



Standard Practice for Sampling of Petroleum Products for Analysis by Process Stream Analyzers and for Process Stream Analyzer System Validation¹

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INTRODUCTION

The primary focus of sampling petroleum product is the timely presentation of the sample for (1) analysis by online analyzers, (2) validation of an analyzer system and (3) collecting a composite sample for batch physical property determination. Sediment, free water, rust, and other contaminants found in the sample may be removed in the sample conditioning system to protect the hardware and analytical systems. If a sample is being collected for later analysis, the sample receiver must not alter or degrade the physical make up of the sample in any way. If a sample is being feed to an analyzer or sampled for latter determination of water or particulate contamination then filtering is not an option.

1. Scope

1.1 This practice covers the performance requirements for sample systems employed to deliver process stream samples (1) to analyzer system for analyses or (2) for analyzer validation or (3) for composite sample systems. It also outlines the selection and operation of line or batch sampling equipment intended for analyzer flow proportioned average property value system validation. Sample handling, mixing, and conditioning procedures are required to ensure that a representative sample of the liquid petroleum product is collected from the sampling source.

1.2 *Applicable Fluids*—This practice is applicable to single liquid phase petroleum products whose vapor pressure at sampling and sample storage conditions is less than or equal to 110 kPa (16.0 psi), and, with a D86 final boiling point less than or equal to 400 °C (752 °F).

1.2.1 Specialized sample handling may be necessary to maintain sample integrity of more volatile materials at high temperatures or extended residence time in the receiver. Such handling requirements are not within the scope of this practice. Users should consult the analytical methods to be performed on the sample for special sample storage or conditioning requirements.

1.3 Some or all of the processes outlined in this practice may be applicable to other liquids. Applying this practice to other liquids will require the consideration of additional methods and practices. It is the responsibility of the user of this standard to identify any and all applicable safety and sampling considerations and establish appropriate procedures to handle these additional considerations.

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

1.5 *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*:²

[D3764 Practice for Validation of the Performance of Process Stream Analyzer Systems](#)

[D6122 Practice for Validation of the Performance of Multi-variate Online, At-Line, and Laboratory Infrared Spectrophotometer Based Analyzer Systems](#)

[D6624 Practice for Determining a Flow-Proportioned Average Property Value \(FPAPV\) for a Collected Batch of Process Stream Material Using Stream Analyzer Data](#)

¹ This practice is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.25 on Performance Assessment and Validation of Process Stream Analyzer Systems.

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² 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.