



# Standard Practice for Preservation of Waterborne Oil Samples<sup>1</sup>

This standard is issued under the fixed designation D3325; 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.

## 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 [D3326](#), [D3415](#), [D3650](#), and [D4489](#), and Test Methods [D3327](#), [D3328](#), and [D3414](#). A guide to the use of ASTM test methods for the analysis of oil spill samples is found in Practice [D3415](#).

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.*

## 2. Referenced Documents

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

[D1129](#) Terminology Relating to Water

[D3326](#) Practice for Preparation of Samples for Identification of Waterborne Oils

[D3327](#) Method for Analysis of Selected Elements in Waterborne Oils<sup>3</sup>

[D3328](#) Test Methods for Comparison of Waterborne Petroleum Oils by Gas Chromatography

[D3414](#) Test Method for Comparison of Waterborne Petroleum Oils by Infrared Spectroscopy

[D3415](#) Practice for Identification of Waterborne Oils

<sup>1</sup> 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.

Current edition approved Feb. 15, 2013. Published March 2013. Originally approved in 1974. Last previous edition approved in 2002 as D3325 – 90 (2006). DOI: 10.1520/D3325-90R13.

<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.

<sup>3</sup> Withdrawn.

[D3650](#) Test Method for Comparison of Waterborne Petroleum Oils By Fluorescence Analysis  
[D4489](#) Practices for Sampling of Waterborne Oils

## 3. Terminology

3.1 *Definitions*—For definitions of terms used in this practice, refer to Terminology [D1129](#).

## 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. (**Warning**—For safety reasons, the use of pentane, hexane, or cyclohexane is recommended over use of dichloromethane or carbon tetrachloride. )

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

5.1.1 Plastic containers are not acceptable since volatile hydrocarbons diffuse readily through many commercial plastic containers or may be absorbed into the plastic. In addition, the plasticizer may dissolve in the sample causing misleading results.

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