



February 7, 2023

Ms. Joan Lawrence, ASTM F15.22 Subcommittee Chair  
Mr. Al Kaufman, ASTM F15.22 Task Group Chair  
ASTM International  
100 Barr Harbor Drive  
West Conshohocken, PA 19428

Dear Ms. Lawrence and Mr. Kaufman:

CPSC staff<sup>1</sup> is aware of an increasing number of incidents involving water beads. Water beads may swell if ingested, aspirated, or inserted into the nose or ears, causing occlusions to the respiratory airway or gastrointestinal tract. Many incidents of water bead ingestion lead to bowel obstruction, requiring surgical intervention, while ear insertion of water beads leads to surgery, damage to the structures of the ear, and hearing loss. Even after inception of the 2016 expanding material requirements in ASTM F963, there have been at least 248 known cases as reported to the National Electronic Injury Surveillance System (NEISS) from 1/1/2017 to 11/22/2022. Of the 248 NEISS incident reports related to water beads:

- 112 were involved ingestion;
- 100 involved ear canal insertion;
- 35 involved nasal cavity insertion; and
- 1 involved eye injury<sup>2</sup>

The NEISS-reported incidents produce a national estimate for the period 2017-2021 of 4,500 emergency department visits associated with water beads.

Staff is aware of 62 specific incidents occurring from 1/1/2017 to 11/22/2022, as reported in the Consumer Product Safety Risk Management System (CPSRMS). Of the 62 CPSRMS incidents (some of which may duplicate reports from NEISS):

- 53 were reported to have involved ingestion;
- 5 involved ear canal insertion; and

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<sup>1</sup> The views expressed in this letter are those of CPSC staff, and they have not been reviewed or approved by, and may not necessarily reflect the views, of the Commission.

<sup>2</sup> While this eye injury involves insertion, CPSC staff has seen an increasing number of eye injuries from gel blasters utilizing water beads as projectiles.



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- 4 involved nasal cavity insertion.

CPSC staff attempted to identify duplicate reports; however, in some cases, the details provided in multiple reports of a single incident may have been too incomplete or contradictory to allow for all duplicate reports to be identified.

CPSC staff requests that the toy safety F15.22 subcommittee schedule a meeting to discuss the data and develop more stringent performance requirements to address these incidents. The dimensions on which CPSC staff seeks consultation include whether (1) F963's 20 mm gap is too large (particularly given the younger ages seen in incident data, as young as 10 months old), and (2) the 20 N force applied is too strong. We caution, however, that such changes may address only gastrointestinal blockage and not ear or nose insertion hazard patterns, or other as yet unidentified hazards related to this product.

If you have any questions, or need additional information about any of these matters, you can contact me at: [bmordecai@cpsc.gov](mailto:bmordecai@cpsc.gov), or (301) 987-2506.

Sincerely,

*Benjamin Mordecai*

Benjamin Mordecai Mechanical Engineer  
Project Manager, F963

Cc: Molly Lynyak, ASTM F15 Staff Manager  
Susan Bathalon, Children's Program Area Risk Manager  
Jacqueline Campbell, CPSC Voluntary Standards Coordinator

Enclosure(s):