



Designation: D 3325 – 90 (Reapproved 1996)^{ε1}

Standard Practice for Preservation of Waterborne Oil Samples¹

This standard is issued under the fixed designation D 3325; 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 (ε) indicates an editorial change since the last revision or reapproval.

^{ε1} NOTE—Keywords were added editorially in December 1996.

1. Scope *

1.1 This practice covers the preservation of waterborne oil samples from the time of collection to the time of analysis. Information is provided to ensure sample integrity and to avoid contamination and to minimize microbial degradation.

1.2 The practice is for controlled field or laboratory conditions and specifies thorough preparation of equipment and precise operation. Where these details must be compromised in a field emergency, nonstandard simplifications are recommended that will minimize or eliminate consequent errors.

NOTE 1—Procedures for the analysis of oil spill samples are Practices D 3326, D 3415, D 3650, and D 4489, and Test Methods D 3327, D 3328, D 3414, and D 5037. A guide to the use of ASTM test methods for the analysis of oil spill samples is found in Practice D 3415.

1.3 *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 a specific hazard statement, see Note 3.

2. Referenced Documents

2.1 ASTM Standards:

- D 1129 Terminology Relating to Water²
- D 3326 Practices for Preparation of Samples for Identification of Waterborne Oils³
- D 3327 Test Methods for Analysis of Selected Elements in Waterborne Oils⁴
- D 3328 Test Methods for Comparison of Waterborne Petroleum Oils by Gas Chromatography³
- D 3414 Test Method for Comparison of Waterborne Petroleum Oils by Infrared Spectroscopy³
- D 3415 Practice for Identification of Waterborne Oils³
- D 3650 Test Method for Comparison of Waterborne Petro-

- leum Oils by Fluorescence Analysis³
- D 4489 Practices for Sampling Waterborne Oils³
- D 5037 Test Method for Comparison of Waterborne Petroleum Oils by High Performance Liquid Chromatography³

3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice, refer to Terminology D 1129.

4. Summary of Practice

4.1 Special types of sample containers and shipping containers are recommended. Samples may be of several types: tar balls, collected oil, oil-water mixtures, emulsions, and oil and water on collecting devices such as silanized glass cloth, TFE-fluorocarbon polymer, or other materials. Instructions are given for the care of samples to minimize changes due to autoxidation and microbial attack between the time of sampling and the time of analysis. Services available for transportation of samples are described.

5. Apparatus

5.1 *Sample Containers*—Borosilicate glass containers that have been thoroughly cleaned are preferable. All glass containers, new or used, must be thoroughly cleaned and washed prior to use. The cleaning steps consist of an initial wash with a warm aqueous detergent mixture followed by six hot tap water rinses, two rinses with reagent water, a rinse with reagent-grade acetone, and a final rinse with a solvent such as pentane, hexane, cyclohexane, dichloromethane, or chloroform followed by drying in a clean oven at 105°C or hotter for 30 min. If the glassware requires cleaning under field conditions, it should be washed with warm aqueous detergent followed by extensive water rinsing. A solvent rinse with acetone should be made, if possible, followed by lengthy air drying to remove residual solvent.

NOTE 2—Hot reagent water rinses are advisable where hot tap water might reintroduce contamination.

NOTE 3—**Caution:** For safety reasons, the use of pentane, hexane, or cyclohexane is recommended over use of dichloromethane or carbon tetrachloride.

5.1.1 Plastic containers are not acceptable since volatile hydrocarbons diffuse readily through many commercial plastic

¹ This practice is under the jurisdiction of ASTM Committee D19 on Water and is the direct responsibility of Subcommittee D19.06 on Methods for Analysis for Organic Substances in Water.

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² *Annual Book of ASTM Standards*, Vol 11.01.

³ *Annual Book of ASTM Standards*, Vol 11.02.

⁴ Discontinued; see 1993 *Annual Book of ASTM Standards*, Vol 11.02.

*A Summary of Changes section appears at the end of this standard.