I) Content of Tar and Pitch<sup>1</sup>

This standard is issued under the fixed designation D2764; 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. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

<sup>e1</sup> NOTE—Warning notes moved into the text editorially in November 2004.

## 1. Scope

1.1 This test method covers the determination of the dimethylformamide-insoluble matter (DMF-I) in tar and pitch.

1.2 Since this test method is empirical, strict adherence to all details of the procedure is necessary.

1.3 The values stated in inch-pound units are to be regarded as the standard.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* For specific precautionary information, see Section 7.

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

D329 Specification for Acetone

D370 Practice for Dehydration of Oil-Type Preservatives

D4072 Test Method for Toluene-Insoluble (TI) Content of Tar and Pitch

D4296 Practice for Sampling Pitch

E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves

## 3. Summary of Test Method

3.1 A sample is digested in hot DMF and filtered. Any insoluble matter is washed, dried, and weighed.

## 4. Significance and Use

4.1 This test method is useful in evaluating and characterizing tars and pitches and as one element in establishing the uniformity of shipments or sources of supply. It is a rapid and

reasonably accurate measure of the toluene insoluble (TI) content of tar and pitch Test Method D4072.

## 5. Apparatus

5.1 *Filtering Crucible*, porcelain, with fine-porosity bottom, 30 to 40-mL capacity, high form, maximum pore diameter 7 $\mu$ m.<sup>3</sup>

5.2 *Filter Apparatus*—Filter flask and tube with crucible adapter.

5.3 *Sieves*, U.S. Standard 600- $\mu$ m (No. 30) and 250- $\mu$ m (No. 60), conforming to Specification E11.

5.4 *Water Bath*, maintained at 203 to 212°F (95 to 100°C).

## 6. Reagents and Materials

6.1 *Dimethylformamide*, reagent grade, boiling range 4°F (2°C) including 307°F (153°C). Store over a suitable desiccant. Decant immediately before use. If necessary, filter through a plug of glass wool or absorbent cotton until optically clear.

6.2 *Acetone*, meeting Specification D329. (**Warning**—Flammable. Health hazard.)

6.3 *Concentrated Hydrochloric Acid*.

6.4 *Celite Analytical Filter Aid (CAFA)*—Dry to constant weight at 22°F (105°C) and store in tightly stoppered container.

NOTE 1—Do not use any other grade of filtering medium because porosities differ.

## 7. Hazards

7.1 Fumes of the solvents should be removed by means of proper hoods from all working areas. The working area should be kept free of sparks and flames. DMF fumes should not be inhaled, and prolonged contact of DMF with the skin should be avoided.

7.2 Observe proper laboratory procedures for handling and diluting hydrochloric acid.

## 8. Bulk Sampling

8.1 Samples from shipments shall be taken in accordance with Practice D4296 and shall be free of foreign substances.

<sup>3</sup> Selas Grade 01, Size No. FC30 or FC40, or equivalent, has been found satisfactory for this purpose.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.05 on Properties of Fuels, Petroleum Coke and Carbon Material.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.