



Standard Test Methods for Chemical, Mass Spectrometric, and Spectrochemical Analysis of Nuclear-Grade Uranium Dioxide Powders and Pellets¹

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1. Scope

1.1 These test methods cover procedures for the chemical, mass spectrometric, and spectrochemical analysis of nuclear-grade uranium dioxide powders and pellets to determine compliance with specifications.

1.2 The analytical procedures appear in the following order:

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C 1413 Test Method for Isotopic Analysis of Hydrolysed Uranium Hexafluoride and Uranyl Nitrate Solutions By Thermal Ionization Mass Spectrometry

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2. Referenced Documents

2.1 ASTM Standards:

C 753 Specification for Nuclear-Grade, Sinterable Uranium Dioxide Powder³

C 761 Test Method for Chemical, Mass Spectrometric, Spectrochemical, Nuclear, and Radiochemical Analysis of Uranium Hexafluoride³

C 776 Specification for Sintered Uranium Dioxide Pellets³

C 1267 Test Method for Uranium By Iron (II) Reduction In Phosphoric Acid Followed By Chromium (VI) Titration In The Presence of Vanadium³

C 1287 Test Method for Determination of Impurities In Uranium Dioxide By Inductively Coupled Plasma Mass Spectrometry³

C 1347 Practice for Preparation and Dissolution of Uranium Materials for Analysis³

C 1408 Test Method for Carbon (Total) in Uranium Oxide Powders and Pellets By Direct Combustion-Infrared Detection Method³

C 1413 Test Method for Isotopic Analysis of Hydrolysed Uranium Hexafluoride and Uranyl Nitrate Solutions By Thermal Ionization Mass Spectrometry³

D 1193 Specification for Reagent Water⁵

E 115 Practice for Photographic Processing in Optical Emission Spectrographic Analysis⁶

E 116 Practice for Photographic Photometry by Spectrochemical Analysis⁶

E 130 Practice for Designation of Shapes and Sizes of Graphite Electrodes⁶

E 217 Test Method for Uranium by Controlled-Potential Coulometry³

E 305 Practice for Establishing and Controlling Spectrochemical Analytical Curves⁶

¹ These test methods are under the jurisdiction of ASTM Committee C-26 on Nuclear Fuel Cycle.

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² Discontinued January 1999. See C 696–80.

³ *Annual Book of ASTM Standards*, Vol 12.01.

⁴ Discontinued as of May 30, 1980.

⁵ *Annual Book of ASTM Standards*, Vol 11.01.

⁶ *Annual Book of ASTM Standards*, Vol 03.05.

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