Designation: ~~D7670 – 10~~ D7670 – 10 (Reapproved 2017)

Standard Practice for Processing In-service Fluid Samples for Particulate Contamination Analysis Using Membrane Filters[1]

This standard is issued under the fixed designation D7670; 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.

1. Scope

1.1 This practice covers the processing of in-service fluids in preparation for particulate contamination analysis using membrane filters and is limited only by the liquid-to-membrane filter compatibility.

1.2 The practice covers the procedure for filtering a measured volume of liquid through a membrane filter. When this practice is used, the particulate matter will be randomly distributed on the filter surface for subsequent contamination analysis methods.

1.3 The practice describes procedures to allow handling particles in the size range between ~~2~~2 µm and ~~1000 µm~~ 1000 µm with minimum losses during handling.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D287 Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)
D1078 Test Method for Distillation Range of Volatile Organic Liquids
D1193 Specification for Reagent Water
D1353 Test Method for Nonvolatile Matter in Volatile Solvents for Use in Paint, Varnish, Lacquer, and Related Products
D1836 Specification for Commercial Hexanes
D2021 Specification for Neutral Detergent, 40 Percent Alkylbenzene Sulfonate Type (Withdrawn 2000)[3]
F312 Test Methods for Microscopical Sizing and Counting Particles from Aerospace Fluids on Membrane Filters

3. Terminology

3.1 *Definitions:*

3.1.1 *filtered liquid dispenser, n*—as used in this practice, a dispenser capable of delivering rinse liquid through a filter with pore size no larger than half the size of the smallest particle being considered for measurement.

3.1.2 *filter patch test, n*—preparation of a sample by membrane filtration, as described in this practice, is often referred to as a patch test, or a filter patch test.

4. Significance and Use

4.1 This practice provides for the processing of liquid samples. It will provide the optimum sample processing for visual contamination methods such as Test Methods F312.

5. Apparatus and Materials

5.1 *Filtration Funnel.*

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[1] This practice is under the jurisdiction of ASTM Committee D02 on Petroleum ~~Products~~ Products, Liquid Fuels, and Lubricants and is the direct responsibility of Subcommittee D02.96.06 on Practices and Techniques for Prediction and Determination of Microscopic Wear and Wear-related Properties.

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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.

[3] The last approved version of this historical standard is referenced on www.astm.org.