ASTM International Committee E56 on Nanotechnology

Standards Update for 2013

Debra L. Kaiser
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Chair, Committee E56

Next Meeting: May 5-6, 2014, Toronto, Canada

http://www.astm.org/COMMIT/COMMITTEE/E56.htm
ASTM E56

Overview

• Established in 2005
• Membership: 171 individuals and organizations
• 22 countries represented in membership
• Committee meets twice yearly (May and November)
• Focus is on standards for measurements of nanomaterials

Scope

• Develop standards and guidance for nanotechnology and nanomaterials
• Coordinate with existing ASTM standardization efforts of other ASTM committees as they relate to nanotechnology
• Maintain appropriate global liaison relationships with activities (internal and external) related to this subject area
• Participate in the development of symposia, workshops, and other related activities to enhance the development of standards
E56 Organization

Chair: Debra Kaiser (NIST)  
Vice-Chair: Stacey Harper (Oregon State)  
ASTM Staff Manager: Kate McClung

Membership Secretary: Tony Thornton (Micromeritics)  
Secretary: Aleksandr Stefaniak (NIOSH)

Technical Subcommittees

- **E56.01** Informatics and Terminology  
- **E56.02** Physical and Chemical Characterization  
- **E56.03** Environment, Health, and Safety  
- **E56.06** Nano-enabled Consumer Products

Advisory Subcommittees

- **E56.04** Intellectual Property Issues  
- **E56.05** Liaison and International Cooperation  
- **E56.09** Strategic Planning and Review
Types of ASTM Standards

- **Terminology standard**: a document composed of definitions of terms; explanations of symbols, abbreviations, or acronyms *(1)*

- **Guide**: a compendium of information or series of options that does not recommend a specific course of action *(6)*

- **Practice**: a definitive set of instructions for performing one or more specific operations that does not produce a test result *(1)*

- **Test method**: a definitive procedure that produces a test result; requires an interlaboratory study *(4)*

- **Specification**: an explicit set of requirements to be satisfied by a material, product, system, or service

- **Classification**: a systematic arrangement or division of materials, products, systems, or services into groups based on similar characteristics such as origin, composition, properties, or use

- **Interlaboratory study**: conducted to develop precision and bias statements
  - **Precision**: closeness of agreement between test results obtained under prescribed conditions; includes repeatability and reproducibility standard deviations
  - **Bias**: systematic error that contributes to the difference between the mean of a large number of test results and an accepted reference value

* Denotes number of E56 published standards of that type

http://www.astm.org/COMMIT/Blue_Book.pdf
New Published Standards and Reapproved Standards in 2013

Subcommittee E56.01: Informatics and Terminology


Subcommittee E56.02: Physical and Chemical Characterization

• E2864-13 Standard Test Method for Measurement of Airborne Metal and Metal Oxide Nanoparticle Surface Area Concentration in Inhalation Exposure Chambers Using Krypton Gas Adsorption

Subcommittee E56.03: Environment, Health, and Safety


Proposed New Standards

Subcommittee E56.02: Physical and Chemical Characterization

- WK39049 New Guide for Sample Preparation of Charge-Stabilized Metal Nanoparticles for Electron Microscopy*

Subcommittee E56.03: Environment, Health, and Safety

- WK38731 New Specification for ASTM Nanotechnology Environment, Health and Safety Personnel Certification Program

Subcommittee E56.06: Nano-Enabled Consumer Products

- WK37636 New Guide for Detection and Characterization of Manufactured Silver Nanomaterials in Textiles*

Subcommittee E56.91: Strategic Planning and Review

- WK37514 New Guide for E56 and F04 Workshop on Nanomaterials in Medicine: Research, Applications, Products, and Risk

*Collaboration area on ASTM website
Collaboration Areas

- Established as an interactive web tool to facilitate:
  - Development of new standards and review of existing standards
  - Discussions on specific topics related to standards
- Leader invites E56 members to join a collaboration area; members can also request to join

Example of a collaboration area website for development of a new standard

Collaboration on WK37636 - New Standard detection and characterization of manufactured silver nanomaterials in textiles

- Collaboration area includes drafts of standard, relevant files, list of members, history of member comments and actions
- Members can post new documents and comments on the area
ASTM E56 Fall 2013 Meeting

- FDA requested that E56 hold its Fall meeting at the FDA White Oaks Campus in Silver Spring, MD (May 2013)
- ASTM E56 Executive Committee approved the request
- Meeting held on October 30-31 with webinar capability for the entire meeting
- Agenda
  - FDA Welcome and Opening Presentations (Carlos Pena and Subhas Malghan)
  - Regular business meetings of all Subcommittees
  - FDA Nanotechnology Laboratory Tours
  - Guest speakers:
    - Heather Benko, ANSI: “Update on ISO TC229” and “ANSI-NSP Nanotechnology Standards Database”
    - Stephen Freiman, Freiman Consulting: “A Uniform Description System for Nanomaterials”
    - Connor Stone, Ohio State Univ.: “Challenges of Standards Development for Nanotechnology”
    - Alan Kennedy and Jessica Coleman, USACE ERD: “Program on Developing Protocols for Nanomaterials”
    - Ajit Jilla, NIST: “Patents and Intellectual Property Management in Nanotechnology Standardization: A NIST Perspective”
- 16 FDA participants in person
- Planning to hold a future E56 meeting at FDA, likely in Spring 2015