



Designation: D4841 – 88 (Reapproved 2018)

Standard Practice for Estimation of Holding Time for Water Samples Containing Organic and Inorganic Constituents¹

This standard is issued under the fixed designation D4841; 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 means of estimating the period of time during which a water sample can be stored after collection and preservation without significantly affecting the accuracy of analysis.

1.2 The maximum holding time is dependent upon the matrix used and the specific analyte of interest. Therefore, water samples from a specific source must be tested to determine the period of time that sample integrity is maintained by standard preservation practices.

1.3 In the event that it is not possible to analyze the sample immediately at the time of collection, this practice does not provide information regarding degradation of the constituent of interest or changes in the matrix that may occur from the time of sample collection to the time of the initial analysis.

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 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *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

- D1129 Terminology Relating to Water
- D1193 Specification for Reagent Water
- D2777 Practice for Determination of Precision and Bias of Applicable Test Methods of Committee D19 on Water
- D3694 Practices for Preparation of Sample Containers and for Preservation of Organic Constituents
- D4210 Practice for Intralaboratory Quality Control Procedures and a Discussion on Reporting Low-Level Data (Withdrawn 2002)³
- D4375 Practice for Basic Statistics in Committee D19 on Water
- E178 Practice for Dealing With Outlying Observations

3. Terminology

3.1 *Definitions*—For definitions of terms used in this standard, refer to Terminology D1129.

3.1.1 *criterion of detection, n*—the minimum quantity that must be observed before it can be stated that a substance has been discerned with an acceptable probability that the statement is true (see Practice D4210).

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *acceptable holding time, n*—any period of time less than or equal to the maximum holding time.

3.2.2 *maximum holding time, n*—the maximum period of time during which a properly preserved sample can be stored before such degradation of the constituent of interest or change in sample matrix occurs that the systematic error exceeds the 99 % confidence interval (not to exceed 15 %) of the test calculated around the mean concentration found at zero time.

4. Summary of Practice

4.1 Holding time is estimated by means of replicate analyses at discrete time intervals using a large volume of a water

¹ This practice is under the jurisdiction of ASTM Committee D19 on Water and is the direct responsibility of Subcommittee D19.02 on Quality Systems, Specification, and Statistics.

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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.