



Standard Test Method for Shake Extraction of Mining Waste by the Synthetic Precipitation Leaching Procedure¹

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1. Scope

1.1 This test method covers a procedure for the shake leaching of mining waste containing at least 80 % dry solids (≤ 20 % moisture) in order to generate a solution to be used to determine the inorganic constituents leached under the specified testing conditions that conform to the synthetic precipitation leaching procedure (SPLP).

1.2 This test method calls for the shaking of a known weight of mining waste with acidic extraction fluid of a specified composition as well as the separation of the liquid phase for analysis. The pH of the extraction fluid is to reflect the pH of acidic precipitation in the geographic region in which the waste being tested is to be disposed.

NOTE 1—Possible sources of information concerning the pH of the precipitation in the geographic region of interest include state and federal environmental agencies, state universities, libraries, etc. pH values given in USEPA Method 1312, that are 4.2 east of the Mississippi River and 5.0 west of the Mississippi River and are based on acid precipitation maps, are examples of values that can be used. If the pH of the laboratory water is less than the desired pH for the site, do not use this test method; use Test Method D3987 or Test Method E2242.

NOTE 2—The method may also be suitable for use in testing of mineral processing waste from meal mining process operations for jurisdictions that do not require the use of Test Method E2242.

1.3 This test method is intended to describe the procedure for performing single batch extractions only. It does not describe all types of sampling, sample preservation, and analytical requirements that may be associated with its application.

1.4 The values stated in SI units are to be regarded as the 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 appro-*

priate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Referenced Documents

2.1 ASTM Standards:²

- D75 Practice for Sampling Aggregates
- D420 Guide to Site Characterization for Engineering Design and Construction Purposes (Withdrawn 2011)³
- D653 Terminology Relating to Soil, Rock, and Contained Fluids
- D1129 Terminology Relating to Water
- D1193 Specification for Reagent Water
- D2234/D2234M Practice for Collection of a Gross Sample of Coal
- 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
- D3987 Practice for Shake Extraction of Solid Waste with Water
- D5744 Test Method for Laboratory Weathering of Solid Materials Using a Humidity Cell
- E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method
- E877 Practice for Sampling and Sample Preparation of Iron Ores and Related Materials for Determination of Chemical Composition and Physical Properties
- E1915 Test Methods for Analysis of Metal Bearing Ores and Related Materials for Carbon, Sulfur, and Acid-Base Characteristics
- E2242 Test Method for Column Percolation Extraction of Mine Rock by the Meteoric Water Mobility Procedure

2.2 EPA Document:

- U.S. Environmental Protection Agency, Synthetic Precipitation Leaching Procedure, Method 1312 in SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical

¹ This test method is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.01.04 on Waste Leaching Techniques.

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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.