US Consumer Product Safety Commission
Log of Meeting

Subject: ASTM F15.72 Flame Mitigation Devices (FMDs) on Disposable Fuel Containers
Date: September 5, 2019
Location: Teleconference
Prepared By: Scott Ayers (sayers@cpsc.gov, 301-987-2030), September 5, 2019

CPSC Participants:
Scott Ayers, Jacqueline Campbell, Jonathan Kent, Kristen Talcott, Mark Eilbert, and Sandy Inkster

Non-CPSC Participants:
Josh Dinaburg of Jensen Hughes
Andy Minister (Fire Protection Engineer)
Cheryl Atkinson of the Portable Fuel Container Manufacturers Association
Jennifer Bell of Chamberhill Strategies
Kim Hoarle of the American Burn Association
Jim McGorman (Physician)
Mike Stern of Exponent
JF Lalande of Health Canada
Shaan Rashid of Health Canada
Harold Cunningham of Vexa Engineering
Martin Bennet (retired CPSC compliance officer)

Summary of Meeting:

Introductions. Those in attendance announced their presence.

Discussion on the research conducted by Jensen Hughes. Josh Dinaburg of Jensen Hughes updated the group on the progress of the test development contract. Testing found that squeezing caused a decrease in passing flame arrestor size of about 5 % for gases. Further testing with liquid ethanol found a decrease in passing flame arrestor size of no more than 6 to 7 %; difficulties of testing with a liquid made it difficult to get any further resolution. Josh suggests that this result was sufficiently close to the performance of gases to suggest no unforeseen differences with liquids compared to gases. While squeezing makes a measurable impact, the magnitude of the impact is not as great as using a more severe test gas. Therefore, he recommends using ethylene as the test gas for all liquids with an MESG equal to or greater than ethanol because it is the most severe MESG of the known liquids used as fuels by consumers.

Josh did find another unexpected result in testing. When testing with certain plastic flame arrestors, he noticed that direct flame impingement caused the plastic to swell and the hole sizes to shrink. Flame arrestors with hole sizes that should fail the test were passing because of the swelling. Therefore, Josh recommends an additional test for all FMDs, regardless of material, using an attached tube that is ignited by a flame some distance from the FMD. This additional

test would characterize the propensity of FMDs to stop an external flame front from entering the container.

Discussion on the draft standard sent to the group for review. Scott Ayers sent a draft standard for the group to review based on the findings from the Jensen Hughes research. Scott shared advice given to him from ASTM staff that for a new standard, when it needs to be sent to the sub-committee for a first ballot, that it should be about 60% complete. This allows for possible new stakeholders to understand the proposed standard, but still leave room for additional changes. Scott asked the group to comment on the current draft standard. Mike Stern of Exponent raised some questions of clarity in performing the new test, but felt they did not need to be addressed before the ballot. Cheryl Atkinson of the Portable Fuel Container Manufacturers Association sent Scott proposed changes for section 1.4 of the standard in regards to what the standard is addressing. The group agreed that Cheryl's comments should be incorporated into the current language in section 1.4 before sending it to ballot. The group discussed editorial comments made by Cheryl Atkinson, Sandy Inkster of CPSC, and Martin Bennet and agreed that these comments should be addressed before sending it to ballot. The group discussed the maximum container size in the scope and agreed that a value of 20 L or 5 gal should be added to the scope before sending it to ballot.

The group agreed that all the proposed changes discussed could be incorporated offline by Cheryl Atkinson and Scott Ayers and that no further meetings were necessary before sending the draft standard to ballot.

Discussion on the next steps. Scott Ayers and Cheryl Atkinson will find a time in the near future to address all the comments that the group agreed were needed before sending the draft standard to ballot. Scott will then work with ASTM to ballot the draft standard to the subcommittee. Subcommittee members are encouraged to comment on the draft and to vote to approve or reject the standard, as Scott expects the second ballot to be concurrent with the main committee and subcommittee. Once the ballot closes and the results are compiled, Scott will send out a meeting notice to schedule meetings to address comments and begin the process of taking the draft standard to the next ballot. Scott believes that timeframe to be approximately November.