



June 11, 2026

Committee D22  
Subcommittee D22.07 on Asbestos  
Ballot Item: WK92083

RE: Negative Vote on Ballot Item: WK92083 — Standard Practice for Classification of Elongate Amphibole Particles by Their Habit According to Dimensional Characteristics by Electron Microscopy

The following comments support a negative vote on WK92083 and provide a brief rationale for that vote.

Sections 1.1, 1.3 and Section 1.4. The Single-Classification Approach is Unsuitable for Characterization

Note 1 and Note 3 and Section 1.4 describe that this practice assigns a “single classification symbol and name” to an entire sample but the method is for “qualitative application only” and “cannot quantify the fraction” of asbestiform versus non-asbestiform particles.

Due to the health harm and annual deaths caused by exposure to asbestiform fibers, the material is heavily regulated (<https://www.epa.gov/asbestos/asbestos-laws-and-regulations>). Within this content, the binary classification approach advanced within this standard can be considered a statement on potential health harm.

Classifying mineral particles into "asbestiform" versus "non-asbestiform" habits is an outdated approach and not a reliable proxy for determining health hazards. Toxicological and regulatory consensus have moved past this binary classification.

Because pathogenicity is driven by individual particle dimensions, assigning a "single classification symbol and name" to an entire sample based on a population average is unfit for consumer safety testing (such as evaluating talc). A single label tells a regulator or a consumer nothing about the actual respirable fiber load within that material. Averaging a population of particles to a single "Non-Asbestiform" label on a sample can hide the presence of potentially highly toxic structures and is a loss of information. This standard should be withdrawn because a population-wide, all-or-nothing classification approach cannot safely characterize human exposure risks. Further, ASTM should not adopt a standard that classifies particle samples in a manner that is at odds with dimensional, health-based monitoring.

- NIOSH CIB 62: Establishes that toxicity is driven by a particle's dimension and durability for amphibole and serpentine minerals; mineralogical habit is not a critical factor for exclusion.<sup>1</sup>
- EU Directive 2023/2668: Legally mandates electron microscopy across Europe and provides options to capture ultra-thin structures (all structures below 0.2 µm wide) that outdated, resolution-limited optical rules fail to count.<sup>2</sup>
- ANSES 2015 Report: Concludes that non-asbestiform cleavage fragments found in talc carry high carcinogenic risk and cannot be excluded from public health risk assessments.<sup>3</sup>

### Section 8.2.1. Restrictive Dimensional Criteria May Exclude Potentially Relevant Particles

The reliance on a >5 µm length and ≥0.05 µm width cutoff may exclude particles that are of potential health significance.

- An epidemiological study of textile workers by Loomis et al. (2010) demonstrated that cumulative exposure to asbestos fibers of every length and diameter category was associated with an increased risk of lung cancer. While the strongest overall risk was associated with longer and thinner fibers, significant associations were also demonstrated within the ultrafine range (<0.25 µm wide) at short lengths of <5 µm and ≤1.5 µm. TEM analysis confirmed that the vast majority of airborne fibers collected in these environments fell into these short, thin categories.<sup>4</sup>
- A comprehensive review by Boulanger et al. in 2014 established that the 5 µm limit is an artifact of optical microscopy limitations, not based on scientific evidence. The study demonstrated that in samples from buildings with degraded asbestos-containing materials, the air is often dominated by short asbestos fibers. The authors stated that the

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<sup>1</sup>National Institute for Occupational Safety and Health. *Asbestos Fibers and Other Elongate Mineral Particles: State of the Science and Roadmap for Research*. Atlanta, GA: US Dept of Health and Human Services, Centers for Disease Control and Prevention; 2011. Current Intelligence Bulletin 62. DHHS (NIOSH) Publication No. 2011-159. <https://stacks.cdc.gov/view/cdc/5892>.

<sup>2</sup>European Parliament, Council of the European Union. Directive (EU) 2023/2668 of the European Parliament and of the Council of 22 November 2023 amending Directive 2009/148/EC on the protection of workers from the risks related to exposure to asbestos at work. *Off J Eur Union*. 2023;L 2023/2668. <http://data.europa.eu/eli/dir/2023/2668/oj>.

<sup>3</sup>French Agency for Food, Environmental and Occupational Health & Safety (ANSES). *Opinion and Report on the Risks Related to Talc Containing Cleavage Fragments*. Maisons-Alfort, France: ANSES; 2015. ANSES Opinion/Report 2009-SA-0332. <https://www.anses.fr/en/system/files/AIR2009sa0332RaEN.pdf>.

<sup>4</sup>Loomis D, Dement JM, Elliott L, Richardson D, Kuempel ED, Stayner L. Asbestos fibre dimensions and lung cancer mortality among workers exposed to chrysotile. *Occup Environ Med*. 2010;67(9):580-586. doi:10.1136/oem.2009.050120. <https://pmc.ncbi.nlm.nih.gov/articles/PMC2975987/>.



pathogenicity of shorter fibers cannot be ruled out, and that their inclusion must be considered for risk assessment and regulation.<sup>5</sup>

- International regulatory updates, such as European Union Directive 2023/2668, have legally mandated regulatory frameworks that allow for the inclusion of ultrafine fibers below 0.2  $\mu\text{m}$  wide.<sup>6</sup>

In conclusion, because the binary classification of particles is at odds with health based monitoring, I urge the subcommittee and the main committee to vote WK92083 down.

Submitted respectfully,

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EWG

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<sup>5</sup> Boulanger G, Andujar P, Pairon JC, et al. Quantification of short and long asbestos fibers to assess asbestos exposure: a review of fiber size toxicity. *Environ Health*. 2014;13:59. doi:10.1186/1476-069X-13-59. <https://pubmed.ncbi.nlm.nih.gov/25043725/>.

<sup>6</sup> European Parliament, Council of the European Union. Directive (EU) 2023/2668 of the European Parliament and of the Council of 22 November 2023 amending Directive 2009/148/EC on the protection of workers from the risks related to exposure to asbestos at work. *Off J Eur Union*. 2023;L 2023/2668. <http://data.europa.eu/eli/dir/2023/2668/oj>