



Designation: C 1022 – 9302

Standard Test Methods for Chemical and Atomic Absorption Analysis of Uranium-Ore Concentrate¹

This standard is issued under the fixed designation C 1022; 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 These test methods cover procedures for the chemical and atomic absorption analysis of uranium-ore concentrates to determine compliance with the requirements prescribed in Specification C 967.

1.2 The analytical procedures appear in the following order:

	Sections
<u>Uranium by Ferrous Sulfate Reduction—Potassium Dichromate</u>	—
<u>—Titrimetry</u>	—9 to 16
<u>Uranium by Ferrous Sulfate Reduction—Potassium Dichromate</u>	—
<u>—Titrimetry</u>	9
<u>Nitric Acid-Insoluble Uranium</u>	17 to 25
<u>Nitric Acid-Insoluble Uranium</u>	10 to 18
<u>Extractable Organic Material</u>	26 to 33
<u>Extractable Organic Material</u>	19 to 26
<u>Arsenic by Diethyldithiocarbamate (Photometric Method)</u>	34 to 43
<u>Arsenic by Diethyldithiocarbamate (Photometric Method)</u>	27 to 36
<u>Carbonate by CO₂ Gravimetry</u>	44 to 50
<u>Carbonate by CO₂ Gravimetry</u>	37 to 43
<u>Fluoride by Ion-Selective Electrode</u>	51 to 58
<u>Fluoride by Ion-Selective Electrode</u>	44 to 51
<u>Halides by Volhard Titration</u>	59 to 66
<u>Halides by Volhard Titration</u>	52 to 59
<u>Moisture by Loss of Weight at 110°C</u>	67 to 73
<u>Moisture by Loss of Weight at 110°C</u>	60 to 66
<u>Phosphorus by Spectrophotometry</u>	74 to 82
<u>Phosphorus by Spectrophotometry</u>	67 to 75
<u>Silicon by Gravimetry</u>	83 to 89
<u>Silicon by Gravimetry</u>	76 to 82
<u>Thorium by the Thorin (Photometric) Method</u>	90 to 98
<u>Thorium by the Thorin (Photometric) Method</u>	83 to 91
<u>Calcium, Iron, Magnesium, Molybdenum, Titanium, and Vanadium by Atomic Absorption Spectrophotometry</u>	99 to 108
<u>Calcium, Iron, Magnesium, Molybdenum, Titanium, and Vanadium by Atomic Absorption Spectrophotometry</u>	92 to 101
<u>Potassium and Sodium by Atomic Absorption</u>	—
<u>—Spectrophotometry</u>	109 to 118
<u>Potassium and Sodium by Atomic Absorption</u>	—
<u>—Spectrophotometry</u>	102 to 111
<u>Boron by Spectrophotometry</u>	119 to 128
<u>Boron by Spectrophotometry</u>	112 to 121

1.3 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. Specific precautionary statements are given in Sections 7, 39, 32, and Note 16, 14.

2. Referenced Documents

2.1 ASTM Standards:

¹ These test methods are under the jurisdiction of ASTM Committee C-26 on Nuclear Fuel Cycle and are the direct responsibility of Subcommittee C26.05 on Methods of Test.

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