



Standard Practice for Mixing and Handling of Liquid Samples of Petroleum and Petroleum Products¹

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1. Scope

1.1 This practice covers the handling, mixing, and conditioning procedures that are required to ensure that a representative sample of the liquid petroleum or petroleum product is delivered from the primary sample container/receiver into the analytical test apparatus or into intermediate containers.

1.2 Annex A2 covers acceptance test criteria for power mixer and sample container combinations, while Annex A3 and Annex A4 detail acceptance tests for mixing systems. Appendix X1 is a guide for selecting sample containers.

1.3 For sampling procedures, refer to Practices D 4057 and D 4177. Practice D 5842 covers sampling and handling of light fuels for volatility measurement.

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.*

2. Referenced Documents

2.1 ASTM Standards:

- D 2892 Test Method for Distillation of Crude Petroleum (15-Theoretical Plate Column)²
- D 4057 Practice for Manual Sampling of Petroleum and Petroleum Products³
- D 4177 Practice for Automatic Sampling of Petroleum and Petroleum Products³
- D 4306 Practice for Aviation Fuel Sample Containers for Tests Affected by Trace Contamination³
- D 4928 Test Method for Water in Crude Oils by Coulometric Karl Fischer Titration³
- D 5842 Practice for Sampling and Handling of Fuels for

Volatility Measurement⁴

2.2 API Documents:⁵

- Manual of Petroleum Measurement Standards, Chapter 10, Sediment and Water (all sections)
- Publication 2003, Protection Against Ignition Arising Out of Static, Lighting, and Stray Currents
- Publication 2026, Safe Descent onto Floating Roof of Tanks in Petroleum Service
- Publication 2217, Guideline for Confined Space Work in the Petroleum Industry

2.3 Department of Transportation:⁶

- Code of Federal Regulations, Title 49, Section 173

2.4 Occupational Safety and Health Standards:⁶

- 29 Code of Federal Regulations, Subparagraph Z, “Toxic and Hazardous Substance”, Section 1910.1000 and following.

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *intermediate container*—the vessel into which all or part of the sample from a primary container/receiver is transferred for transport, storage, or ease of handling.

3.2 *petroleum*—denotes petroleum crudes, as well as petroleum products, normally associated with the petroleum industry.

3.3 *primary container/receiver*—the vessel in which a sample is initially collected.

3.3.1 *Discussion*—Examples of primary sample containers include glass and plastic bottles, cans, and fixed and portable sample receivers.

3.4 *sampling*—all the steps required to obtain a sample that is representative of the contents of any pipe, tank, or other vessel, and to place that sample in a container from which a representative test specimen can be taken for analysis.

¹ This practice is under the jurisdiction of ASTM Committee D-2 on Petroleum Products and Lubricants and is the direct responsibility of Subcommittee D02.02 on Static Petroleum Measurement.

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² *Annual Book of ASTM Standards*, Vol 05.01.

³ *Annual Book of ASTM Standards*, Vol 05.02.

⁴ *Annual Book of ASTM Standards*, Vol 05.03.

⁵ Available from the American Petroleum Institute, 1220 L St., NW, Washington, DC 20005.

⁶ Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.