

# **Manual of Petroleum Measurement Standards Chapter 10—Sediment and Water**

## **Section 8—Standard Test Method for Sediment in Crude Oil by Membrane Filtration**

SECOND EDITION, NOVEMBER 2005

REAFFIRMED, MARCH 2010



AMERICAN PETROLEUM INSTITUTE



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# CONTENTS

	Page
1. SCOPE .....	1
2. REFERENCED DOCUMENTS .....	1
2.1 ASTM Standards .....	1
2.2 API Standards .....	1
2.3 ISO Standard .....	1
3. SUMMARY OF TEST METHOD .....	1
4. SIGNIFICANCE AND USE .....	1
5. APPARATUS .....	2
6. REAGENTS .....	2
7. SAMPLING, TEST SPECIMENS .....	2
8. PROCEDURE .....	3
9. CALCULATION .....	3
10. REPORT .....	3
11. PRECISION AND BIAS .....	4
12. KEYWORDS .....	4
ANNEX A1. SAFETY PRECAUTIONS TO AVOID STATIC DISCHARGE .....	4
SUMMARY OF CHANGES .....	5
Figure	
1 Membrane Filtration Assembly .....	2
Table	
1 Precision Intervals .....	4





## Standard Test Method for Sediment in Crude Oil by Membrane Filtration<sup>1</sup>

This standard is issued under the fixed designation D 4807; 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.

*This standard has been approved for use by agencies of the Department of Defense.*

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<sup>ε1</sup> NOTE—Footnote 5 was updated editorially in August 2005.

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### 1. Scope\*

1.1 This test method covers the determination of sediment in crude oils by membrane filtration. This test method has been validated for crude oils with sediments up to approximately 0.15 mass %.

1.2 The accepted unit of measure for this test method is mass %, but an equation to convert to volume % is provided (see Note 6).

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

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 warning statements, see 6.1 and Annex A1.

### 2. Referenced Documents

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

- D 473 Test Method for Sediment in Crude Oils and Fuel Oils by the Extraction Method (API *MPMS Chapter 10.1*)
- D 4057 Practice for Manual Sampling of Petroleum and Petroleum Products (API *MPMS Chapter 8.1*)

D 4177 Practice for Automatic Sampling of Petroleum and Petroleum Products (API *MPMS Chapter 8.2*)

D 4865 Guide for Generation and Dissipation of Static Electricity in Petroleum Fuel Systems

D 5854 Practice for Mixing and Handling of Liquid Samples of Petroleum and Petroleum Products (API *MPMS Chapter 8.3*)

#### 2.2 API Standards:<sup>3</sup>

*MPMS Chapter 8.1* Manual Sampling of Petroleum and Petroleum Products (ASTM Practice D 4057)

*MPMS Chapter 8.2* Automatic Sampling of Petroleum and Petroleum Products (ASTM Practice D 4177)

*MPMS Chapter 8.3* Mixing and Handling of Liquid Samples of Petroleum and Petroleum Products (ASTM Practice D 5854)

*MPMS Chapter 10.1* Test Method for Sediment in Crude Oils and Fuel Oils by the Extraction Method (ASTM Test Method D 473)

#### 2.3 ISO Standard:<sup>4</sup>

ISO 5272:1979 Toluene for Industrial Use—Specifications

### 3. Summary of Test Method

3.1 A portion of a representative crude oil sample is dissolved in hot toluene and filtered under vacuum through a 0.45- $\mu$ m porosity membrane filter. The filter with residue is washed, dried, and weighed to give the final result.

### 4. Significance and Use

4.1 A knowledge of the sediment content of crude oil is important both in refinery operations and in crude oil commerce.

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<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D02 on Petroleum Products and Lubricants and the API Committee on Petroleum Measurement, and is the direct responsibility of Subcommittee D02.02/COMQ, the joint ASTM-API committee on Static Petroleum Measurement. This test method has been approved by the sponsoring committee and accepted by the Cooperating Societies in accordance with established procedures.

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

<sup>3</sup> Published as *Manual of Petroleum Measurement Standards*. Available from the American Petroleum Institute (API), 1220 L St., NW, Washington DC 20005.

<sup>4</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.