



Designation: D7712 – 18

Standard Terminology for Sampling and Analysis of Asbestos¹

This standard is issued under the fixed designation D7712; 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 terminology standard is a collective vocabulary relating to sampling and analysis of asbestos. As a convenience to general interest, it contains most of the standard terms, definitions, and nomenclature under the jurisdiction of Committee D22.

1.2 Many of the entries in this terminology are copied (with attribution) from the standards of origin referenced in Section 2. The standards of origin are noted in bold type at the right margin of the applicable definition.

1.3 Certain terms in the common language that comprise multiple concepts are included herein with the definition specific to standards and practices of Committee D22.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 ASTM Standards:

- D1356** Terminology Relating to Sampling and Analysis of Atmospheres
- D5755** Test Method for Microvacuum Sampling and Indirect Analysis of Dust by Transmission Electron Microscopy for Asbestos Structure Number Surface Loading
- D5756** Test Method for Microvacuum Sampling and Indirect Analysis of Dust by Transmission Electron Microscopy for Asbestos Mass Surface Loading (Withdrawn 2017)²
- D6281** Test Method for Airborne Asbestos Concentration in Ambient and Indoor Atmospheres as Determined by Transmission Electron Microscopy Direct Transfer (TEM)
- D6480** Test Method for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos Structure Number

¹ This terminology standard is under the jurisdiction of ASTM Committee D22 on Air Quality and is the direct responsibility of Subcommittee D22.07 on Sampling and Analysis of Asbestos.

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² The last approved version of this historical standard is referenced on www.astm.org.

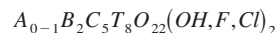
- Surface Loading by Transmission Electron Microscopy
- D6620** Practice for Asbestos Detection Limit Based on Counts
- D7200** Practice for Sampling and Counting Airborne Fibers, Including Asbestos Fibers, in Mines and Quarries, by Phase Contrast Microscopy and Transmission Electron Microscopy
- D7201** Practice for Sampling and Counting Airborne Fibers, Including Asbestos Fibers, in the Workplace, by Phase Contrast Microscopy (with an Option of Transmission Electron Microscopy)
- D7390** Guide for Evaluating Asbestos in Dust on Surfaces by Comparison Between Two Environments
- 2.2 *Government Standards:*
- USGS Open-File Report 02-458** Tabulation of Asbestos-Related Terminology

3. Terminology

acicular, *adj*—the shape shown by an extremely slender crystal with cross-sectional dimensions that are small relative to its length, that is, needle-like. **D6281**

activity generated aerosol, *n*—a dispersion of particles in air that have become airborne due to physical disturbances such as human activity, sweeping, airflow, etc. **D7390**

amphibole, *n*—a group of more than 60 different silicate minerals with similar crystal structures and complex compositions that conform to the nominal formula:



where:

- A* = K, Na, Ca;
- B* = Fe²⁺, Mn, Mg, Ca, Na;
- C* = Al, Cr, Ti, Fe³⁺, Mg, Fe²⁺; and
- Mn* and *T* = Si, Al, Cr, Fe³⁺, Ti.

In some varieties of amphibole, these elements can be partially substituted by Li, Pb, Zn, Be, Ba, or Ni. Amphiboles are characterized by a complex monoclinic or orthorhombic structure that includes a double chain of T-O tetrahedra with a T:O ratio of approximately 4:11; a variable morphology that ranges from columnar to prismatic to acicular to fibrous; and good prismatic cleavage at angles of about 56 and 124°. The cleavage may not be readily exhibited by small crystals that are bound by irregular growth and fracture surfaces. **D6281**