



Standard Practices for Sampling Uranium-Ore Concentrate¹

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1. Scope

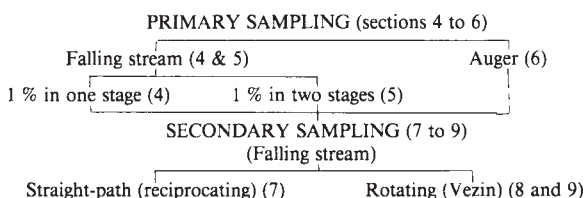
1.1 These practices are intended to provide the nuclear industry with procedures for obtaining representative bulk samples from uranium-ore concentrates (UOC) (see Specification C 967).

1.2 These practices also provide for obtaining a series of representative secondary samples from the original bulk sample for the determination of moisture and other test purposes, and for the preparation of pulverized analytical samples (see Test Methods C 1022).

1.3 These practices consist of a number of alternative procedures for sampling and sample preparation which have been shown to be satisfactory through long experience in the nuclear industry. These procedures are described in the following order.

Stage	Procedure	Section
Primary Sampling	One-stage falling stream	4
	Two-stage falling stream	5
	Auger	6
Secondary Sampling	Straight-path (reciprocating)	7
	Rotating (Vezin)	8, 9
Sample Preparation		10
	Concurrent-drying	11-13
	Natural moisture	14-16
	Calcination	17, 18
Sample Packaging		19
	Wax sealing	20
	Vacuum sealing	21

1.3.1 The primary and secondary sampling stages can be organized in the following way:



1.3.2 It is possible to combine the various elements of these stages in different ways to give satisfactory results depending on the agreed requirements of the contracting parties. For a

given stage, however, each procedure must be regarded as a whole. It is highly inadvisable to mix elements belonging to different procedures.

1.4 These procedures do not include requirements for health, safety, and accountability. The observance of these practices does not relieve the user of the obligation to be aware of and to conform to all applicable international, federal, state, and local regulations pertaining to processing, shipping, or using uranium-ore concentrates. (Guidance is provided in CFR, 10, Chapter 1.)

1.5 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.6 *This standard does not purport to address all of the safety problems, 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

C 967 Specification for Uranium Ore Concentrate

C 1022 Test Methods for Chemical and Atomic Absorption Analysis of Uranium-Ore Concentrate

2.2 Other Document:

CFR 10 Nuclear Materials Licensing Code of Federal Regulations, Chapter 1³

3. General Requirements

3.1 Material Requirements:

3.1.1 The uranium-ore concentrates shall be free-flowing and of a particle size not to exceed 6 mm (0.25 in.) or such other limit agreed upon between contracting parties.

3.1.2 The average moisture content shall not exceed 5.0 % weight of the uranium-ore concentrates.

3.1.3 The material shall be shipped to the sampling plant in 200-L (55-gal) standard steel drums that are fitted with steel lids and equipped with suitable gasket and sealing rings to

¹ These practices are under the jurisdiction of ASTM Committee C26 on Nuclear Fuel Cycle and are the direct responsibility of Subcommittee C26.02 on Fuel and Fertile Material Specifications.

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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 Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.