



Standard Test Method for Determination of Turbidity Below 5 NTU in Static Mode¹

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1. Scope*

1.1 This test method covers the static determination of turbidity in water (see 4.1).

1.2 This test method is applicable to the measurement of turbidities under 5.0 nephelometric turbidity units (NTU).

1.3 This test method was tested on municipal drinking water, ultra-pure water and low turbidity samples. It is the user's responsibility to ensure the validity of this test method for waters of untested matrices.

1.4 This test method uses calibration standards are defined in NTU values, but other assigned turbidity units are assumed to be equivalent.

1.5 This test method assigns traceable reporting units to the type of respective technology that was used to perform the measurement. Units are numerically equivalent with respect to the calibration standard. For example, a 1.0 NTU formazin standard is also equal to a 1.0 FNU standard, a 1.0 FNRU standard and so forth.

1.6 *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. Refer to the MSDSs for all chemicals used in this procedure.*

2. Referenced Documents

2.1 ASTM Standards:²

D1129 Terminology Relating to Water

D1192 Guide for Equipment for Sampling Water and Steam in Closed Conduits (Withdrawn 2003)³

D1193 Specification for Reagent Water

D2777 Practice for Determination of Precision and Bias of Applicable Test Methods of Committee D19 on Water
D3370 Practices for Sampling Water from Closed Conduits
D5847 Practice for Writing Quality Control Specifications for Standard Test Methods for Water Analysis
E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

2.2 Other Referenced Standards:

USEPA Method 180.1 Methods for Chemical Analysis of Water and Wastes, Turbidity⁴

ISO 7027 (The International Organization for Standardization) Water Quality—for the Determination of Turbidity⁵

3. Terminology

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

3.2 Definitions:

3.2.1 *calibration turbidity standard, n*—A turbidity standard that is traceable and equivalent to the reference turbidity standard to within statistical errors; calibration turbidity standards include commercially prepared 4000 NTU Formazin, stabilized formazin (see 9.2.3), and styrenedivinylbenzene (SDVB) (see 9.2.4).

3.2.1.1 *Discussion*—these standards may be used to calibrate the instrument.

NOTE 1—Calibration standards may be instrument specific.

3.2.2 *calibration verification standards, n*—Defined standards used to verify the accuracy of a calibration in the measurement range of interest.

3.2.2.1 *Discussion*—these standards may not be used to perform calibrations, only calibration verifications. Included standards are opto-mechanical light scatter devices, gel-like standards, or any other type of stable liquid standard.

NOTE 2—Calibration verification standards may be instrument specific.

3.2.3 *nephelometric turbidity measurement, n*—The measurement of light scatter from a sample in a direction that is at 90° with respect to the centerline of the incident light path.

¹ This test method is under the jurisdiction of ASTM Committee D19 on Water and is the direct responsibility of Subcommittee D19.07 on Sediments, Geomorphology, and Open-Channel Flow.

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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.

⁴ Available from United States Environmental Protection Association (EPA), Ariel Rios Bldg., 1200 Pennsylvania Ave., NW, Washington, DC 20460.

⁵ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.