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.

Designation: D4057 – 22

Manual of Petroleum Measurement Standards (MPMS), Chapter 8.1

Standard Practice for Manual Sampling of Petroleum and Petroleum Products[1]

This standard is issued under the fixed designation D4057; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

INTRODUCTION

The previous version of the manual sampling practice described the various sampling methods and apparatus, with much focus on crude oils and semi-solids and solids. Also, previous versions did not significantly address closed or restricted sampling, which continue to become more prevalent.

This version will provide guidance on manual sampling terminology, concepts, equipment, containers, procedures, and will provide some specific guidance related to particular products and tests. The type and size of the sample obtained, and the handling method, will depend on the purpose for which it was taken. Refer to the test method for any specific sampling and handling requirements up to the point of testing. It remains the responsibility of the subcommittee for the relevant test method to provide guidance, or warnings, regarding sample container selection; preparation; cleanliness; heat, pressure, or light; sample size requirements for testing and retention; and any other special handling requirements necessary to ensure a representative sample is tested.

In addition to the individual test method, for guidance on container, size, mixing and special handling, further guidance may be provided in Practice D5854 (API *MPMS* Chapter 8.3), Practice D5842 (API *MPMS* Chapter 8.4), and Practice D4306. While this practice will provide some general guidance regarding sample chain of custody, Guide D4840 should also be consulted.

This document has been developed jointly between the American Petroleum Institute (API) and ASTM International.

1. Scope*

1.1 This practice covers procedures and equipment for manually obtaining samples of liquid petroleum and petroleum products, crude oils, and intermediate products from the sample point into the primary container are described. Procedures are also included for the sampling of free water and other heavy components associated with petroleum and petroleum products.

1.2 This practice also addresses the sampling of semi-liquid or solid-state petroleum products. For the sampling of green petroleum coke, see Practice D8145. For the sampling of calcined petroleum coke, see Practice D6970.

1.3 This practice provides additional specific information about sample container selection, preparation, and sample handling.

1.4 This practice does not cover sampling of electrical insulating oils and hydraulic fluids. If sampling is for the precise determination of volatility, use Practice D5842 (API *MPMS* Chapter 8.4) in conjunction with this practice. For sample mixing and handling, refer to Practice D5854 (API *MPMS* Chapter 8.3).

1.5 The procedures described in this practice may also be applicable in sampling most non-corrosive liquid industrial chemicals provided that all safety precautions specific to these chemicals are followed. Also, refer to Practice E300. The procedures described in this practice are also applicable to sampling liquefied petroleum gases and chemicals. Also refer to Practices D1265 and D3700. The procedure for sampling bituminous materials is described in Practice D140. Practice

[1] This practice is under the jurisdiction of ASTM Committee D02 on Petroleum Products, Liquid Fuels, and Lubricants and the API Committee on Petroleum Measurement, and is the direct responsibility of Subcommittee D02.02 /COMQ the joint ASTM-API Committee on Hydrocarbon Measurement for Custody Transfer (Joint ASTM-API). This practice has been approved by the sponsoring committees and accepted by the Cooperating Societies in accordance with established procedures. This practice was issued as a joint ASTM-API standard in 1981.

Current edition approved May 1, 2022. Published June 2022. Originally approved in 1981. Last previous edition approved in 2019 as D4057 – 19. DOI: 10.1520/D4057-22.

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

© Jointly copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, USA and the American Petroleum Institute (API), 1220 L Street NW, Washington DC 20005, USA