Designation: E 1451 – 98

Standard Guide for Disposal of Wastes Containing Respirable Silicon Carbide Whiskers[1]

This standard is issued under the fixed designation E 1451; 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 This guide covers a disposal of wastes of unbound respirable silicon carbide (SiC) whiskers and wastes containing 1.0 % by weight or greater of unbound respirable silicon carbide whiskers which could become airborne during disposal operations or uncontrolled releases of materials during disposal operations.

1.2 If the waste stream contains or is mixed with other constituents that are considered hazardous waste by area federal, state, local, or other regulations, the disposal requirements may be more stringent or require different handling precautions, or both, than those recommended in this guide. Information specific to any hazardous constituents should be included in each generator's characterization of the waste so that it can be properly classified and managed.

1.3 Application of these recommendations must be in accordance with federal, state, local, or other solid waste regulations.

1.4 Applicable information may be obtained from the Material Safety Data Sheet(s) (MSDS) for the waste stream constituent(s).

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

2. Referenced Documents

2.1 *ASTM Standards:* [2]

E 1437 Practice for Handling Respirable Silicon Carbide Whiskers

2.2 *American National Standards Institute (ANSI)*[3] *Standard:*

ANSI Z88.2 – 1992, Respiratory Protection

2.3 *U.S. Government Standard:*

Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.134, Respiratory Protection[4]

3. Terminology

3.1 *Definitions:*

3.1.1 *aspect ratio*, *n*—ratio of whisker length to whisker diameter.

3.1.2 *respirable silicon carbide whiskers*, *n*—a crystalline silicon carbide fiber, approximately cylindrical in shape, with a diameter less than 3.0 μm and an aspect ratio equal or greater than 5:1.

3.1.3 *unbound silicon carbide whiskers*, *n*—whiskers with the potential to become airborne.

4. Significance and Use

4.1 Industrial solid wastes containing more than 1 % by weight of unbound respirable SiC whiskers will typically be generated by manufacturing operations which produce whiskers or handle powders containing respirable whiskers. Such wastes could also be generated by operations which (re)finish articles containing SiC whiskers. These wastes must be disposed in a manner that prevents respirable SiC whisker exposure above the exposure limits of Practice E 1437.

4.2 This guide should be used in preparing comprehensive solid waste handling procedures for implementation by waste generators, waster haulers, and landfill operators.

5. Guidelines—Waste Generators

5.1 Waste containing respirable silicon carbide whiskers is not currently regulated by the Environmental Protection Agency as a hazardous waste unless the waste contains regulated waste.

[1] This guide is under the jurisdiction of ASTM Committee E-34 on Occupational Health and Safety and is the direct responsibility of Subcommittee E34.70 on Single Crystal Ceramic Whiskers.

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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 American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

[4] Available from the Superintendent of Documents, U.S. Government Printing Office, Washington DC 20402.