



Designation: C 1348 – 9601

Standard Specification for Blended Uranium Oxides with a ^{235}U Content of Less Than 5 % for Direct Hydrogen Reduction to Nuclear Grade Uranium Dioxide¹

This standard is issued under the fixed designation C 1348; 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.

INTRODUCTION

This specification is intended to provide the nuclear industry with a general standard for such uranium oxide powders. It recognizes the diversity of conversion processes and the many special requirements for chemical and physical characterization that may be imposed by the end use of the powder. It is anticipated, therefore, that this specification may be supplemented with additional requirements by agreement between the buyer and the seller.

1. Scope

1.1 This specification covers blended uranium trioxide (UO_3), U_3O_8 , or mixtures of the two, powders that are intended for conversion into a sinterable uranium dioxide (UO_2) powder by means of a direct reduction process. The UO_2 powder product of the reduction process must meet the requirements of Specification C 753 and be suitable for subsequent UO_2 pellet fabrication by pressing and sintering methods. This specification applies to uranium oxides with a ^{235}U enrichment less than 5 %.

1.2 This specification includes chemical, physical, and test method requirements for uranium oxide powders as they relate to the suitability of the powder for storage, transportation, and direct reduction to UO_2 powder. This specification is applicable to uranium oxide powders for such use from any source.

1.3 The scope of this specification does not comprehensively cover all provisions for preventing criticality accidents, for health and safety, or for shipping. Observance of this specification does not relieve the user of the obligation to conform to all international, national, state, and local regulations for processing, shipping, or any other way of using uranium oxide powders (see 2.2 and 2.3).

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

1.5 The following safety hazards caveat pertains only to the test methods portion of the annexes in this specification: *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:

¹ This specification is under the jurisdiction of ASTM Committee C-26 on Nuclear Fuel Cycle and is the direct responsibility of Subcommittee C26.02 on Fuel and Fertile Material Specifications.

Current edition approved July 10, 1996; 2001. Published September 1996; March 2001. Originally published as C 1348-96. Last previous edition C 1348-96.