



Designation: D5091 – 95 (Reapproved 2014)

Standard Guide for Water Analysis for Electrodialysis/Electrodialysis Reversal Applications¹

This standard is issued under the fixed designation D5091; 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 guide covers the determinations that should be performed on any given water if processing by electrodialysis/electrodialysis reversal is being considered.

1.2 This guide is applicable to all waters but is not necessarily complete for wastewaters.

1.3 This is a guide only and should not be construed as a complete delineation of all analysis required for a specific application.

1.4 *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

- D511 Test Methods for Calcium and Magnesium in Water
- D512 Test Methods for Chloride Ion in Water
- D516 Test Method for Sulfate Ion in Water
- D857 Test Method for Aluminum in Water
- D858 Test Methods for Manganese in Water
- D1067 Test Methods for Acidity or Alkalinity of Water
- D1068 Test Methods for Iron in Water
- D1125 Test Methods for Electrical Conductivity and Resistivity of Water
- D1129 Terminology Relating to Water
- D1179 Test Methods for Fluoride Ion in Water
- D1253 Test Method for Residual Chlorine in Water
- D1293 Test Methods for pH of Water

¹ This guide is under the jurisdiction of ASTM Committee D19 on Water and is the direct responsibility of Subcommittee D19.08 on Membranes and Ion Exchange Materials.

Current edition approved June 1, 2014. Published July 2014. Originally approved in 1990. Last previous edition approved in 2007 as D5091 – 95 (2007). DOI: 10.1520/D5091-95R14.

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.

D1889 Test Method for Turbidity of Water (Withdrawn 2007)³

D2579 Test Method for Total Organic Carbon in Water (Withdrawn 2002)³

D3352 Test Method for Strontium Ion in Brackish Water, Seawater, and Brines

D3370 Practices for Sampling Water from Closed Conduits

D3561 Test Method for Lithium, Potassium, and Sodium Ions in Brackish Water, Seawater, and Brines by Atomic Absorption Spectrophotometry

D3867 Test Methods for Nitrite-Nitrate in Water

D3920 Test Method for Strontium in Water

D4189 Test Method for Silt Density Index (SDI) of Water

D4191 Test Method for Sodium in Water by Atomic Absorption Spectrophotometry

D4192 Test Method for Potassium in Water by Atomic Absorption Spectrophotometry

D4327 Test Method for Anions in Water by Suppressed Ion Chromatography

D4382 Test Method for Barium in Water, Atomic Absorption Spectrophotometry, Graphite Furnace

D4658 Test Method for Sulfide Ion in Water

D4839 Test Method for Total Carbon and Organic Carbon in Water by Ultraviolet, or Persulfate Oxidation, or Both, and Infrared Detection

2.2 American Public Health Association Standards:

Standard Methods for the Examination of Water and Wastewater, Eighteenth Edition, 1992, pp. 4-123 to 4-128⁴

3. Terminology

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

4. Summary of Guide

4.1 This guide consists of recommended water analyses for ions, gases, suspended materials, organics, temperature, and pH for potential applications of electrodialysis/electrodialysis reversal.

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

⁴ Available from American Public Health Association (APHA), 800 I Street, NW, Washington, DC 20001, <http://www.apha.org>.