



February 15, 2024

Ms. Julie Heckman  
Executive Director  
American Pyrotechnics Association (APA)  
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**Subject: CPSC Staff Comments to Proposed Changes to APA Std 87-1A**

Dear Ms. Heckman:

The U.S. Consumer Product Safety Commission (CPSC) staff<sup>1</sup> appreciates the opportunity to comment on the proposed revisions to the 2023 American Pyrotechnics Association (APA) Standard 87-1A: *Standard for the Construction, Classification, Approval and Transportation of Consumer Fireworks and Novelties* and the 2023 APA Standard 87-1A (CHEM): *Chemicals Permitted in Consumer Fireworks and Novelties*.

Having reviewed the proposed revisions, CPSC staff provides the following comments on, and seeks additional information regarding, the **2023 APA Standard 87-1A**:

- Under Part 2, Section 2.4 General Requirements, Reloadable Kits and Part 3, Section 3.2.5 Reloadable Kits, the composition weight in finished kit has been increased from 400 grams to 500 grams.
  - *What is the rationale for the increase from 400 grams (as per APA 87-1A (2018)) to 500 grams for composition weight in Reloadable Kits? All other requirements for Section 3.2.5 Reloadable Kits have remained the same, including but not limited to, composition weight per reloadable component (60 grams) and number of devices per kit or inner packaging (12).*
- Appendix I: Permitted and Restricted Chemical Table for Consumer Fireworks and Novelties (APA 87-1A (2018)) has been removed from the proposed revision APA 87-1A (2023).
  - *Please confirm that the list of Chemicals Permitted and Restricted in Consumer Fireworks and Novelties (APA 87-1A (2018)) will now be a*

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<sup>1</sup> This letter was prepared by the CPSC staff. It has not been reviewed or approved by, and may not represent the views of, the Commission.



- stand-alone document (APA 87-1A CHEM) and will be incorporated by reference into 49 CFR 171.7 as a reference document.*
- *The 2018 APA Standards 87-1 A/B/C are currently available on the Pipeline and Hazardous Materials Safety Administration (PHMSA) website. Where will the updated 2023 APA 87-1A CHEM be made available?*
  - Appendix VI: Specific Requirements Pertaining to the Consumer Product Safety Commission (APA 87-1A (2018)) has been removed from the proposed revision APA 87-1A (2023).
    - *What is the rationale for the removal of CPSC specific requirements (Appendix VI)?*
    - *Please explain how the CPSC specific requirements (Appendix VI) will be made available to industry, for example as a separate document.*
  - Fountain powder has been removed completely from the proposed revision APA 87-1A (2023).
    - *What is the rationale for the removal of fountain powder from Sections 2.3 Definitions and Section 2.4 General Requirements?*
  - New categories of devices have been added to the proposed revision APA 87-1A (2023): (a) Novelties: Christmas Crackers / Holiday Crackers and Pulling Snaps. (b) Ground Devices: Fuseless Firecrackers and Pull String Smoke.
    - *CPSC staff has reviewed the General and Specific Requirements for each of the devices added to the new categories. CPSC staff agrees that these devices warrant their own category and with the additions.*
  - Under Part 3, Section 3.2.3.5 Mine Preloaded, the Special Conditions is marked “No”, however, special conditions have been added.
    - *It appears to staff that special conditions should be marked as “Yes,” if the intention is for it to remain marked “No,” please explain.*
  - Under Part 3, Section 3.2.6.1 Fuse, the predetermined burn rate has been changed to “no faster than 10 cm (4”) per second”.
    - *In the previous APA 87-1A (2018), the predetermined burn rate was “no faster than 2.5 cm (1”) per second”. What is the rationale for changing the burn rate?*
    - *Under CFR Part 1507.3 Fuses (a)(2), a Fireworks devices that require a fuse shall: “Utilize only a fuse which will burn at least 3 seconds but not more than 9 seconds before ignition of the device.” CPSC staff is*



*concerned that this proposed revision to the fuse burn rate would not meet requirements under CFR Part 1507.3 Fuses (a)(2).*

CPSC staff provides the following comments and seeks additional information regarding the proposed revisions to the **2023 APA Standard 87-1A (CHEM)**:

- Additional permissible chemicals have been added to the Permitted and Restricted Chemical Table for Consumer Fireworks and Novelties (2023 APA 87-1A CHEM).
  - *Have all the new chemicals added been reviewed and approved by the Pipeline and Hazardous Materials Safety Administration (PHMSA)?*
  - *Please provide the information that APA relied on to assess the safety of permitting these additional chemicals.*
  
- The restrictions for several chemicals used for fuels (for example aluminum > 149 microns) and several chemicals used for whistle/color agents (for example sodium benzoate > 149 microns) have been modified to: “The individual or combined use of metal powders greater than 149 microns, with benzoates, phthalates, salicylates, and terephthalates, must not exceed 10 percent of a burst charge formulation or 30 percent of a propellant formulation by weight”.
  - *In the previous APA 87-1A (2018), the restrictions for these chemicals (fuel and whistle > 149 micron) in the burst charge stated, “Not to exceed 10 percent by weight in a burst charge formulation....” The proposed revision APA 87-1A CHEM (2023) clarifies that any individual or combined use of these metals/whistles in the burst charge formulation would be limited to 10 percent. CPSC staff agrees with the update to this restriction.*
  - *In the previous APA 87-1A (2018), the restrictions for metallic fuels > 149 micron in the propellant charge stated, “Not to exceed 10 percent by weight in a burst charge formulation or a propellant formulation” and whistle/color agents had no restrictions pertaining to the propellant formulation. What is the rationale for changing any individual or combined use of these metals/whistles in the propellant formulation to 30 percent? CPSC staff is concerned that this change could reduce safety. Please provide additional information for this change.*
  
- The number of restrictions for chlorates (barium, potassium, sodium), as an oxygen donor, have been expanded from three (APA 87-1A (2018)) to four (APA 87-1A CHEM (2023)).
  - *A new restriction (#1) has been added, “Prohibited in formulations with Cupric Salts (Copper II Salts).” CPSC staff agrees with the addition of this restriction for chlorates (barium, potassium, sodium).*



- *Several devices have been added to the list (#4) of “Permitted in...” for chlorates (barium, potassium, sodium). The addition of pull string smoke devices to this list may be misinterpreted as being allowed, although smoke devices must meet the restriction listed under # 2: “In smoke formulations an equal or greater weight of bicarbonates or carbonates is required”.*
- A separate table has been created for chemicals in smoke dyes, “Permitted Smoke Dyes for Consumer Fireworks and Novelties (APA 87-1A 2023 Edition)”.
  - *CPSC staff agrees that having a separate table specific for smoke dyes provides clarification and could help users of the standard avoid mistakes.*

Sincerely,

Matthew Roemer, Chemist  
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*Division of Chemistry; Laboratory Sciences*