



Designation: C 1226 – 93 (Reapproved 2006)

Standard Test Method for Soluble Chlorides in Asbestos¹

This standard is issued under the fixed designation C 1226; 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 test method covers the leaching out of the soluble chlorides in asbestos and the volumetric determination of chloride ion in the leachate.

1.2 **Warning**—Breathing of asbestos dust is hazardous. Asbestos and asbestos products present demonstrated health risks for users and for those with whom they come into contact. In addition to other precautions, when working with asbestos-cement products, minimize the dust that results. For information on the safe use of chrysotile asbestos, refer to “Safe Use of Chrysotile Asbestos: A Manual on Preventive and Control Measures.”²

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.* See 1.2 for a specific hazard warning.

2. Referenced Documents

2.1 ASTM Standards:³

D 1193 Specification for Reagent Water

D 2590 Test Method for Sampling Chrysotile Asbestos

D 2946 Terminology for Asbestos and Asbestos–Cement Products

D 3879 Test Method for Sampling Amphibole Asbestos

E 177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods

2.2 QAMA Standards:

A-2-72 Definitions of Terms Relating to Asbestos⁴

G-5-74 Soluble Chlorides⁴

2.3 ACS Standards:

Specifications of the Committee on Analytical Reagents⁵

3. Terminology

3.1 Refer to Terminology D 2946 and QAMA Standard A-2-72.

4. Summary of Test Method

4.1 The asbestos is leached with water in a Soxhlet extractor for 3 h.

4.2 Dilute mercuric nitrate solution is added to an acidified specimen of leachate in the presence of mixed diphenyl-carbazone bromphenol blue indicator. The end point of the titration is the formation of the blue-violet mercury diphenyl-carbazone complex (see Note 5).

4.3 An alternative titration by means of an automatic titrator is presented in Annex A1.

4.4 An alternative simplified titration, suitable for non-referee internal quality control, is presented in Annex A2.

5. Significance and Use

5.1 This test method provides an evaluation of the water-soluble chlorides in asbestos. It is used to determine the suitability of asbestos for use in products, such as gaskets, that may be in contact with metals under hydrothermal conditions that foster chloride ion corrosion.

6. Interferences

6.1 Zinc, lead, nickel, ferrous, and chromous ions affect the solubility of the chloride ion and the end point color, but they do not reduce the accuracy of the titration when present in concentrations up to 100 ppm.

6.2 Copper is tolerable up to 50 ppm.

6.3 Titration in the presence of chromate ion requires an indicator with intensified background color, such as alphasaurine, and prior reduction for concentrations above 100 ppm.

¹ This test method is under the jurisdiction of ASTM Committee C17 on Fiber-Reinforced Cement Products and is the direct responsibility of Subcommittee C17.03 on Asbestos-Cement Sheet Products and Accessories.

Current edition approved June 1, 2006. Published June 2006. Originally approved in 1993. Last previous edition approved in 2002 as C 1226 - 93 (2002)^{ε1}.

² Available from The Asbestos Institute, http://www.chrysotile.com/en/sr_use/manual.htm.

³ 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.

⁴ Published in the *Chrysotile Asbestos Test Manual*. Available from the Asbestos Institute, 1002 Sherbrooke St. W., Suite 1750, Montreal, QC, Canada H3A 3L6.

⁵ *Reagent Chemicals, American Chemical Society Specifications*, American Chemical Society, Washington, DC. For suggestions on the testing of reagents not listed by the American Chemical Society, see *Analar Standards for Laboratory Chemicals*, BDH Ltd., Poole, Dorset, U.K., and the *United States Pharmacopeia and National Formulary*, U.S. Pharmaceutical Convention, Inc. (USPC), Rockville, MD.