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CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Parts 1500 and 1507

[Docket No. CPSC-2006-0034]

Amendments to Fireworks Regulations

AGENCY: Consumer Product Safety Commission.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Consumer Product Safety Commission (Commission or CPSC) proposes to amend its regulations regarding fireworks devices under the Federal Hazardous Substances Act. The proposed amendments are based on the Commission's review of its existing fireworks regulations, the current fireworks market, changes in technology, existing fireworks standards, and safety issues associated with fireworks devices. The proposed amendments would create new requirements and modify or clarify existing requirements. Some of the proposed revisions would align with existing fireworks standards or codify the Commission's existing testing practices. The Commission believes that the proposed requirements would improve consumer safety by codifying limits, test procedures, and requirements that would reduce the risk of injury to consumers and clarifying existing requirements to promote compliance.

DATES: Submit comments by [INSERT DATE 75 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Comments, identified by Docket No. CPSC-2006-0034, may be submitted electronically or in writing:

Electronic Submissions: The Commission encourages you to submit electronic comments by using the Federal eRulemaking Portal. You may submit electronic comments to the Federal

eRulemaking Portal at: <http://www.regulations.gov>, by following the instructions for submitting comments. The Commission does not accept comments submitted by electronic mail (e-mail), except through www.regulations.gov.

Written Submissions: Submit written comments by mail, hand delivery, or courier to: Office of the Secretary, Consumer Product Safety Commission, Room 820, 4330 East West Highway, Bethesda, MD 20814; telephone (301) 504-7923.

Instructions: All submissions must include the agency name and docket number for this proposed rulemaking. All comments may be posted to <http://www.regulations.gov> without change, including any personal identifiers, contact information, or other personal information. Do not submit confidential business information, trade secret information, or other sensitive or protected information that you do not want to be available to the public. If you submit such information, the Commission recommends that you do so by mail, hand delivery, or courier.

Docket: To read background documents or comments regarding this proposed rulemaking, go to: <http://www.regulations.gov>, insert docket number CPSC-2006-0034 in the “Search” box, and follow the prompts.

FOR FURTHER INFORMATION CONTACT: Rodney Valliere, Project Manager, Directorate for Laboratory Sciences, U.S. Consumer Product Safety Commission, 5 Research Place, Rockville, MD 20850; telephone: 301-987-2526; e-mail: RValliere@cpsc.gov.

SUPPLEMENTARY INFORMATION:

I. Background

The Federal Hazardous Substances Act (FHSA; 15 U.S.C. 1261-1278) authorizes the CPSC to regulate hazardous substances, which include fireworks devices. 15 U.S.C. 1262. The Commission assumed responsibility for administering the FHSA on May 14, 1973. *Id.*

at 2079(a). Previously, the U.S. Department of Health, Education, and Welfare exercised this authority and the U.S. Food and Drug Administration (FDA), an agency within that department, issued regulations governing fireworks and other hazardous substances. When the Commission assumed responsibility, it adopted the existing FDA regulations, transferring them from 21 CFR part 191 to 16 CFR part 1500. 38 FR 27,012 (Sept. 27, 1973). These regulations included requirements limiting the pyrotechnic composition of fireworks devices “intended to produce audible effects” to two grains; carving out an exception to that regulatory limit for wildlife management purposes; and exempting certain packaged fireworks assortments from full labeling requirements for hazardous substances under the FHSA.

Since assuming responsibility for the FHSA, the Commission has added provisions to the fireworks regulations, which are now in 16 CFR parts 1500 and 1507. These additions include labeling requirements; prohibitions of certain chemicals; performance requirements for specific devices and features; bans (except for wildlife management purposes) on firecrackers that contain more than 50 milligrams (mg) (0.772 grains) of pyrotechnic composition, specific devices, and devices that do not comply with part 1507; bans on reloadable tube aerial shell devices with shells larger than 1.75 inches in outer diameter; requirements for a stability test for large multiple-tube fireworks devices; and an increase in the longest permissible time for a fuse to burn to 9 seconds. 61 FR 67,197 (Dec. 20, 1996); 61 FR 13,084 (Mar. 26, 1996); 56 FR 37,831 (Aug. 9, 1991); 49 FR 50,374 (Dec. 28, 1984); 41 FR 22,931 (June 8, 1976).

The Commission has also taken steps to review the fireworks regulations, generally, in more recent years. CPSC issued an advance notice of proposed rulemaking (ANPR) in

2006 to explore alternatives for addressing fireworks-related injuries. 71 FR 39,249 (July 12, 2006). In 2015 and 2016, the Commission reviewed all of its fireworks regulations to identify revisions or clarifications that would make them more effective at protecting the public, reflect the current market and technology, reduce burdens, and coordinate with other federal and industry standards. This notice of proposed rulemaking (NPR) is the result of that assessment.

In addition, on September 6, 2016, the Commission issued a proposed interpretive rule regarding the method of determining whether a fireworks device is “intended to produce audible effects,” for purposes of 16 CFR 1500.17(a)(3). 81 FR 61,146 (Sept. 6, 2016). The Commission requested comments regarding its proposed interpretation, and Commission staff considered those comments in developing the proposed regulatory change to 1500.17(a)(3), described in this NPR.

II. Statutory Authority, Procedure, and Other Legal Considerations

Under the FHSA, the Commission may classify a “hazardous substance” as a “banned hazardous substance” if the substance is intended or packaged in a form suitable for household use or is intended to be used by children and the Commission finds that, notwithstanding cautionary labeling required under the FHSA, the degree or nature of the hazard associated with the substance is such that public health and safety can only be adequately served by keeping the substance out of interstate commerce. 15 U.S.C. 1261(q)(1). As part of this authority, the Commission may also create design and performance standards for products that qualify as “hazardous substances,” effectively banning products that do not conform to those standards. *Forester v. Consumer Product Safety Comm’n*, 559 F.2d 774, 783 (D.C. Cir. 1977).

Fireworks are “hazardous substances,” as that term is defined in the FHSA. 15 U.S.C. 1261(f). Therefore, to ban fireworks devices or create design or performance requirements for fireworks devices, the Commission must follow the requirements for rulemaking outlined in the FHSA. Under the FHSA, the Commission must make four substantive findings to ban fireworks devices or create design or performance requirements. The first of these four findings is described in the previous paragraph and involves the adequacy of cautionary labeling to protect the public from the degree or nature of the hazard. This finding need not be included in the regulatory text. There are three additional findings that the Commission must make under the FHSA. These three findings are described in detail in the following paragraphs, and the Commission must include them in the regulations. 15 U.S.C. 1262(i)(2).

First, the Commission must find that when the entities that would be subject to the regulation have adopted a voluntary standard that relates to the risk of injury that the regulation seeks to address, either compliance with the voluntary standard is not likely to adequately reduce that risk, or there is not likely to be substantial compliance with the voluntary standard. 15 U.S.C. 1262(i)(2)(A). For the first prong of this finding, whether compliance with a voluntary standard is likely to adequately reduce a risk of injury depends on whether the risk will be reduced to such an extent that there would no longer be an unreasonable risk of injury. *See* H.R. Rep. No. 208, 97th Cong., 1st Sess. 875 (1981) (discussing the identical provision in the Consumer Product Safety Act (15 U.S.C. 2051-2089)). As for the second prong, several factors are relevant to the Commission’s assessment of compliance with a voluntary standard, including the magnitude and speed of compliance, the severity of potential injuries, the frequency of injuries and deaths, and the vulnerability of the population at risk. *See* H.R. Rep. No. 208, 97th Cong., 1st Sess. 875 (1981) (discussing the identical provision in the Consumer Product Safety

Act); *see also* 64 FR 71,888 (Dec. 22, 1999) (finding that 90% compliance with a voluntary standard for bunk beds was not “substantial”); 16 CFR part 1213, Appendix.

Second, the Commission must find that the benefits expected from the regulation bear a reasonable relationship to its costs. 15 U.S.C. 1262(i)(2)(B). The benefits of a regulation include the extent to which the regulation would reduce the likelihood and severity of injury that may result from the product. The costs include increases to the price of the product and decreases to the availability or usefulness of the product. H.R. Rep. No. 208, 97th Cong., 1st Sess. 875 (1981) (citing *Southland Mower Co. v. Consumer Product Safety Comm’n*, 619 F.2d 499 (5th Cir. 1980)).

Third, the Commission must find that the regulation imposes the least burdensome requirement that adequately reduces the risk of injury that the regulation aims to address. 15 U.S.C. 1262(i)(2)(C). To evaluate this, the Commission must compare the relative compliance costs of alternatives it considered during the rulemaking process. H.R. Rep. No. 208, 97th Cong., 1st Sess. 875 (1981).

These findings are required only for regulatory changes or additions that would ban a hazardous substance. This includes an express ban, as well as a design, performance, or other requirement that has the effect of banning a device that is not already banned. For amendments that merely clarify or ease existing requirements, these findings are not necessary because the rulemaking would not classify a substance or device as banned. *See, e.g.*, 15 U.S.C. 1261(q)(1)(B), 1262(h), 1262(i)(2) (discussing requirements to create a regulation classifying a substance as a “banned hazardous substance”). Nevertheless, such changes or additions must conform to the Administrative Procedure Act (5 U.S.C. 551-562) requirements for rulemaking, which apply to all of the changes proposed in this NPR. The Administrative Procedure Act

requires the Commission to provide interested parties with notice of a proposed rule and an opportunity to comment on it. 5 U.S.C. 553(b), (c).

In addition to the statutory requirements in the FHSA and Administrative Procedure Act that apply to rulemakings, several federal directives are relevant to this NPR. Specifically, a number of Executive Orders (E.O.s) set out rulemaking priorities, including promoting compliance by creating simple and clear regulations and eliminating requirements that are ineffective or outdated. These E.O.s also emphasize the goals of facilitating economic growth, by minimizing burdens, harmonizing with voluntary or international standards, and promoting innovation. *See* E.O. 13609, *Promoting International Regulatory Cooperation*, 77 FR 26,413 (May 4, 2012); E.O. 13563, *Improving Regulation and Regulatory Review*, 76 FR 3,821 (Jan. 18, 2011); E.O. 12866, *Regulatory Planning and Review*, 58 FR 51,735 (Oct. 4, 1993); *see also* E.O. 13579, *Regulation and Independent Regulatory Agencies*, 76 FR 41,587 (July 11, 2011). Similarly, the Office of Management and Budget's OMB Circular A-119 (OMB Circular A-119) directs agencies, including independent commissions, to use voluntary consensus standards, rather than develop new standards, whenever appropriate. OMB Circular A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities* (1998), revised on January 27, 2016. The goal of OMB Circular A-119 is for the federal government to benefit from the expertise and innovation of the private sector, eliminate costs associated with agency development of new standards, reduce the costs of industry compliance, and to support the priorities outlined in E.O.s 13609, 13563, and 12866. As an independent agency, CPSC is not required to comply with E.O.s; however, E.O. 13579 urges independent agencies to pursue the objectives expressed in E.O. 13563, and as a general matter, the Commission strives to support the principles expressed in these E.O.s to construct

streamlined and effective regulations. The requirements and revisions proposed in this NPR are intended to align with these directives by clarifying requirements, updating requirements to reflect current technology and products, and harmonizing with a recognized industry standard and other federal requirements.

III. Other Existing Fireworks Standards

There are three international or voluntary standards regarding fireworks:

- The American Pyrotechnics Association Standard 87-1: Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics (APA Standard 87-1);
- The American Fireworks Standards Laboratory's voluntary standards for consumer fireworks (AFSL Standard); and
- The European Standard EN 15947-1 to 15947-5: Pyrotechnic Articles—Fireworks, Categories 1, 2, and 3 (European Standard).

The American Pyrotechnics Association (APA) is a fireworks trade group made up of various fireworks industry members, including manufacturers, importers, and distributors. According to the group's website, its members represent approximately 85 percent of the domestic fireworks industry. APA Standard 87-1, last issued in 2001, provides definitions and requirements for various types of fireworks including consumer fireworks, novelties, theatrical pyrotechnics, and display fireworks.

The American Fireworks Standards Laboratory (AFSL) is an independent, nonprofit corporation that develops voluntary standards for consumer fireworks and serves as a third party laboratory, offering testing and certification for compliance with its standards. According to AFSL's website, its members represent 85 to 90 percent of domestic fireworks

importers. The AFSL standard, last updated in 2009, includes safety and quality standards for various types of fireworks devices, including design, performance, labeling, and shipping.

The European Standard was developed through the consensus of numerous European national standard bodies, as facilitated by the European Committee for Standardization, and reflects European legislation. This standard includes definitions, fireworks categories, labeling requirements, test methods, and construction and performance requirements.

Additionally, the U.S. Department of Transportation (DOT) has regulations relevant to consumer fireworks. DOT has jurisdiction over the transportation in commerce of hazardous materials, including consumer fireworks. 49 U.S.C. 5101-5128. Under this authority, DOT has specific regulatory requirements for fireworks and incorporates by reference APA Standard 87-1 into its regulations, insofar as it is relevant to transportation safety. 49 CFR 171.7; *see also*, 49 CFR 173.59, 173.64, 173.65.

The APA has continued to review APA Standard 87-1 and is working to issue an updated version of the standard, which DOT subsequently may incorporate by reference into its regulations, supplanting the 2001 version. The Commission is proposing to incorporate by reference portions of APA Standard 87-1 into 16 CFR parts 1500 and 1507, or otherwise align with provisions in that standard. If the APA updates APA Standard 87-1 before the Commission adopts a final rule, the Commission may adopt provisions consistent with or from the 2001 version of the standard, as proposed in this NPR, or may adopt or incorporate by reference provisions of the updated standard that are consistent with the requirements proposed in this NPR.

IV. Proposed Requirements

The Commission proposes several additions and modifications to the fireworks regulations to clarify existing requirements and to improve consumer safety. These proposed requirements fall into three categories—new hazardous substance bans, changes to ease the burdens associated with existing requirements, and clarifications. As discussed, the statutory requirements for these categories differ. To ban a hazardous substance that is not prohibited under the existing regulations, the Commission must make the findings required by the FHSA. To ease or clarify existing requirements, the Commission need not make these findings, but must comply with Administrative Procedure Act rulemaking requirements. The sections below describe the three categories of proposed requirements.

A. New Hazardous Substances Bans

The following proposed requirements would effectively ban hazardous substances that are not currently banned under CPSC’s fireworks regulations by adopting mandatory test methods, limiting device content, prohibiting particular chemicals, and adding performance requirements.

1. Adopt a Quantifiable Method of Identifying Devices that Are Limited to Two Grains of Pyrotechnic Composition (16 CFR 1500.17(a)(3))

a. Current Regulatory Requirement and Rationale

Section 1500.17(a)(3) states: “fireworks devices intended to produce audible effects” are banned hazardous substances if the audible effect is produced by a charge of more than 2 grains of pyrotechnic composition. There are essentially two parts to this requirement—first, identifying whether a fireworks device is “intended to produce audible effects,” and second, if so, measuring the pyrotechnic composition to determine if it exceeds 2 grains.

As the rulemaking that adopted this provision explained, the misuse of devices “whose audible effect is produced by a charge of more than 2 grains of pyrotechnic composition . . . [had] been the cause of most of the firework deaths and serious injuries” and the goal of the regulation was to prohibit “dangerously explosive fireworks.” 38 FR 4,666 (Feb. 20, 1973); 35 FR 7,415 (May 13, 1970); *see also*, 34 FR 260 (Jan. 8, 1969). Similarly, the Commission considered the safety need for limiting the pyrotechnic content in certain fireworks devices when it adopted the 50 mg limit for firecrackers in 1977. In the deliberations leading up to that limit, the Commission explained that incident and injury data showed a correlation between the degree of injury and the explosive power of the device involved in the injury. Most cases that resulted in death or severe injuries involved devices with “large powder accumulations.” 41 FR 9,512, 9,517 (Mar. 4, 1976). Thus, the purpose of 1500.17(a)(3) is to address injuries resulting from increased explosive power; the reference to “audible” effects was a method of identifying these devices through the type of sound the devices make and not an indication of any safety purpose relating to the loudness of devices or hearing injuries.

This regulatory history and more recent fireworks incident data demonstrate the importance of industry compliance with 1500.17(a)(3) for protecting consumers. As the 2015 Fireworks Annual Report (Fireworks Annual Report; CPSC Directorate for Epidemiology, Division of Hazard Analysis, *Fireworks-Related Deaths and Emergency Department-Treated Injuries During 2015*, June 2016, available at: http://www.cpsc.gov//Global/Research-and-Statistics/Injury-Statistics/Fuel-Lighters-and-Fireworks/Fireworks_Report_2015FINALCLEARED.pdf) demonstrates, the injuries that can result from devices that are subject to the 2-grain limit can be severe and can result in

death. Overall, nine of the 11 deaths that related to fireworks in 2015, involved devices that are commonly subject to the 2-grain limit; and over the course of 1 month in 2015, an estimated 1,200 injuries (based on a nationwide probability sample) involved devices commonly subject to the 2-grain limit. Of these estimated 1,200 injuries, 100 involved children under the age of 4 years. These incidents included deaths resulting from mortar tubes held by consumers; burns requiring a 1-month hospitalization after a reloadable aerial shell landed in a bystander's lap; and various other injuries affecting all regions of the body.

To identify devices that had a greater explosive power, and therefore, needed a limit to protect consumer safety, the FDA and the Commission opted to apply the 2-grain limit to “devices intended to produce audible effects.” At the time the limit was adopted, the focus on “devices intended to produce audible effects” was a useful way of identifying devices that had a greater explosive or energetic force. However, the fireworks industry has reported, and Commission testing indicates, that fireworks devices on the market today contain metallic fuel when they are “intended to produce an audible effect.” These metallic fuels create an explosive that is more energetic per volume than an explosive without metallic fuel.

b. Current CPSC Test Method and Alternative Test Methods

The regulations do not specify a method for identifying whether a device is “intended to produce audible effects,” and therefore, subject to the 2-grain limit. However, the CPSC Consumer Fireworks Testing Manual (CPSC Testing Manual; CPSC Directorate for Laboratory Sciences, Division of Chemistry, *Consumer Fireworks Testing Manual*, 4th ed. (Aug. 17, 2006), available at: <https://www.cpsc.gov/PageFiles/121068/testfireworks.pdf>), specifies how Commission staff

identifies these devices during field testing. In accordance with the CPSC Testing Manual, staff listens for a “loud report” when the device functions, which indicates it is “intended to produce an audible effect.” *See* section (IV)(C)(11)(e) of CPSC Testing Manual, p. 29. This involves staff listening for a sound and assessing whether that sound has the qualities characteristic of an intentional effect. It is not the noise level that is determinative; rather, staff listens for a crisp sharpness that is related to the pressure pulse associated with the ignition of flash powder. If staff hears this “loud report,” then they weigh the pyrotechnic material in the break charge (which causes the audible effect) to determine whether it exceeds the 2-grain limit. The CPSC Testing Manual does not carry the force of law; rather, it describes one option for identifying devices that are subject to the 2-grain limit. However, other options may also be valid. The Commission believes that specifying an appropriate identification method in the regulations would provide for transparency and consistency in testing, which facilitates compliance and consumer safety.

To accomplish this, Commission staff has considered the makeup and design of fireworks devices on the market today and reviewed alternative methods of identifying devices that are subject to the 2-grain limit. Based on these assessments, the Commission proposes to set forth, in the regulations, a method for identifying devices that are subject to the 2-grain limit and replace the phrase “intended to produce audible effects” to reflect that method.

Fireworks devices have evolved since CPSC adopted 1500.17(a)(3) in 1973, and now use different types of powders, which impact the sounds devices produce. The fireworks industry has moved away from using black powder in break charges, and instead, often uses hybrid powders. In addition, fireworks devices generally are made by hand,

resulting in variability in devices from the same manufacturer and lot. Different samples of the same device may not produce the same audible effects. Depending on the shell construction, packing density, and amount of powder, hybrid powders may produce audible effects intentionally or incidentally to disperse visual effects. Significant training and experience are necessary to distinguish between sounds that are an intentional effect of a fireworks device and sounds that are merely a byproduct of other effects or functions of a fireworks device. CPSC staff has substantial training and experience to make this distinction, but the Commission believes that a simpler and more quantitative test would be preferable and would facilitate consistent and accurate industry testing.

To identify a method that reflects the current design of fireworks devices, reduces the variability in judgments of whether a device is “intended to produce audible effects,” and is simple and repeatable enough for regulated entities to follow easily and consistently, the Commission has reviewed other existing methods of identifying devices subject to the 2-grain limit. The European Standard does not include any equivalent limit to 1500.17(a)(3), and many of the devices listed in the European Standard are not comparable to those sold in the United States. As such, the European Standard does not offer an alternative method that the Commission could adopt. The AFSL Standard limits the explosive composition of various devices “intended to produce reports” to 2 grains of pyrotechnic composition (“reports” is a synonym for “audible effects”). The AFSL Standard also limits break charges to containing only black powder, an equivalent nonmetallic fuel, or fuel that is empirically demonstrated to perform similarly to black powder. Thus, while the AFSL Standard provides similar limits to APA Standard 87-1, described below, it is less quantifiably precise because it provides flexibility for empirical analysis to permit various fuel types.

APA Standard 87-1, section 2.5, provides the same 2-grain (130 mg) limit as 1500.17(a)(3) on the pyrotechnic content of fireworks devices “intended to produce audible effects,” but also includes a definition, or method of identifying whether a device is “intended to produce audible effects.” If a fireworks device includes a burst charge that contains a metallic powder less than 100 mesh in particle size, then the device is “intended to produce audible effects.” Section 2.5 elaborates, stating the inverse of this test method and providing examples. This is a straightforward and objectively measurable method of determining whether a device is subject to the 2-grain limit; under this method, testers need only examine and measure the contents of the burst charge. This definition is consistent with 1500.17(a)(3), which lists devices that traditionally include metallic fuel as examples of devices “intended to produce audible effects,” such as devices that generally use flash powder, which is a mixture of an oxidizer (typically potassium perchlorate) and a metallic fuel (typically aluminum). This method is also consistent with the intended purpose of the regulation to protect consumers from the greater energetic power of certain devices and the associated safety risks.

Commission staff has conducted preliminary testing to examine the relationship between metallic content in break charges and the energy or explosive power of the fireworks device. As an example, staff examined the effect of adding aluminum, a metallic powder, to fireworks devices. As the Division of Chemistry (Chemistry) memorandum in the briefing package for this NPR explains, a quadratic analysis reveals that a 1 percent addition of aluminum increases the energy of a device by 3 percent, and that as aluminum content increases, the amount of explosive power increases, up to 25 percent aluminum content, at which point the explosive power begins to diminish. This demonstrates the

consistency between limiting metallic content in break charges and the intended safety purpose of 1500.17(a)(3)—namely, to limit the explosive power of devices, in order to reduce injuries associated with more explosive devices. Additionally, adding aluminum or other metallic content to an energetic material may increase sensitivity to impact, spark, and friction, which may present additional safety hazards.

c. Proposed Regulatory Requirement

Accordingly, the Commission proposes to adopt a method for identifying devices that are subject to the 2-grain limit that is consistent with the method in APA Standard 87-1. However, unlike APA Standard 87-1, the Commission proposes to state the criteria directly in the regulation, without referencing “devices intended to produce audible effects”; in addition, the Commission proposes to state only the general criteria for identifying these devices (*i.e.*, metallic fuel greater than 100 mesh in particle size), without the additional details in APA Standard 87-1. Although at the time it was adopted, the phrase “intended to produce audible effects” was a useful way to identify devices with greater explosive power and a correspondingly greater risk of injury, because of the current design and composition of fireworks devices, it is clearer and more direct to refer simply to their content.

To assess the CPSC Testing Manual method and the APA Standard 87-1 method, Commission staff randomly tested fireworks samples collected from the Office of Compliance from fiscal years 2014, 2015, and 2016. Using the CPSC Testing Manual method, staff found that 17 percent of the samples were “intended to produce audible effects” and exceeded the 2-grain limit. In contrast, while using the APA Standard 87-1 method, staff found that 84 percent of the samples were “intended to produce audible effects” and exceeded the 2-grain limit. Although the sample size is too small to be

conclusive, these results show a notable difference between the number of devices that qualify as “intended to produce audible effects” using the CPSC Testing Manual method and the APA Standard 87-1 method. This may be because the APA Standard 87-1 method relies on precise and quantifiable measurements, rather than experienced observation, leaving less room for interpretation.

The Commission does not propose to modify the overall requirement in 1500.17(a)(3); rather the Commission proposes to specify the composition that identifies a device as subject to the 2-grain limit and otherwise retain the 2-grain limit. For consistency, the Commission also proposes to replace references to “audible effects” throughout the regulations. Because the regulations currently do not require any particular method of identifying which devices are subject to the 2-grain limit, requiring the use of a specific method creates a new requirement. Additionally, consistent with the comparative test data, the proposed method likely would identify more devices as subject to the 2-grain limit than the current CPSC Testing Manual method. Therefore, the practical effect of adopting the proposed method of identifying whether a device is “intended to produce audible effects” is that the Commission would ban more devices than it currently considers banned.

It is important to note that the proposed revision to 1500.17(a)(3), which focuses on the metallic content of the device, would reduce the scope of fireworks devices that are subject to the 2-grain limit because the proposed revision does not limit the content of devices containing black powder only. However, the Commission believes that reducing the scope will not decrease the level of protection that the regulation provides because the Commission is not aware of any devices on the market that fall within the scope of the current regulation, but outside the scope of the proposed regulation. Under the current

method CPSC staff uses, devices that produce a “loud report” are limited to 2 grains of pyrotechnic composition; this limit applies whether the device contains metallic fuel or only black powder. Under the proposed regulation, only devices that contain metallic fuel less than 100 mesh in particle size are limited to 2 grains of pyrotechnic composition. Therefore, the proposed provision does not limit the content of devices that contain only black powder. However, Commission staff’s extensive experience observing and testing fireworks devices indicates that there are no devices currently on the market that contain only black powder and produce a “loud report,” subjecting them to the 2-grain limit. Consequently, like the proposed regulation, the current method, in effect, does not limit the pyrotechnic composition of devices that contain only black powder. Nevertheless, to address this difference, and because a device containing large amounts of only black powder could potentially pose a safety hazard to consumers, the Commission is proposing limits to the pyrotechnic weight in various aerial and ground devices. These limits are discussed in Section IV.A.2., below.

In addition, the Commission is considering limiting metallic powders with larger particle sizes in break charges or reports, possibly by limiting the permissible size and/or the permissible percentage of such metal powders.

d. FHSA Findings

i. Finding 1: Public Health and Safety

In previous rulemakings supporting the 2-grain limit in 1500.17(a)(3), the Commission has found that the degree and nature of the hazard associated with the devices subject to that limit are such that public health and safety necessitate the Commission banning devices that exceed that limit. The proposed method of identifying these devices

supports and furthers that necessary ban by providing a quantifiable and reliable method of identifying these particularly explosive devices. As the Fireworks Annual Report indicates, serious injuries and deaths still occur that are associated with devices commonly subject to this limit, including injuries to young children. In addition, as staff's testing indicates, the current test method identifies fewer devices as being subject to the 2-grain limit than the APA Standard 87-1 method. Therefore, the Commission believes that the proposed method is necessary to protect consumer safety because a more straightforward, quantifiable, and repeatable test method that does not require extensive training and experience will more-consistently identify devices that need to be limited to 2 grains of pyrotechnic composition. Consequently, this method will be more effective in keeping such devices off the market.

ii. Finding 2: Voluntary Standards

The Commission evaluated compliance with the 2-grain limit provision in APA Standard 87-1. The Commission believes that the test method is effective since it is a consistent and reliable method for identifying more explosive devices, such that the Commission is proposing to adopt the same method. However, the Commission does not believe that there is likely to be substantial compliance with that provision of APA Standard 87-1. The Commission's preliminary testing of samples collected from the Office of Compliance revealed that 84 percent (54 of 64) of devices analyzed using the APA Standard 87-1 method met that standard's definition of devices "intended to produce audible effects" and exceeded the 2-grain limit, in violation of the standard. Moreover, the severity of the potential injuries shown in CPSC's incident data (including severe burns and death) and the vulnerability of the population at risk (including young children, as indicated in the Fireworks Annual Report) indicate the need for a high level of compliance. As discussed

above, these factors are relevant to assessing whether there is likely to be “substantial compliance” with a voluntary standard. Therefore, the Commission believes that there is not likely to be substantial compliance with the voluntary standard, so a regulatory requirement is necessary.

iii. Finding 3: Costs and Benefits

The Commission believes that the benefits of the proposed requirement bear a reasonable relationship to its costs. The benefits include reducing the likelihood and severity of injury by providing a simpler and more consistent means of identifying devices that have comparatively high explosive powers. As the Directorate for Economic Analysis (EC) memorandum in the briefing package for this NPR indicates, the costs of this requirement are likely to be low. Based on CPSC testing of fireworks samples, there may be a low level of compliance with the comparable provision in APA Standard 87-1; however, the costs associated with changes that would bring noncompliant devices into compliance are likely to be low. Any entities that do not already comply with the provision in APA Standard 87-1 would need to replace metallic powders with nonmetallic powder, or reduce the amount of metallic powders in their devices. Because manufacturers already use both types of powders in devices, and the costs of the two types are comparable, the costs are likely to be low.

iv. Finding 4: Alternatives

The Commission believes that the proposed requirement is the least burdensome option that meets the safety goal of this provision. The Commission examined several test methods, including the method in the CPSC Testing Manual, a method based on explosive force, APA Standard 87-1, the AFSL Standard, and the European Standard. The method in the CPSC Testing Manual requires highly experienced and trained testers to distinguish

devices by listening to them; this requires highly-specialized testers, and as the testing data suggests, this leads to comparatively fewer devices being identified as subject to the 2-grain limit. The AFSL Standard is more stringent than APA Standard 87-1, limiting break charges to black powder; but it is also less precise, allowing for equivalent nonmetallic fuel or fuel that is empirically shown to be like black powder. This less-defined standard creates a burden for testing various powders or strictly limits devices to black powder. The European Standard limits pyrotechnic composition differently for various devices, but these devices do not all correlate with devices available on the U.S. market. Consequently, the method the Commission proposes in this NPR is the least burdensome alternative because it provides a simple, precise, and quantifiable method of identifying devices that are subject to the 2-grain limit, minimizing the training needed, and eliminating the need to test the characteristics of various powders.

e. Enforcement Discretion for Minimal Contamination

The proposed requirement would ban devices that contain any amount of metallic powder less than 100 mesh in particle size in the burst charge, when the burst charge is produced by more than 2 grains of pyrotechnic content. However, the Commission recognizes that it may be difficult to ensure that there is no such metallic powder present due to potential contamination from visual effects or environmental contamination, and it may be difficult to consistently identify the presence of metallic powder because of detection limitations and variation. Consequently, the Commission will allow for minimal contamination of up to, but not exceeding, 1.00 percent of metallic powder in burst charges that are subject to 1500.17(a)(3).

The Commission believes that the presence of a metal, such as aluminum, in trace amounts would not pose an increased safety risk to consumers because a scarce amount of contaminant would not significantly add to the energy of the explosive. As the Chemistry memorandum in the briefing package for this NPR explains, staff's preliminary testing revealed that metallic content used in visual effects may inadvertently contaminate break charge content at very low levels. Staff found that when contamination occurred, the contamination level in the break charge was generally less than 1 percent. In addition, different detection instruments can vary in the particle sizes and metallic content levels they detect. Staff evaluated the detection levels of Inductively Coupled Plasma-Optical Emission Spectroscopy (ICP-OES) and X-Ray Fluorescence (XRF) and found that they produced largely similar results but can identify metallic content at slightly different levels. Commission staff believes that both ICP-OES and XRF are viable instruments for assessing compliance with proposed 1500.17(a)(3).

To account for these variables, the Commission will exercise enforcement discretion to allow up to, but not exceeding, 1.00 percent contamination of metallic powder in a burst charge. The Commission believes that 1.00 percent is an appropriate level for two reasons. First, 1.00 percent would allow for unintentional contamination at the levels Commission staff has seen are common in fireworks devices. As the Chemistry memorandum explains, staff's preliminary testing reveals that when metallic content present in visual effects inadvertently contaminates a break charge, it is generally at levels below 0.4 percent; a 1.00 percent allowance should adequately allow for inadvertent contamination. Second, the increase in explosive force from 1.00 percent metallic fuel contamination is minimal, and the Commission believes that it does not present a notable increase in the safety risk to the

public. As staff's preliminary testing indicates, a 1.00 percent increase in metallic content increases the energy of a device by 3 percent (using aluminum as an example), and further increases in metallic content correspondingly increase the explosive power of the device up to 25 percent, at which point the explosive power begins to diminish. Thus, contamination up to 1.00 percent likely does not notably increase the risk to consumers.

2. Limit Chemical Composition and Pyrotechnic Weight (16 CFR 1500.17(a))

a. Rationale for Limiting Chemical Composition and Pyrotechnic Weight and Relevant Provisions in Voluntary Standards

As discussed, the amount of pyrotechnic material in a fireworks device directly relates to the energetic power of the device, and greater energetic power presents increased safety risks to consumers. To mitigate this risk, 1500.17(a)(3) limits the pyrotechnic material in fireworks devices that are "intended to produce audible effects." However, this risk also exists for devices that do not fall within that category. To address this, each of the voluntary and international standards on fireworks also limits the chemical composition and pyrotechnic weight of various devices. The specific limits vary with the type of device. For certain devices, the pyrotechnic weight limits address the proportion of break charge relative to the chemical composition or effects. This protects the public because a large proportion of break charge relative to effects may disperse the effects further and injure bystanders or ignite nearby property.

Currently, CPSC's fireworks regulations do not include such limits, except for certain devices, such as party poppers and firecrackers. The Commission proposes to adopt such limits to reduce the safety risks associated with higher levels of particular chemical compositions and ratios of pyrotechnic weight in specific devices.

Each of the voluntary and international standards limits different devices (some of which overlap), and some of the limits differ. These limits are in section 3.1.1 and 3.1.3 (ground devices) and 3.1.2 (aerial devices) of APA Standard 87-1; in sections 2-1.8, 2-2, 2-3, and 2-4 of the AFSL Standard; and in Table 1 in part 5 of the European Standard. The APA Standard 87-1 limits specify a maximum chemical composition for components, lift charges, and devices, and a maximum ratio of burst charge to total weight of chemical composition. The AFSL Standard does the same, but with some different limits and with allowances for alternate lesser ratios and different device designs. The European Standard lists 30 different devices with corresponding net explosive content limits. However, the devices listed in the European Standard do not fully correspond with devices available in the U.S. market.

b. Proposed Regulatory Requirements

The Commission proposes to incorporate by reference the limits in APA Standard 87-1 for mine and shell devices, aerial shell kits (reloadable tube), cylindrical fountains, cone fountains, illuminating torches, wheels, and chasers, with one modification. The categories of devices listed in APA Standard 87-1 are similar to the device delineations in the regulations with which regulated entities are already familiar. They also largely comply with APA Standard 87-1 for transportation purposes, and the Commission believes these limits provide for consumer safety by limiting the explosive power of devices.

The Commission proposes to modify the provisions in APA Standard 87-1, which it proposes to incorporate by reference into the regulation, by including an additional provision that limits the explosive force of certain aerial devices. For mine and shell devices and aerial shell kits (reloadable tube), the Commission proposes to specify, in addition to the provisions in APA Standard 87-1, that the lift charge of each shell is limited to black powder (potassium nitrate,

sulfur, and charcoal) or similar pyrotechnic composition without metallic fuel. This aligns with the safety rationale regarding metallic fuel discussed above—namely, that metallic fuels can make an explosive more energetic per volume than devices that do not contain metallic powder; so limiting the lift charge of certain aerial devices to contain only black powder (*i.e.*, nonmetallic fuel), would limit the explosive power of those devices.

Although the provisions that the Commission proposes align with APA Standard 87-1's limits on chemical composition and pyrotechnic weights for aerial and ground devices, they differ from the voluntary standard in three ways. First, the Commission's proposed requirement does not include details about specific devices (*e.g.*, descriptions) that it believes are unnecessary for these limits. Second, the Commission's proposed requirement includes additional information that clarifies the scope of the limits. The Commission believes that these differences are necessary to establish a clear requirement. Third, the Commission proposes to adopt limits for only some ground devices, excluding some of the ground devices listed in APA Standard 87-1, including ground spinners, flitter sparklers, toy smoke devices, and sparklers. The Commission is omitting these devices because, based on incident and injury data, the Commission does not believe these devices pose significant safety hazards to consumers to necessitate limits on their compositions.

As discussed, the proposed revision to 1500.17(a)(3), which focuses on the metallic content of devices, would reduce the scope of fireworks devices that are subject to the 2-grain limit. Specifically, under the current regulation and CPSC staff's current test method, the 2-grain limit applies to any device that produces a "loud report," whether it contains metallic fuel or only black powder; under the proposed requirement, the 2-grain limit would apply only to devices that contain metallic fuel and not devices that contain only black

powder. The proposed pyrotechnic weight limits for aerial devices fills the gap created by this change, by limiting the explosive force of devices regardless of whether they contain metallic fuel or only black powder. To provide comparable limits for ground devices, the Commission also proposes to adopt the pyrotechnic weight limits for ground devices that are in APA Standard 87-1. Limits for ground devices will also compensate for the reduced scope that the proposed 1500.17(a)(3) creates, by preventing ground devices from containing large amounts of black powder. The Commission believes that these limits are necessary to protect the public because devices containing a large amount of black powder can pose a safety hazard; therefore, it is necessary to limit the power of devices that contain only black powder, as well as devices containing metallic powder.

The proposed limits on chemical composition and pyrotechnic weight would create new limits on fireworks devices that do not currently exist in the regulations, thereby creating a new ban of hazardous substances that currently are not prohibited.

c. FHSA Findings

i. Finding 1: Public Health and Safety

Fireworks devices with greater explosive content may contribute to more severe injuries and deaths than devices with less explosive power and labeling required by section 2(p)(1) of the FHSA is not adequate to protect the public health and safety. *See* 15 U.S.C. 1261(p)(1). Therefore, for the same reasons supporting the 2-grain limit in 1500.17(a)(3), the Commission believes that chemical composition and pyrotechnic weight, including content ratios, need to be limited in devices that are not subject to 1500.17(a)(3) to protect the public from the safety risks of devices with high explosive content and those containing only black powder.

ii. Finding 2: Voluntary Standards

With respect to the first prong of this finding, the Commission believes that compliance with the voluntary standard is likely to reduce the risk of injury, because the limits in the voluntary standard effectively reduce the explosive power of devices, which is why the Commission proposes to incorporate by reference the limits in the voluntary standard. As for the second prong of the finding, however, the Commission believes that there is not likely to be substantial compliance with the voluntary standard. Commission staff randomly tested fiscal year 2014 and 2015 fireworks samples collected by the Office of Compliance to evaluate compliance with the various limits in APA Standard 87-1. Staff analyzed 42 devices in total (12 reloadable aerial shell devices and 30 multiple-tube mine and shell devices). Although the sample size of this testing is insufficient to draw definitive conclusions, the results, nevertheless, are informative. Two (17%) of the 12 reloadable aerial shell devices and 8 (27%) of the 30 multiple-tube mine and shell devices staff tested exceeded the permissible break charge-to-effect ratio specified in APA Standard 87-1. None of either type of device exceeded the maximum lift charge provided in APA Standard 87-1. Additionally, none of the reloadable aerial shell devices exceeded the total pyrotechnic composition limits in APA Standard 87-1, while 6 (20%) of the multiple-tube mine and shell devices exceeded those limits. The Commission does not have information regarding industry compliance with the limits on ground devices set forth in APA Standard 87-1, and requests such information and relevant data.

As the preliminary testing staff conducted showed, between 15 percent and 30 percent of tested devices did not comply with some portion of APA Standard 87-1's limits on chemical composition and pyrotechnic weight. Moreover, the potential severity of injuries and death

associated with devices with greater explosive power, described in the previous section, indicate the need for particularly high compliance levels.

iii. Finding 3: Costs and Benefits

The Commission believes that the benefits and costs of the proposed requirement bear a reasonable relationship because the minimal costs associated with limiting the content of fireworks devices are reasonable in light of the benefits to consumer safety. Benefits include reducing the presence of more-energetic devices on the market, which pose an increased safety risk to consumers. Anticipated costs include implementing quality control measures to ensure devices do not contain more than the proscribed limits; these quality control measures may include acquiring smaller measuring devices, which is likely low in cost. The proposed requirements are not expected to eliminate any products from the market because devices that are noncompliant could function as well if they complied with the proposed limits, and the Commission does not expect that manufacturers will have to redesign their products.

iv. Finding 4: Alternatives

Given the minimal burden this requirement would create, the Commission believes that the proposed limits on chemical composition and pyrotechnic weight are the least burdensome way to achieve the safety purpose of the proposed requirement. In comparison to the AFSL and European Standards, the categories of devices listed in APA Standard 87-1 are similar to the device delineations in the regulations with which regulated entities are already familiar. They also largely comply with APA Standard 87-1 for transportation purposes because DOT incorporates that standard by reference into its regulations. The only substantial difference between APA Standard 87-1 and the proposed requirement is that the proposed requirement does not include all of the ground devices that APA Standard 87-1 lists. This is because the

Commission does not have data indicating that those ground devices pose significant safety hazards to consumers. As such, the Commission does not believe that limits for those devices are necessary, and there would not be adequate support to justify the FHSA findings.

3. Add Hexachlorobenzene and Lead Tetroxide and Other Lead Compounds to the List of Prohibited Chemicals (16 CFR 1507.2)

a. Proposed Requirements and Rationale

The Commission proposes to add hexachlorobenzene (HCB) and lead tetroxide and other lead compounds to the list of prohibited chemicals in 1507.2. Various studies indicate that fireworks devices contain HCB and lead tetroxide or other lead compounds. Specifically, studies have found HCB in 25 percent to 53 percent of fireworks samples, depending on the study and in concentrations up to 4.4 percent. *See* Fireworks NPR Briefing Package, Health Sciences Memorandum (Tab A of NPR Briefing Package), for further discussion of these studies. Testing by AFSL and CPSC has found lead compounds in 9 percent to 38 percent of fireworks samples, depending on the study, and in concentrations greater than 0.25 percent.

HCB and lead tetroxide and other lead compounds can be released into the environment when fireworks containing them explode; and although the Commission has not conducted an exposure analysis, the public can absorb both chemicals into their bodies through inhalation or surface contact. Moreover, both of these chemicals are likely carcinogenic and are toxic to humans. HCB is associated with numerous serious health effects, including developmental and reproductive toxicity, liver toxicity, and cancer, and can be passed to offspring. Absorption of lead compounds also can have serious impacts on neurological, reproductive, renal, cardiovascular, gastrointestinal, and hematological functions, particularly in children, and can be passed to offspring. The Commission proposes to prohibit fireworks devices from containing

these chemicals. This proposed provision covers only health effects relating to non-carcinogenic liver effects and developmental effects including anatomical variations or delayed development (but not including malformations) associated with HCB and hematological, gastrointestinal, cardiovascular, renal, and neurological toxicity associated with lead tetroxide and other lead compounds.

The FHSA authorizes the Commission to declare a substance or mixture of substances to be a hazardous substance within the scope of the FHSA, if it finds that the substance meets one of the categories described in section 2(f)(1)(A) of the statute. 15 U.S.C. 1262(a)(1). Section 2(f)(1)(A) of the FHSA lists various characteristics that qualify a substance as a “hazardous substance.” *Id.* at 1261(f)(1)(A). One of these characteristics is that the substance is “toxic,” which the FHSA defines as a substance “which has the capacity to produce personal injury or illness to man through ingestion, inhalation, or absorption through any body surface.” *Id.* at 1261(f)(1)(A), 1261(g). In addition to meeting the definition of “toxic,” the Commission must also determine that the substance “may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use” in order to be a “hazardous substance” under the FHSA. *Id.* at 1261(f)(1).

As described in the Health Sciences memorandum in Tab A of the briefing package for this NPR, Commission staff believes that fireworks devices containing HCB or lead tetroxide or other lead compounds present toxicological hazards that can be absorbed into the human body; these substances have been demonstrated to be harmful to human health; and fireworks devices have been found to contain these chemicals. Therefore, the Commission believes that there is support to find that fireworks devices containing HCB or lead tetroxide or other lead compounds

are “toxic” within the definition in the FHSA and may cause substantial illness as a result of reasonably foreseeable handling, use, or contact with such devices.

All three voluntary and international standards regarding fireworks include some prohibition of lead compounds, HCB, or both. Although the three standards are similar, each addresses limits on HCB and lead compounds differently. Table 1 outlines the relevant requirements in each of the three standards, as well as the current CPSC regulations.

TABLE 1. *Limits on HCB and Lead Compounds in Fireworks Devices.*

	HCB	Lead Compounds
Current § 1507.2	Not listed	No limit
APA Standard 87-1 ¹	Not listed	Prohibited at concentrations of 0.25% by weight or more
AFSL Standard ²	Prohibited at concentrations above 0.01% by weight	Prohibited
European Standard ³	Prohibited	Prohibited

¹ Section 3.7.

² Appendix A, Table I, para. (e), (f).

³ EN 15947-5, pt 1.

As discussed in Section IV.B.1., below, the Commission also proposes to allow for trace contamination with these and other prohibited chemicals, consistent with the voluntary standards. Section IV.B.1. discusses the various trace contamination limits the Commission is considering for these chemicals and other prohibited chemicals in further detail. Nevertheless, the Commission believes that there is a need, generally, to prohibit HCB and lead tetroxide and other lead compounds.

The proposed requirement would constitute a new hazardous substance ban under the FHSA because it would ban chemicals that are not currently prohibited in CPSC’s fireworks regulations.

b. FHSA Findings

i. Finding 1: Public Health and Safety

The Commission believes that HCB and lead tetroxide and other lead compounds in fireworks present a serious hazard to consumers, justifying prohibiting these chemicals. As the Health Sciences memorandum in the briefing package for this NPR discusses, testing indicates that HCB and lead are present in some fireworks devices and bystanders can absorb these chemicals from the environment when they are released from fireworks. Moreover, both chemicals are associated with severe health problems.

ii. Finding 2: Voluntary Standards

As for the first prong of this finding, the Commission believes that compliance with the voluntary standard would adequately reduce the risk of injury because the voluntary standard limits the explosive power of devices, which is why the Commission proposes to incorporate these limits by reference into the regulations. With respect to the second prong of this finding, the Commission believes that there is not likely to be substantial compliance with the voluntary standards. As the data shows, studies have found devices containing HCB or lead compounds and at levels above the limits permitted in the voluntary standards, indicating a lack of compliance. Because of the serious health effects associated with HCB and lead compounds, these two chemicals pose a particularly serious risk to consumers, necessitating a particularly high level of compliance.

iii. Finding 3: Costs and Benefits

The Commission believes that the benefits of the recommended requirement bear a reasonable relationship to its costs. The benefits would include reducing consumer exposure to two chemicals that pose serious health effects. Comparatively, the costs are likely low because

HCB and lead compounds are not necessary components of fireworks, they are not commonly used, and the effects they create can be replicated with other safer and less-costly materials.

iv. Finding 4: Alternatives

The Commission believes that the recommended requirement is the least burdensome means of achieving the safety purpose. Prohibiting these two chemicals in unsafe levels is necessary to protect consumer safety; any alternative may not accomplish this purpose.

4. Adopt a Test Method to Evaluate Side Ignition (16 CFR 1507.3)

a. Proposed Requirement and Rationale

Section 1507.3(a)(1) requires fireworks devices that use a fuse (with the exception of certain smaller fireworks devices) to use a fuse that is treated or coated to “reduce the possibility of side ignition.” Section 1500.17(a)(9) bans any fireworks device that does not comply with applicable requirements of part 1507 (except as specified in 1500.17(a)(9)), thereby making devices that do not meet the fuse requirements in 1507.3 “banned hazardous substances.” The regulation does not detail how to evaluate compliance with 1507.3(a)(1), nor does it specify what qualifies as “reduc[ing] the possibility of side ignition.” The CPSC Testing Manual, APA Standard 87-1, and the AFSL Standard provide additional details about this requirement. The CPSC Testing Manual provides a test for evaluating fuse side-ignition resistance. The testing involves holding a lit cigarette against the side of the fuse and measuring how long the fuse resists ignition. The CPSC Testing Manual directs testers to measure whether side ignition occurs within 5 seconds; and CPSC currently considers a device to have failed the fuse side-ignition resistance requirement in 1507.3(a)(1) if the fuse ignites within 3 seconds. APA Standard 87-1 and the AFSL Standard provide similar restrictions to 1507.3(a)(1) and similar test methods to the CPSC Testing Manual, each requiring the fuse not to ignite within 3 seconds.

Between 2005 and 2015, the Commission found 28 violations of 1507.3(a)(1). In addition, Commission staff assessed 211 fireworks device samples for side ignition in fiscal year 2015. Staff found that 1 sample (0.5%) ignited in less than 3 seconds; 12 samples (5.7%) ignited in 3 to 5 seconds; and 198 (93.8%) did not ignite within 5 seconds.

The potential for injury when a fireworks device inadvertently ignites is serious and could severely injure or kill a person attempting to light the fireworks device or harm bystanders. If a device lights quickly without the user deliberately lighting it, the user could be holding the device or be close to it when it explodes. Although incident and injury reports listed in the Fireworks Annual Report do not specifically reference side ignition of fireworks devices (which may be difficult to identify), the report does include numerous incidents in which users or bystanders died or sustained serious injuries when a fireworks device exploded while the user was holding it or when the device was lit too close to bystanders or to other fireworks or explosives. Injuries resulting from these incidents included severe burns, bone fractures, and lacerations.

Because of the potential severity of injuries that can result if a device inadvertently ignites, the Commission proposes to adopt the test method for evaluating fuse side ignition described in the CPSC Testing Manual as part of the regulations and to specify that fuses must resist side ignition for at least 3 seconds. Because this test method is part of the CPSC Testing Manual, it is not a requirement, but rather, is simply one method available for assessing compliance with 1507.3(a)(1). A clear and consistent understanding of the side ignition resistance requirement may improve safety because industry members would evaluate the side ignition resistance of fuses uniformly, allowing them to consistently and reliably identify fuses that risk side ignition, thereby posing a safety risk to consumers. Moreover, specifying that

devices must resist side ignition for 3 seconds provides a clear threshold for determining the safety of the device.

As explained, the proposed requirement, in effect, would create a new hazardous substance ban, triggering the findings required under the FHSA because it would require all manufacturers to test their devices and use that evaluation method, which may be different or more stringent than the method they currently use.

b. FHSA Findings

i. Finding 1: Public Health and Safety

The Commission believes that the degree and nature of the hazards associated with side ignition are such that the public health and safety necessitate banning devices that exceed the proposed side ignition resistance limit. Inadvertent side ignition presents a serious safety hazard to consumers who may be near the device when it functions. Although incident data does not specifically capture side-ignition incidents, the Fireworks Annual Report references deaths and serious injuries that resulted when a fireworks device fired too close to a user or bystander or when a user was holding it, which are among the circumstances likely to occur when a device inadvertently lights by side ignition. A quantifiable test for all regulated entities to follow would improve consumer safety by promoting consistent assessment of devices to screen for unsafe devices entering the market.

ii. Finding 2: Voluntary Standards

In considering the first prong of this finding, the Commission believes that compliance with the voluntary standard would likely adequately reduce the risk of injury because it specifies a test for evaluating side ignition and specifies a reasonable time in which fuses should resist side ignition, which is why the Commission proposes to adopt a comparable test method and limit.

But with respect to the second prong of this finding, the Commission believes that there is not likely to be substantial compliance with the APA Standard 87-1 test method and 3-second threshold. Although CPSC's preliminary testing indicates that a high percentage of devices satisfy the APA Standard 87-1 fuse side-ignition resistance provisions, given the severity of the potential injuries that can result when a fireworks devices inadvertently lights, the Commission believes that a particularly high level of compliance is necessary to adequately reduce this risk. As discussed above, the severity of potential injuries is a factor the Commission considers relevant in assessing the level of compliance necessary to constitute "substantial compliance" with a voluntary standard. *See* H.R. Rep. No. 208, 97th Cong., 1st Sess. 875 (1981). Moreover, the test method that the Commission proposes includes additional details that APA Standard 87-1 does not, making the proposed test method clearer, which facilitates compliance and uniformity of testing and results.

iii. Finding 3: Costs and Benefits

Third, the Commission believes that the benefits of the proposed requirement bear a reasonable relationship to its costs. Anticipated costs include developing a testing program to evaluate product compliance in order to issue certificates of compliance, modifying devices to resist side ignition for a longer period, and potentially removing a small proportion of devices from the market. The Commission does not expect the costs associated with these options to be high, particularly because testing costs can be allocated across all devices with fuses. Benefits include the reduced risk of injury to consumers, including a reduced risk of serious injuries associated with devices firing close to users.

iv. Finding 4: Alternatives

Fourth, the Commission believes that the proposed requirement is the least burdensome way to achieve the targeted safety purpose. The proposed test method and 3-second threshold are consistent with the voluntary standards and the CPSC Testing Manual and would facilitate compliance and consumer safety.

5. Require Bases to Remain Attached to Devices (16 CFR 1507.4)

a. Proposed Requirement and Rationale

Section 1507.4 provides a minimum base-to-height ratio for fireworks devices that aims to reduce the likelihood of devices tipping over. The ratio test is intended to prevent devices from tipping over, but it is a static test that does not evaluate whether a device will tip over when firing. When firing, a device may tip over if there is no base, or if the base is not securely attached. If a device tips over when firing, it presents a serious safety hazard because it could fire in the direction of bystanders or nearby property, or users may return to a lit device to correct the tip over. Although the Fireworks Annual Report does not specifically track incidents or injuries that involve detached bases, the report does indicate that during a 1-month period in 2015, 6 percent of incidents involved devices tipping over, and 13 percent of incidents involved errant flight paths (including devices firing at bystanders rather than directly upwards), which resulted in severe burns. Although these incidents are not attributable to base detachments, specifically, incidents involving devices tipping over or having errant flight paths are the types of incidents that can occur when a base detaches from a device.

Commission staff has observed that several devices on the market do not have bases, or they have bases that became detached before or during use. Although staff does not systematically check for base attachment issues because that currently is not a requirement, staff

nevertheless, may record these issues in notes on test reports during routine testing. Because staff does not systematically check and record base attachment issues, the reports that do reflect such issues represent the minimum number of base attachment issues that staff has witnessed.

Between fiscal year 1999 and 2016, staff reports indicate that 88 devices had no base, or the base detached before or during operation; 32 devices tipped over during testing; and 76 devices had compromised tube integrity. More than half of the base separations that staff observed were between fiscal years 2010 and 2016. This could suggest a decline in quality control, although there are other possible explanations as well. In some of these cases, staff noted that the base was detached or broken when received; in others, the base detached during handling; and in others, the base detached or cracked when the device fired. Staff has identified 111 samples (2.4%) out of 4,554 devices that have, or could have bases and that contained notes indicating that bases were either missing or functioned improperly during operation. This indicates that there are a large number of devices on the market that potentially pose a safety hazard if a device tips over.

Because of the safety risk associated with devices tipping over, the role base attachment can play in tip-over incidents, staff's observations of devices that rely on bases to operate properly, and staff's observation of devices on the market that do not have bases that are attached securely, the Commission proposes to require bases to remain attached to devices during storage, handling, and normal operation.

This proposed requirement is similar to provisions in the AFSL Standard and APA Standard 87-1 that require bases to remain attached to devices during transportation, handling, and normal operation. However, because Commission staff has observed devices that arrive with no base or a detached or broken base, the Commission proposes to extend this requirement to

storage as well. Because DOT has jurisdiction over transportation safety, the Commission's proposed provision does not address transportation.

This proposal would create a new hazardous substance ban because it would add a requirement to 1507.4 that would require bases to remain attached during storage, handling, and normal operation. As noted, any fireworks device that does not comply with part 1507 constitutes a banned hazardous substance under 1500.17(a)(9).

b. FHSA Findings

i. Finding 1: Public Health and Safety

The Commission believes that the degree and nature of the hazard associated with bases detaching and devices tipping over when firing are such that the public health and safety necessitates the Commission banning devices that do not have bases that are attached securely. Commission testing has found numerous devices that do not have bases that are attached securely and have tipped over during firing. Moreover, the proportion of these devices has increased in recent years. If a device tips over when firing, it can result in serious injuries. Although the incident reports do not address base detachments specifically, tip overs and other incidents can result when a base detaches and have resulted in serious burns to users and bystanders.

ii. Finding 2: Voluntary Standards

The Commission also believes that the voluntary standard provisions regarding base detachment are not adequate. For one, the voluntary standards include requirements relevant to transportation, which falls within DOT's purview. In addition, the Commission believes that the voluntary standards are not likely to adequately reduce the safety risk associated with base detachments because they do not address detachment that occurs during storage. Commission

staff has observed fireworks devices with bases that were missing, broken, or detached before staff handled and operated them. As such, staff concluded that it is necessary to require attachment during storage. Finally, the Commission believes that there is not substantial compliance with the voluntary standards. In recent years, Commission staff has observed devices with missing, broken, or detached bases. This suggests that there is not substantial compliance with the voluntary standards. The presence of devices on the market that do not comply with the voluntary standards and the serious injuries that can result when such noncompliant devices tip over during firing, support the Commission's finding that there is not sufficient compliance with the voluntary standards.

iii. Finding 3: Costs and Benefits

The Commission believes that the costs associated with the proposed requirement are reasonable, relative to the safety benefits. These costs include affixing bases to devices; designing them as a single piece; and incurring the time, materials, and shipping costs associated with those modifications. Although the Commission cannot estimate the safety benefits of improving the stability of devices, the general occurrence of tip-over incidents, and the potentially serious injuries that can result, supports the need for safety measures that would reduce them.

iv. Finding 4: Alternatives

The Commission believes that the proposed requirement is the least burdensome way to achieve the safety goal. The proposed requirement is performance-based, rather than prescriptive, allowing manufacturers numerous ways to comply. The proposal also is consistent with requirements in the voluntary standards.

6. Prohibit Devices from Projecting Fragments when Functioning

a. Proposed Requirement and Rationale

Incident data reported to the Commission for 2005 to 2015 indicate that some incidents may have involved fireworks that projected fragments when they fired, injuring bystanders. Although it was not clear in all of these incidents whether the fragments were part of a consumer fireworks device or debris in the surrounding area, the resulting injuries demonstrate the risk to consumers. The reported incidents included debris in a bystander's eye; third-degree burns on a bystander's foot; a metal shard lodged in a bystander's ankle when the device fired sideways; and first-degree burns and a corneal abrasion from a piece of metal in a bystander's eye. As these incidents demonstrate, fragments of hard materials from a firing fireworks device can cause serious injuries. Moreover, during routine compliance testing, Commission staff has observed hard plastic, metal, or other fragments expelled when fireworks devices function.

To address this safety hazard, the Commission proposes to prohibit fireworks devices from projecting sharp debris when functioning. Section 3.7.2 of APA Standard 87-1 prohibits fireworks devices from propelling sharp fragments of specific materials when set off. The AFSL Standard includes a similar, more general requirement, prohibiting devices from projecting flaming or glowing pieces (section 2-1.11). The Commission proposes to incorporate by reference the APA Standard 87-1 provision because it provides a more detailed requirement, listing specific types of materials that a fireworks device may not project, including metal, glass, and brittle plastic. However, the Commission requests comments on whether this provision should be limited to certain sizes or amounts of these fragments, rather than a strict general ban, because devices may include these materials as necessary components.

Because the regulations do not currently prohibit devices that project sharp fragments, this would be a new ban, subject to the FHSA findings.

b. FHSA Findings

i. Finding 1: Public Health and Safety

The Commission believes that this ban is necessary to adequately protect the public from the risk of serious injury that can result when fireworks devices project sharp fragments. Commission staff has observed devices project fragments when firing and incident data demonstrates the occurrence and severity of these incidents.

ii. Finding 2: Voluntary Standards

The Commission believes that APA Standard 87-1 would adequately reduce the risk of injury associated with projected fragments because it prohibits devices from projecting fragments that can injure bystanders, which is why the Commission proposes to incorporate by reference this provision of the voluntary standard. But the Commission does not believe that there is likely to be substantial compliance with that standard, given the severity of potential injuries. As discussed above, the severity of potential injuries is a factor the Commission considers relevant in assessing the level of compliance necessary to constitute “substantial compliance” with a voluntary standard. *See* H.R. Rep. No. 208, 97th Cong., 1st Sess. 875 (1981). Although there are only eight reported incidents, the reported injuries demonstrate the potential severity of injuries that projected fragments can cause, including first-degree burns and eye injuries. Accordingly, the level of compliance must be particularly high.

iii. Finding 3: Costs and Benefits

The Commission believes that the benefits of the proposed requirement bear a reasonable relationship to the costs. The benefits include increased consumer safety. The costs include

possibly redesigning devices to eliminate parts that may be dispersed or expelled as fragments or potentially implementing greater quality control to ensure that such parts are not dispersed or expelled as fragments. Commission staff does not have sufficient information to determine the expected costs of these modifications, but anecdotal evidence indicates that less than 10 percent of the market does not comply with the proposed requirement.

iv. Finding 4: Alternatives

The Commission believes that the proposed requirement is the least burdensome way to achieve the safety goal. The AFSL Standard and APA Standard 87-1 provide similar alternatives, and the proposed requirement is a performance-based standard that prohibits devices that project fragments and does not otherwise limit the design of devices.

B. Easing Existing Regulatory Requirements

The following proposed provision would not create any new requirements or ban any hazardous substances. Rather, the proposed provision would ease the existing regulatory requirements applicable to fireworks devices.

1. Allow Trace Amounts of Prohibited Chemicals (16 CFR 1507.2)

Section 1507.2 prohibits the presence of certain chemicals in fireworks devices. This requirement has existed in CPSC's regulations since 1976. 41 FR 9,512 (Mar. 4, 1976); 41 FR 22,931 (June 8, 1976). However, technology has advanced significantly since CPSC adopted this provision, and now testing can identify previously undetectable trace amounts of a chemical. This precision can make it difficult and burdensome to demonstrate the absence of prohibited chemicals in any amount because instruments often can quantify the presence of a chemical at parts per billion or parts per trillion, but not zero. Instruments and analyses that can test for the presence of chemicals at infinitesimal levels are costly and

often require significant sample preparation, while simpler and less costly test methods (*e.g.*, X-Ray Fluorescence spectroscopy) are available to identify the presence of chemicals.

Given the nature of the chemicals prohibited in fireworks devices and the manner in which these chemicals appear in fireworks devices in trace amounts, the Commission believes that their presence is not intentional. In large enough amounts, these chemicals are unstable or pose health or environmental risks, so manufacturers would not deliberately add them to devices. Rather, when they are present, it is likely the result of their inadvertent presence in the environment during production. The Commission believes that trace amounts of these chemicals do not present a risk to consumers because such minimal levels would not affect the rate of reaction and consequent explosive power.

To reflect current technological capabilities, the relative difficulty and cost of identifying and eliminating all trace amounts of prohibited chemicals, the unintentional nature of trace contamination, and the negligible safety implications of trace contamination, the Commission proposes to allow trace amounts of the chemicals prohibited in 1507.2 to be present in fireworks devices.

Existing standards and Commission testing and research provide some options for selecting an appropriate trace allowance limit. APA Standard 87-1 and the AFSL Standard both allow for small amounts of prohibited chemicals as impurities. APA Standard 87-1, section 3.7.1, allows for trace amounts of all prohibited chemicals, if the trace amount is less than 0.25 percent by weight. The AFSL Standard, Appendix A, Table 1, allows for trace contamination of HCB at the limit of 0.01 percent by weight, but does not include a general allowance for all prohibited chemicals. There are also limits on lead content in other consumer products. The Consumer Product Safety Improvement Act (CPSIA; Pub. L. No.

110-314, 122 Stat. 3016) limits the lead content of most children's products to 0.01 percent by weight and limits lead compounds in consumer surface-coating materials to 0.009 percent by weight.

Additionally, Commission staff conducted preliminary testing to identify prohibited chemicals in fireworks devices. Examining samples collected from the Office of Compliance from fiscal years 2014 and 2015, staff found that 90 percent of the samples (29 of 32) contained titanium with 100-mesh particle size or smaller, in violation of 1507.2(j), and 38 percent of the samples (12 of 32) contained lead, which the Commission proposes to prohibit in this NPR. However, applying a trace contamination allowance of 0.25 percent by weight (consistent with APA Standard 87-1), only 9 percent (3 of 32) exceeded this limit for titanium with 100-mesh particle size or smaller and only 3 percent (1 of 32) exceeded this limit for lead compounds. Applying an even lower contamination allowance of 0.05 percent by weight, only a few samples (between 9 percent and 16 percent) exceeded this threshold for titanium with 100-mesh particle size or smaller, and none of the samples exceeded this limit for lead compounds. As discussed, various studies have found HCB in fireworks devices in ranges less than and greater than 0.01 percent, 0.05 percent, and 0.25 percent by weight.

Based on this information, there are several options that the Commission may adopt as a general allowance for all prohibited chemicals or as trace allowances for particular chemicals, such as HCB and lead tetroxide and other lead compounds. These options include:

- allowing trace amounts:

- less than 0.25 percent by weight (consistent with the general limit in APA Standard 87-1);
- less than 0.01 percent by weight (consistent with CPSIA lead limits);
- less than 0.05 percent by weight (since CPSC’s initial testing indicates that most devices comply with this level);
- less than 0.01 percent by weight (consistent with the most stringent allowance in the voluntary standards); or
- less than 0.009 percent by weight (consistent with the CPSIA limit on lead compounds in certain consumer materials); or
- adopting no allowance for certain chemicals.

The Commission does not have exposure data regarding the relative safety of the various trace contamination levels identified.

With the exception of HCB, the Commission proposes to allow for trace amounts up to 0.25 percent of each of the prohibited chemicals listed in 1507.2, including lead tetroxide and other lead compounds, which the Commission proposes to add to 1507.2 in this NPR. This contamination level is consistent with the level provided in APA Standard 87-1. The Commission proposes to allow for trace amounts of 0.01 percent for HCB. This contamination level is consistent with the level provided in the AFSL Standard.

The Commission also may opt to adopt trace contamination allowances in the regulations, in compliance guidance, or in the CPSC Testing Manual. Incorporating trace allowance limits into compliance guidance or the CPSC Testing Manual would maintain the strict prohibition in the regulations but give the Commission flexibility in enforcing violations of the prohibited chemicals ban. Including these allowances in compliance

guidance or the CPSC Testing Manual would not create or modify the current requirement in 1507.2, but would serve only as an option available for Commission flexibility.

C. Clarifications of Existing Regulations

The following proposed requirements would not create any new requirements or ban any hazardous substances; rather they would facilitate regulated entities' understanding of the existing or proposed regulations by providing definitions and eliminating inconsistencies. Because these proposed requirements would not create new hazardous substance bans, they do not require the Commission to make the FHSA findings.

1. Define "Burst Charge" (16 CFR 1500.3)

The proposed modifications to 16 CFR 1500.17(a)(3) regarding the method of identifying devices that are limited to 2 grains of pyrotechnic composition (discussed in Section IV.A.1.) focus on the content of the "burst charge" of the device. Additionally, "burst charge" appears in the proposed chemical composition and pyrotechnic weight limits (discussed in Section IV.A.2.). Consequently, the meaning of the term "burst charge" is central to these proposed requirements, and regulated entities need a clear understanding of the term to comply with the proposed requirements. Therefore, the Commission proposes to define "burst charge."

The proposed requirements in which the term "burst charge" would appear are consistent with provisions in APA Standard 87-1. APA Standard 87-1 defines "burst charge" in section 2.5, describing its function and the effects it produces—namely, that it is a chemical composition that breaks open an aerial device—and identifying "expelling charge" and "break charge" as common synonyms for "burst charge." The Commission believes that this definition accurately describes the term "burst charge." For that reason, and to align

with the industry standard, the Commission proposes to incorporate by reference the definition of “burst charge” as it appears in the first two sentences of APA Standard 87-1, section 2.5.

2. Define “Chemical Composition” (16 CFR 1500.3)

The term “chemical composition” is central to the proposed chemical composition and pyrotechnic weight limits (described in Section IV.A.2.). The Commission proposes to define “chemical composition” so that regulated entities have a clear and precise understanding of this term to comply with the proposed limits.

The chemical composition limits that the Commission proposes are similar to those in APA Standard 87-1. APA Standard 87-1 defines “chemical composition” in section 2.6, describing it as pyrotechnic and explosive compositions and detailing its components. The Commission believes that this definition accurately describes “chemical composition.” For this reason, and to align with the industry standard, the Commission proposes to incorporate by reference the definition of “chemical composition” as set forth in APA Standard 87-1, section 2.6.

In addition, the Commission proposes to specify that “chemical composition” consists of lift charge, burst charge, and visible and audible effect materials. This additional information is not in APA Standard 87-1, but the Commission believes it clarifies information, which facilitates industry compliance with the proposed chemical composition and pyrotechnic weight limits.

3. Define “Explosive Composition” (16 CFR 1500.3 and 1507.1)

The proposed definition of “chemical composition” includes the term “explosive composition.” In addition, the proposed definition of “firecrackers,” discussed below, also

includes this term. To facilitate clear and consistent industry understanding of this term, the Commission proposes to define “explosive composition.”

APA Standard 87-1 defines “explosive composition” in section 2.6.1, describing the function and effect. The Commission believes that this definition accurately describes the term. For this reason, and for consistency with this recognized standard, the Commission proposes to incorporate by reference APA Standard 87-1, section 2.6.1.

4. Define “Lift Charge” (16 CFR 1500.3)

The chemical composition limits that the Commission proposes (described in Section IV.A.2., above) include limits on the chemical composition of “lift charges.” The Commission proposes to define the term “lift charge” so that regulated entities have a clear and consistent understanding of the components to which these limits apply.

The chemical composition limits that the Commission proposes are similar to those in APA Standard 87-1. Standard APA Standard 87-1 also defines “lift charge” in section 2.10, describing its function (lifting or propelling a device into the air) and composition. The Commission believes that this definition accurately describes this term. For this reason, and for consistency with the comparable requirements in APA Standard 87-1, the Commission proposes to incorporate by reference section 2.10 of APA Standard 87-1.

However, the APA Standard 87-1 definition of “lift charge” refers only to mine or shell devices, not all fireworks devices. As an alternative to the APA Standard 87-1 definition, the Commission believes that it may be appropriate to define “lift charge” in a manner that applies to all fireworks devices. The Commission requests comments on this alternative.

5. Define “Pyrotechnic Composition” (16 CFR 1500.3 and 1507.1)

The term “pyrotechnic composition” appears in several existing CPSC fireworks regulations, as well as in several of the requirements proposed in this NPR. Specifically, the term appears in the proposed definitions of “burst charge” and “chemical composition”; the proposed chemical composition and pyrotechnic weight limits (described in Section IV.A.2., above); and 16 CFR 1507.3, 1507.5, 1507.9, and 1507.11 (in reference to fuse requirements, pyrotechnic leakage, toy smoke and flitter devices, and party poppers, respectively). The Commission proposes to define “pyrotechnic composition” so that the regulated industry has a clear and uniform understanding of this term and the related requirements. Such an understanding facilitates proper testing and regulatory compliance, which, in turn, promotes consumer safety.

Section 2.6.2 of APA Standard 87-1 defines “pyrotechnic composition,” describing how it functions and the effects it produces. The Commission believes that this definition accurately describes “pyrotechnic composition.” For that reason, and for consistency with the industry standard, the Commission proposes to incorporate by reference APA Standard 87-1, section 2.6.2.

6. Clarify Requirements for “Aerial Bombs” (16 CFR 1500.3, 1500.17(a)(3) and 1500.17(a)(8))

The term “aerial bomb” appears twice in CPSC’s fireworks regulations—in 16 CFR 1500.17(a)(3) and in 1500.17(a)(8). Section 1500.17(a)(3) bans fireworks devices intended to produce audible effects if the audible effect is produced by more than 2 grains of pyrotechnic composition. This section lists examples of devices that are “intended to produce audible effects,” including “aerial bombs.” As a result, 1500.17(a)(3) bans aerial bombs only if they contain more than 2 grains of pyrotechnic composition. In contrast,

1500.17(a)(8) bans various devices, listing each one, including “aerial bombs.” This provision does not limit the ban to devices containing more than 2 grains of pyrotechnic composition; rather, it bans all of the listed devices outright, including “aerial bombs.” As such, 1500.17(a)(3) and 1500.17(a)(8) are inconsistent.

To eliminate this inconsistency, the Commission proposes to remove “aerial bombs” from 1500.17(a)(3) and retain it, as written, in 1500.17(a)(8). The Commission believes that it is appropriate to ban aerial bombs entirely because they present a serious risk of injury to consumers. The proposed removal of “aerial bombs” from 1500.17(a)(3) would not create any new requirements or ban any new hazardous substances. Rather, the Commission would merely be maintaining one of the two existing provisions.

In addition, the Commission proposes to define “aerial bombs” to provide regulated entities with clarity about which devices are banned. None of the existing voluntary or international standards define “aerial bombs.” The Commission proposes to define “aerial bomb” as “a tube device that fires an explosive charge into the air without added visual effect.”

7. Define “Firecrackers” (16 CFR 1500.3 and 1507.1) and Rephrase References to Firecrackers (16 CFR 1500.17(a)(3), 1500.17(a)(8), 1500.83(a)(27)(i), and 1500.85(a)(2))

The Commission proposes two revisions to clarify the regulations regarding firecrackers. First, the Commission proposes to define “firecrackers.” The term “firecrackers” appears in 1500.17, 1500.85, and 1507.1. The Commission believes that a definition of “firecrackers” would provide a clear understanding of what these devices include, and thereby, facilitate compliance with requirements that apply to them.

Both APA Standard 87-1 (section 3.1.3.1) and the AFSL Standard (section 1-1.7) define “firecrackers” in largely the same way, describing the materials and effects of a firecracker and specifying limits that apply to firecrackers. The Commission believes that both definitions are clear and accurate, but proposes to incorporate by reference the APA Standard 87-1 definition for consistency with other proposed requirements that would incorporate that standard by reference and to reduce industry burdens by requiring compliance with one voluntary standard, rather than two.

Second, the Commission proposes to revise the references to firecrackers in the regulations so that they are consistent and more straightforward. CPSC’s regulations refer to “firecrackers,” “firecrackers designed to produce audible effects,” and “devices designed to produce audible effects.” *See* 1500.17(a)(3), 1500.17(a)(8), 1500.83(a)(27)(i), and 1500.85(a)(2). As the proposed definition of “firecrackers” indicates, these devices create a noise (or audible effect) when they function. This noise is an intentional effect that firecrackers are designed to produce. Therefore, “designed to produce audible effects” is an unnecessary qualifier for “firecrackers.” To make the regulations clearer and less cumbersome, the Commission proposes to replace the references to devices “designed to produce audible effects” in 1500.17(a)(3), 1500.17(a)(8), 1500.83(a)(27)(i), and 1500.85(a)(2) with appropriate descriptions of the term that are not redundant. This revision may also minimize confusion with the similar phrase “intended to produce audible effects” in 1500.17(a)(3), which refers to a different category of devices.

8. Move the Exemption for Firecrackers from the Scope Section of Part 1507 to the Individual Sections of Part 1507 that are Relevant to Firecrackers (16 CFR 1507.1, 1507.2, and 1507.3)

Section 1507.1 establishes the scope of part 1507, stating that any fireworks devices, other than firecrackers, that are not otherwise banned, are subject to the requirements in part 1507. Only two sections within part 1507—1507.2 and 1507.3—could apply to firecrackers. In a previous rulemaking, the Commission concluded that 1507.2 should not apply to firecrackers because 1507.2 prohibits chlorates, which are common and adequately safe in firecrackers containing flash powder. 41 FR 9,520 (Mar. 4, 1976). Similarly, the Commission decided that firecrackers need not be subject to the fuse requirements in 1507.3 because the type of fuses those requirements aim to address—namely, those that create a safety hazard—are not used in firecrackers. *Id.* The remaining sections of part 1507 are specific to particular devices (none of which are firecrackers) or particular features that firecrackers do not have and, therefore, are not relevant or applicable to firecrackers. Consequently, there is no need to exempt firecrackers from the scope of those provisions.

In order to streamline the regulations, the Commission proposes to remove the exemption for firecrackers from 1507.1 and, instead, place it in the only two sections to which the exemption is relevant—1507.2 and 1507.3. This does not alter the substantive requirements or the scope of the exemption in this part. Rather, it simply lists the exemption where it is actually applicable, rather than applying it unnecessarily broadly to the entire part.

9. Make Editorial Correction to Language Regarding Fuse Attachment (16 CFR 1507.3)

Section 1507.3(b) requires fuses to remain securely attached to fireworks devices. To

evaluate whether a fuse is securely attached to the device, the regulation requires the fuse to support the lesser of: (1) the weight of the fireworks device plus 8 ounces, or (2) double the weight of the device, without separating from the device. However, in describing the two alternate weight options, the regulation states: “whether is less,” rather than, “whichever is less.” Although the meaning of the regulation is apparent, the Commission proposes to correct this typographical error.

10. Define “Base” (16 CFR 1507.4)

Section 1507.4 specifies requirements relevant to bases of fireworks devices and, as described in Section IV.A.5., above, the Commission proposes additional requirements regarding bases in this NPR. To facilitate a clear understanding of the features subject to those requirements, the Commission also proposes to define the term “base.”

APA Standard 87-1 does not define “base,” but section 1-2.1 of the AFSL Standard does, describing it as a platform from which a fireworks device functions and to which tubes are attached. The Commission proposed to adopt a definition that is consistent with the AFSL Standard, but includes more detail to provide greater precision and clarity.

11. Define “Burnout” and “Blowout” (16 CFR 1507.6)

Section 1507.6 requires the pyrotechnic chamber in fireworks devices to be constructed “to allow functioning in a normal manner without burnout or blowout.” The Commission proposes to adopt definitions for “burnout” and “blowout” in order to provide a clear and consistent understanding of the existing requirement.

APA Standard 87-1 defines “blowout” in section 2.3 and “burnout” in section 2.4, describing the observable effects of these phenomena. The Commission believes that these definitions accurately capture the meaning of these terms and reflect the understanding of

the fireworks industry. Therefore, the Commission proposes to incorporate by reference APA Standard 87-1, sections 2.3 and 2.4.

V. Incorporation by Reference

This NPR proposes to incorporate by reference several provisions of APA Standard 87-1. The Office of the Federal Register sets out specific procedural and content requirements to incorporate a material by reference in 1 CFR part 51. Under these regulations, an NPR must summarize the material it proposes to incorporate by reference and discuss how that material is available to interested parties. 1 CFR 51.3(a), 51.5(a). In accordance with this requirement, Sections III. and IV. of this preamble summarize the provisions of APA Standard 87-1 that the Commission proposes to incorporate by reference. Additionally, by permission of APA, interested parties may view the standard as a read-only document during the comment period of this NPR at: <http://www.americanpyro.com/>. Interested parties may also purchase a copy of APA Standard 87-1 from American Pyrotechnics Association, 7910 Woodmont Ave., Ste. 1220, Bethesda, MD 20814; <http://www.americanpyro.com/>. Interested parties may also inspect copies of the standard at CPSC's Office of the Secretary, U.S. Consumer Product Safety Commission, Room 820, 4330 East West Highway, Bethesda, MD 20814, telephone 301-504-7923.

VI. Paperwork Reduction Act

The proposed requirements do not include any provisions that would constitute a collection of information under the Paperwork Reduction Act of 1995 (PRA; 44 U.S.C. 3501-3521). The proposed requirements do not request or require any parties to create or maintain records or disclose or report information to the Commission, any government body, the public, or third parties. Therefore, the requirements of the PRA do not apply to this NPR.

VII. Regulatory Flexibility Act

A. Introduction

The Regulatory Flexibility Act (RFA; 5 U.S.C. 601-612) requires agencies to consider the impact of proposed rules on small entities, including small businesses. Section 603 of the RFA requires the Commission to prepare an initial regulatory flexibility analysis (IRFA) and make it available to the public for comment when the NPR is published. The IRFA must describe the impact of the proposed rule on small entities and identify significant alternatives that accomplish the statutory objectives and minimize any significant economic impact of the proposed rule on small entities. Specifically, the IRFA must discuss:

- the reasons the agency is considering the action;
- the objectives of and legal basis for the proposed rule;
- the small entities that would be subject to the proposed rule and an estimate of the number of small entities that would be impacted;
- the reporting, recordkeeping, and other requirements of the proposed rule, including the classes of small entities subject to it and the skills necessary to prepare the reports or records; and
- the relevant federal rules that may duplicate, overlap, or conflict with the proposed rule.

5 U.S.C. 603.

In addition, the IRFA must describe any significant alternatives to the proposed rule that accomplish the stated objectives of applicable statutes and minimize any significant economic impact on small entities. *Id.* This section summarizes the IRFA for this proposed rule. The complete IRFA is available in the briefing package for this NPR, available at

https://www.cpsc.gov/Newsroom/FOIA/ReportList?field_nfr_type_value=commission. To

summarize, the Commission does not have enough information to determine whether all of the provisions in the proposed rule would not have a significant economic impact on a substantial number of small entities. The Commission does not expect the costs of compliance with several of the provisions to pose a significant impact to a substantial number of small entities; however, the Commission does not have enough information to estimate the costs of compliance with the provisions regarding base attachment and fragments, with precision. To further inform its decision and analysis, the Commission requests comments on the costs of complying with the provisions regarding base attachment and fragments.

B. Reasons the Agency is Considering the Action

The Commission is considering the proposed rule to update its existing fireworks regulations to reflect the current fireworks market, changes in technology, existing fireworks standards, and safety issues associated with fireworks devices in order to reduce the risk of injury that fireworks devices present to consumers and align with other voluntary and federal standards.

C. Objectives of and Legal Basis for the Proposed Rule

The objective of the proposed rule is to update CPSC's fireworks regulations to reflect the current fireworks market, changes in technology, existing fireworks standards, and safety issues associated with fireworks devices in order to reduce the risk of injury that fireworks devices present to consumers.

The legal authority for the proposed rule is the FHSA, which authorizes the Commission to adopt regulations regarding hazardous substances and regulatory provisions necessary to enforce those requirements.

D. Small Entities Subject to the Proposed Rule

The U.S. Small Business Administration (SBA) size guidelines define manufacturers categorized under North American Industry Classification System (NAICS) codes that apply to fireworks manufacturers as “small” if they have fewer than 500 employees. The SBA defines importers as “small” if they have fewer than 100 employees (wholesalers) or less than \$7.5 million in sales (retailers). AFSL, which conducts testing and certification for a substantial portion of the fireworks industry, maintains a public list of U.S. importers and Chinese manufacturers that participate in its programs. Its list includes 165 importers, of which 121 are small, six are large, and the remaining 38 are of unknown size (but likely are small). AFSL asserts that its members represent 85 percent to 90 percent of U.S. importers, indicating a total market size of 183 to 194 importers. Although some U.S. firms continue to manufacture fireworks, the vast majority of the market is imported.

E. Requirements of the Proposed Rule and the Potential Impact on Small Entities

The proposed rule includes three categories of requirements. First, the proposed rule adds definitions for various terms that appear in the regulations or in requirements proposed in this NPR and clarifies existing requirements. The proposed definitions are based on the common understanding of these terms within the fireworks industry, and are consistent with the voluntary standards; as such, they do not create any new requirements or impose any burdens on the fireworks industry. Similarly, the clarifications would not change the regulations and would not create any additional burdens.

Second, the proposed rule includes provisions to reduce burdens on the fireworks industry by allowing trace amounts of prohibited chemicals. The burdens related to this proposed requirement are discussed below.

Third, the proposed rule includes new hazardous substances bans. The burdens related to these requirements are discussed in further detail below. To summarize, the following proposed requirements may impact small entities:

- banning fireworks devices with break charges containing metallic powder less than 100 mesh in particle size when the break charge is produced by more than 2 grains of pyrotechnic composition;
- limiting total pyrotechnic weight and chemical composition by firework type;
- prohibiting HCB and lead tetroxide and other lead compounds in fireworks devices;
- requiring the testing of fuses for side ignition;
- requiring bases remain attached to devices during storage, handling, and use; and
- banning fireworks from expelling fragments when functioning.

Typically, fireworks are manufactured overseas and imported into the United States. For this reason, most of the potential impact of this proposed rule would fall on small domestic importers, rather than small domestic manufacturers. Because the proposed rule includes changes intended to align Federal regulations with voluntary standards, many foreign manufacturers already comply with the proposed regulations. Consequently, for many importers, finding a new supplier may be a low-cost option to comply with the proposed rule.

1. Allow for Trace Contamination of Prohibited Chemicals

The proposed rule would amend 1507.2 to allow for trace amounts of prohibited chemicals in fireworks. The Commission proposes various contamination levels that align with the voluntary standards, compliance rates, and other federal standards. Because of advancements in technology, testers can now identify chemicals in such low levels that they do not pose safety hazards to consumers. Between fiscal years 2000 and 2015, CPSC found 41 violations of 1507.2.

Of these violations, four came from samples that contained prohibited chemicals in concentrations below the proposed allowance limit of 0.25 percent. The total lot value of those four lots was \$7,109, which represents the theoretical reduction in burden for the fireworks industry. In addition, the proposed requirement may reduce burdens by no longer requiring manufacturers to ensure the absolute absence of prohibited chemicals. Therefore, this requirement should not have a significant economic impact on a substantial number of firms.

2. Ban Fireworks Containing Metallic Powder Less than 100 Mesh in Particle Size with Greater Than Two Grains of Pyrotechnic Material

The proposed rule would adopt a new method of identifying devices that are subject to the two-grain limit, replacing the identifier “devices intended to produce audible effects” with a description of the content of the devices. CPSC’s preliminary testing revealed that more than 85 percent of samples do not comply with the proposed standard. Although the sample size of this testing was too small to generalize these findings, it suggests that a significant number of firms may not comply with the proposed requirement. This indicates that fireworks manufacturers may incur some costs to comply with the proposed regulation.

To comply with the proposed requirement, the Commission expects fireworks producers to replace metallic and hybrid powders with black powder formulations. The cost of switching from metallic and hybrid powders to black powder should not create a significant impact for firms that have to change formulations. Commission staff examined retail prices of aluminum, other popular powders, and black powder kits and found that aluminum ranges from \$18.35 per pound to \$38.67 per pound and black powder kits sell for approximately \$5.20 per pound. Therefore, a firework producer switching from 2 grains of aluminum powder purchased for \$18.35 per pound to 15 g of black powder purchased for \$5.20 per pound would incur a material

cost increase of \$0.17 per shell. As these mine or shell devices typically sell for \$4 to \$5 per shell, the difference in fuel costs could represent up to 4 percent of retail revenues. However, because fireworks manufacturers are unlikely to pay retail prices for fuels and the applicable devices represent only a portion of a fireworks manufacturer's product line, the impact of this proposed provision on the total revenue of any manufacturer or importer is likely to be less than one percent and may not be to be significant for the affected small firms.

3. Limit the Total Pyrotechnic Weight and Chemical Composition of Fireworks Devices

The proposed rule limits the total amount of pyrotechnic material and the chemical composition in various fireworks devices. These provisions align with the limits in APA Standard 87-1. The limits in APA Standard 87-1 are high enough to allow sufficient explosive force for a fireworks device to function, even accounting for switching from flash powder and hybrid formulations to exclusively black powder. CPSC's initial testing found several devices that do not comply with the proposed limits for aerial devices. To comply with the proposed requirements, non-compliant producers would likely implement quality control measures to ensure devices comply with the specified limits. Given that many fireworks devices are made by hand, a quality control system could consist of a one-time transition to smaller measuring devices for filling fireworks with pyrotechnic material. Thus, this proposed requirement is not likely to produce a significant impact on affected small firms. The Commission does not have information about the level of compliance with the proposed limits for ground devices.

4. Ban HCB and Lead Tetroxide and Other Lead Compounds in Fireworks Devices

The proposed rule would ban HCB and lead tetroxide and other lead compounds, either entirely or in concentrations above a certain threshold for trace contamination. Although both chemicals were once prominent in fireworks formulations, they have since largely fallen out of

use. The voluntary and international standards ban both chemicals, in some combination, and testing indicates that there is a fairly high level of compliance with these bans. Although studies indicate that there are fireworks devices that contain HCB or lead tetroxide and other lead compounds, those devices do not represent a large portion of the devices on the market. Thus, although the availability of such devices poses a substantial risk to consumers, if exposed to those chemicals, the devices make up a small enough portion of the market that banning those chemicals likely would not create significant costs.

While lead was traditionally used to create “crackle” effects, bismuth trioxide has largely replaced it to achieve that effect because it is less expensive and more effective. HCB was prevalent in fireworks as a color enhancer, but since some standards have banned HCB, fireworks manufacturers have reduced its use. Because of the industry’s limited use of these chemicals, the Commission expects that the proposed requirement would pose minimal burden to industry.

5. Require Testing for Side Ignition of Fuses

The proposed rule would amend 1507.2 to include a test for side ignition of fuses. The test is currently specified in the CPSC Testing Manual. The test requires placing the lit end of a cigarette against the side of a fuse and observing how much time elapses before it ignites. Under the proposed requirement, a device fails if it ignites within 3 seconds.

CPSC testing indicates that 99.5 percent of fireworks pass the proposed test for side ignition. The remaining 0.5 percent of fireworks may fail the test because they have not been treated to prevent side ignition or have not been sufficiently treated or coated to prevent side ignition within 3 seconds. By not defining a metric for reducing the possibility of side ignition,

the current regulations leave open the question of whether those fuses that have been treated, but treated insufficiently to pass CPSC's test method, meet the standard in the regulation.

The proposed test method would require fireworks manufacturers and importers to conduct the test to issue a certificate of compliance with their products. The Commission does not know how many fireworks are currently tested for side ignition of fuses. However, a reasonable testing program associated with this requirement is unlikely to create a significant economic impact on fireworks producers. Conceivably, a producer could test the treatment or coating on a sample of fuses, conclude the treatment or coating is effective, and use the same test results for all fireworks that use the same type of fuse. Thus, a producer could amortize the costs of fuse testing across all fireworks sold with fuses.

6. Require Bases to Remain Attached During Storage, Handling, and Operation

The proposed rule requires bases to remain attached to fireworks during storage, handling, and operation. The Commission expects this requirement to have a minimal impact on manufacturers. CPSC does not test for base attachment when testing samples of fireworks, but on occasions where bases are detached, staff may note this in the testing report. In fireworks tested between Fiscal Year 1999 and the present, out of 4,554 relevant samples, 111 samples (2.4%) contained notes that bases were either missing or functioned improperly during operation.

For devices that do not meet the proposed requirement, the Commission expects firms to adapt their designs so that the device and base are one piece or to secure the base to the device with an adhesive. The potential costs of complying with the proposed regulation include additional time to affix the base to the fireworks device (seconds per device), materials for affixing the base, and potential shipping costs associated with the higher volume per device when the base is attached. Additionally, some quality control efforts may be needed to ensure

that bases are attached correctly so as not to detach during storage, handling, or operation. Because only a small portion of products do not meet the proposed requirement, and the activities necessary to comply with it are low in cost, the Commission does not expect this provision to have a significant economic impact on a substantial number of small firms.

7. Ban Fireworks That Disperse Fragments

The proposed rule bans fireworks that disperse fragments when operating. This ban is also in APA Standard 87-1 and the AFSL Standard. CPSC staff has observed fragments falling from detonated fireworks during testing and incident data from 2005 through 2015 reveals eight potential incidents associated with fragments in fireworks. CPSC believes the fragments expelled from fireworks are typically due to manufacturers' intentional use of metal, glass, or brittle plastic parts. These components are not part of the effects associated with the device, but may play a role in the functioning of the device. To comply with the proposed rule, fireworks producers would have to redesign their products to not use these components or would have to implement quality control measures to ensure the device does not project these components when firing. CPSC has little information about the costs of these changes.

F. Other Relevant Federal Rules

DOT incorporates by reference APA Standard 87-1 into its regulations, which apply to fireworks when transported in commerce. Because all fireworks sold to consumers are, at some point, transported in commerce, all consumer fireworks fall under the jurisdiction of DOT and are subject to the requirements of APA Standard 87-1. However, DOT's enforcement program is limited to its jurisdiction over the transportation of hazardous materials in commerce and provisions relevant to safety during such transportation.

In estimating the burdens to manufacturers imposed by the proposed rule, the Commission relied on estimates of current compliance with APA Standard 87-1 because it is incorporated by reference into DOT's regulations. The provisions of this proposed rule aim to eliminate conflict between DOT regulations and CPSC regulations for fireworks, where it exists.

G. Alternatives

The Commission considered alternatives to the proposed requirements that impose new bans on the fireworks industry, in the interests of reducing the compliance burden.

1. Alternatives to Banning Fireworks Containing Metallic Powder Less than 100 Mesh in Particle Size with Greater Than Two Grains of Pyrotechnic Material

Rather than adopt the proposed method of identifying devices that are limited to two grains of pyrotechnic content, the Commission could take no action. This alternative would be less burdensome than the proposed requirement, as compliance with the current regulation is higher than with the proposed requirement. However, the Commission believes that the proposed provision provides additional clarity and consistency and more-regularly identifies the more-explosive devices, thereby furthering compliance with an important safety provision. Additionally, the Commission believes that the cost of meeting the proposed requirement is low.

An additional alternative is to eliminate the 2-grain limit in more-powerful fireworks devices. However, without this limit, fireworks devices could be manufactured with greater explosive power, presenting serious safety risks for consumers.

2. Alternatives to Limiting the Total Pyrotechnic Weight and Chemical Composition of Fireworks Devices

The Commission considered taking no action to limit the total pyrotechnic weight and chemical composition of certain fireworks devices. However, for those regulated entities that

already comply with the limits in APA Standard 87-1 limits, the proposed rule would create only a minimal burden. Moreover, the proposed rule aims to limit the explosive power of fireworks devices to reduce the potential for injuries to users, and CPSC believes there is some benefit in aligning its requirements with the voluntary standards.

3. Alternatives to Banning HCB and Lead Tetroxide and Other Lead Compounds in Fireworks Devices

The Commission considered taking no action to add HCB and lead tetroxide and other lead compounds to the list of prohibited chemicals in 1507.2. However, that alternative likely would not reduce the burden of the proposed requirement substantially because many regulated entities already exclude these chemicals from their devices. The Commission also considered only prohibiting either HCB or lead tetroxide or other lead compounds, as well as various allowance levels for trace contamination. When considering the trace contamination allowance that the Commission proposes in this NPR, the burden of the proposed requirement is particularly low and aligns with the voluntary standards, and is justified given the highly hazardous nature of these chemicals.

4. Alternatives to Requiring Testing for Side Ignition of Fuses

The Commission considered taking no action to require specific testing of fuses. However, this alternative would not significantly reduce the burden of the proposed requirement on firms because CPSC already uses the proposed test for compliance testing. Additionally, the burden of testing fuses is minimal when amortized across all fireworks sold with fuses.

5. Alternatives to Requiring Bases to Remain Attached During Storage, Handling, and Operation

The Commission considered taking no action concerning base attachment. However, the proposed requirement is intended to address a specific hazard. Therefore, the Commission

believes that the potential benefit of the proposed requirement outweighs the potential costs, which are unlikely to be significant for a substantial number of firms.

6. Alternatives to Banning Fireworks That Disperse Fragments

The Commission considered taking no action to ban fireworks that project fragments when firing. However, given the potential for severe injury, the Commission believes that taking no action does not sufficiently protect consumer safety.

VIII. Preemption

Section 18 of the FHSA provides that no state or political subdivision of a state may establish or continue in effect a cautionary labeling requirement or a requirement for a hazardous substance that is designed to protect against the same risk of illness or injury unless the requirement is identical to the FHSA requirement or the requirement the Commission adopts under the FHSA. 15 U.S.C. 1261n(b)(1); Section 231 of the CPSIA. However, a state or political subdivision of a state may establish or continue in effect a requirement applicable to a hazardous substance for the state or political subdivision's own use that is designed to protect against a risk of illness or injury associated with fireworks devices if it provides a higher degree of protection from that risk than the requirement in effect under the Commission's regulations. 15 U.S.C. 1261n(b)(2) and 1261n(b)(4). This allowance does not extend to labeling requirements. In addition, a state or political subdivision may apply for exemption from preemption in the circumstances specified in section 18(b)(3) of the FHSA.

Consequently, if the Commission adopts a final rule regarding fireworks under the FHSA, that rule would preempt non-identical state or local requirements if the state or local provisions specify requirements that deal with the same risk of injury CPSC's regulations aim to address. However, because the FHSA applies to requirements the Commission may impose on

fireworks devices and labeling, a final rule would not prevent states and political subdivisions of a state from regulating the sale of fireworks.

IX. Effective Date

The Administrative Procedure Act requires the effective date of a rule to be at least 30 days after publication of the final rule. 5 U.S.C. 553(d). To support the Commission's goals to update the fireworks regulations to reflect the current market and technology, provide clarity and consistency, and promote consumer safety, the Commission proposes that the updated fireworks regulations take effect 30 days after a final rule is published in the *Federal Register*. The Commission believes that this effective date is reasonable because many of the proposed requirements align with existing standards, the Commission expects the costs associated with the proposed requirements to be low, and CPSC's regulatory review briefing package, published on the Commission's website on December 30, 2015, provided advance notice of the potential for these requirements.

The Commission requests comments on the proposed effective date.

X. Environmental Considerations

Rules that have "little or no potential for affecting the human environment" fall within a "categorical exclusion" under the National Environmental Policy Act (NEPA; 42 U.S.C. 4231-4370h) and the regulations implementing NEPA (40 CFR Parts 1500-1508) and do not normally require an environmental assessment (EA) or environmental impact statement (EIS). As the Commission's regulations state, CPSC actions generally do not produce significant environmental effects and, therefore, generally do not require an EIS. 16 CFR 1021.5(a). The regulations further specify that rules or safety standards that provide design or performance requirements fall within the categorical exclusion from NEPA because they have little or no

potential effect on the human environment. 16 CFR 1021.5(c)(1). Consequently, such rules do not require an EA or an EIS.

Because the proposed rule would create design and performance requirements for fireworks devices, the proposed rule falls within the categorical exclusion and no EA or EIS is required. Moreover, although the proposed requirements may render some fireworks non-compliant and therefore, require their disposal, the Commission believes that this impact would be minimal, particularly in light of existing standards and the time provided before the final rule would take effect. *See* 16 CFR 1021.5(b)(2). Therefore, the Commission believes that the proposed rule has “little or no potential for affecting the human environment” and does not require an EA or EIS.

XI. Request for Comments

The Commission requests comments on all aspects of this proposed rule, specifically regarding:

- the method of identifying devices that are subject to the 2-grain limit, including:
 - the need and usefulness of including a method of identifying in the regulations which devices are subject to the 2 grain limit;
 - the usefulness, effectiveness, costs, and benefits of the proposed method of identifying these devices, including supporting data;
 - the level of compliance with the comparable requirement in APA Standard 87-1;
 - whether there are devices that contain only black powder that should be limited to 2 grains of pyrotechnic composition because of the safety hazard they pose to consumers; and

- whether the Commission should limit larger particle sizes of metallic powder in break charges or reports, relevant data and justifications for doing so, and the appropriate method and limit;
- the implications of the Commission electing, at times, to use its enforcement discretion to permit up to 1.00 percent contamination of metallic content in break charges, including:
 - the safety implications of such an allowance;
 - the impact of such an allowance on the costs and burdens of testing and analysis, relative to compliance with the absolute ban in the regulation;
 - a reasonable allowance level that still provides for consumer safety, along with supporting data; and
 - the implications of adopting the allowance in the regulations, as opposed to exercising it as enforcement discretion;
- the proposed limits to chemical composition and pyrotechnic weight of fireworks devices, including:
 - the benefits and costs associated with the proposed requirement;
 - the level of compliance with the requirements in APA Standard 87-1 with which the proposed requirements align;
 - whether the specific limits proposed are appropriate in light of consumer safety and fireworks devices currently on the market; and
 - the safety hazards that the ground devices that would be subject to the proposed requirement pose to consumers and any relevant incident or injury data;

- prohibiting HCB and lead tetroxide and other lead compounds from fireworks devices, including:
 - the benefits and costs associated with banning these chemicals;
 - the level of compliance with the limits for these chemicals in the AFSL Standard and APA Standard 87-1;
 - the presence of HCB in fireworks devices in the U.S. market and the corresponding frequency and levels;
 - the presence of lead tetroxide or other lead compounds in fireworks devices in the U.S. market and the corresponding frequency and levels; and
 - and exposure data regarding the impact of these chemicals in fireworks devices;
- resistance to side ignition, including:
 - information and data about incidents involving side ignition;
 - whether a test method for evaluating side ignition would improve consumer safety; and
 - the level of compliance with the requirement in APA Standard 87-1;
- bases detaching from fireworks devices, including:
 - whether base detachment is involved in devices tipping over, incidents, injuries, or deaths and applicable data;
 - the relative benefits and costs associated with the recommended requirement; and
 - the level of compliance with the similar requirements in APA Standard 87-1 and the AFSL Standard;

- the proposed ban of fireworks devices that project fragments when functioning, including:
 - data regarding the types and frequency of incidents and injuries associated with fragments projected from fireworks devices;
 - the types of materials fireworks devices project as fragments that present a safety risk to the public (*e.g.*, metal, hard plastic, glass, wood);
 - whether the Commission should specify a size or amount limit for projected fragments and, if so, the appropriate size or amount and corresponding rationale;
 - the relative benefits and costs associated with the proposed requirement; and
 - the level of compliance with section 3.7.2 of APA Standard 87-1;
- a trace contamination allowance for prohibited chemicals, including:
 - whether allowing trace amounts of prohibited chemicals adequately protects consumers from the risks associated with these chemicals;
 - which chemicals the Commission should provide trace allowances for;
 - what level of trace contamination should be permitted in light of consumer safety and inadvertent contamination;
 - the relative costs of complying with an absolute ban of prohibited chemicals and trace contamination allowances;
 - the alternatives of adopting trace contamination allowances in the regulations, in compliance guidance, or in the CPSC Testing Manual; and
 - exposure data regarding the impact of trace contamination on consumer safety;

- the usefulness and content of the proposed definitions for:
 - burst charge;
 - chemical composition;
 - explosive composition;
 - lift charge;
 - pyrotechnic composition;
 - firecrackers;
 - bases;
 - burnout; and
 - blowout;
- aerial bombs, including:
 - the proposed definition of aerial bombs; and
 - incident and injury data regarding aerial bombs;
- the estimated costs and benefits associated with each of the proposed requirements;
and
- the estimated costs to small entities for each of the proposed requirements.

During the comment period, APA Standard 87-1 is available for review. Please see Section V. of this NPR for instructions on viewing it.

Please submit comments in accordance with the instructions in the **ADDRESSES** section at the beginning of this NPR.

List of Subjects

16 CFR Part 1500

Consumer protection, Hazardous materials, Hazardous substances, Imports, Incorporation by reference, Infants and children, Labeling, Law enforcement, and Toys.

16 CFR Part 1507

Consumer protection, Explosives, Fireworks, and Incorporation by reference.

For the reasons discussed in the preamble, the Commission proposes to amend Title 16 of the Code of Federal Regulations as follows:

PART 1500—HAZARDOUS SUBSTANCES AND ARTICLES: ADMINISTRATION AND ENFORCEMENT REGULATIONS

1. The authority citation for part 1500 continues to read as follows:

Authority: 15 U.S.C. 1261-1278, 122 Stat. 3016; the Consumer Product Safety Improvement Act of 2008, Pub. L. 110-314, §104, 122 Stat. 3016 (August 14, 2008).

2. Amend § 1500.3 by:

- a. Revising paragraph (a)(2);

- b. Adding paragraph (a)(3) through (9) and paragraph (d) to read as follows:

§ 1500.3 Definitions.

(a) * * *

(2) *Aerial bomb* means a tube device that fires an explosive charge into the air without added visual effect.

(3) *Burst charge*, also known as *expelling charge* or *break charge*, is as defined in section 2.5 of APA Standard 87-1 (incorporated by reference, see paragraph (d) of this section).

(4) *Chemical composition*, includes lift charge, burst charge, and visible/audible effect materials and is as defined in section 2.6 of APA Standard 87-1 (incorporated by reference, see paragraph (d) of this section).

(5) *Commission* means the Consumer Product Safety Commission established May 14, 1973, pursuant to provisions of the Consumer Product Safety Act (Pub. L. 92-573, 86 Stat. 1207-33 (15 U.S.C. 2051-81)).

(6) *Explosive composition*, is as defined in section 2.6.1 of APA Standard 87-1 (incorporated by reference, see paragraph (d) of this section).

(7) *Firecracker*, is as defined in section 3.1.3.1 of APA Standard 87-1 (incorporated by reference, see paragraph (d) of this section).

(8) *Lift charge*, is as defined in section 2.10 of APA Standard 87-1 (incorporated by reference, see paragraph (d) of this section).

(9) *Pyrotechnic composition*, is as defined in section 2.6.2 of APA Standard 87-1 (incorporated by reference, see paragraph (d) of this section).

* * * * *

(d) Certain portions, identified in this section, of APA Standard 87-1, Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics, December 1, 2001 (APA Standard 87-1) are incorporated by reference into this section with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51 (IBR approved for paragraph (a)). You may obtain a copy of the approved material from American Pyrotechnics Association, 7910 Woodmont Avenue, Suite 1220, Bethesda, MD 20814; telephone 301-907-8181; <http://www.americanpyro.com/>. You may inspect a copy of the approved material at the U.S. Consumer Product Safety Commission, Office of the Secretary, 4330 East West Highway, Room 820, Bethesda, MD 20814; telephone 301-504-7923; or at the National Archives and Records Administration (NARA). For information on the availability of

this material at NARA, call 202-741-6030 or go to

http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

3. Amend § 1500.17 by revising paragraphs (a)(3) and (8) and add paragraph (a)(14) to read as follows:

§ 1500.17 Banned Hazardous Substances.

(a) * * *

(3)(i) Fireworks devices that contain a burst charge containing metallic powder less than 100 mesh in particle size (including but not limited to cherry bombs, M-80 salutes, silver salutes, and kits and components intended to produce such fireworks) if the burst charge is produced by a charge of more than 2 grains (~ 130 mg) of pyrotechnic composition; except that this provision shall not apply to such fireworks devices if all of the following conditions are met:

* * * * *

(ii) *Findings.*

(A) *General.* In order to issue a rule under section 2(q)(1) of the Federal Hazardous Substances Act (FHSA), 15 U.S.C. 1261(q)(1), classifying a substance or article as a banned hazardous substance, the FHSA requires the Commission to make certain findings and to include these findings in the regulation. These findings are discussed below.

(B) *Voluntary standards.* The Commission believes that it is unlikely that there will be substantial compliance with APA Standard 87-1, *Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics*, December 1, 2001 edition, based on the Commission's preliminary testing indicating that there is a high proportion of devices that do not comply with the comparable requirements in APA Standard 87-1 and the

injury data showing the severe injuries and deaths that have resulted from devices that do not comply with this provision and vulnerability of the population at risk.

(C) *Relationship of benefits to costs.* The benefits expected from the rule, including increased public safety, bear a reasonable relationship to its costs, including minimal costs associated with modifying the contents of fireworks devices or limiting the pyrotechnic composition of devices to 2 grains.

(D) *Least-burdensome requirement.* The Commission considered less burdensome alternative methods of identifying devices that are subject to a two-grain limit on pyrotechnic composition, but concluded that none of these alternatives would adequately reduce the risk of injury.

* * * * *

(8) Firecrackers, if the explosive composition is produced by more than 50 mg (.772 grains) of pyrotechnic composition, (not including firecrackers included as components of a rocket), aerial bombs, and devices that may be confused with candy or other foods, such as “dragon eggs,” and “cracker balls” (also known as “ball-type caps”), and including kits and components intended to produce such fireworks except such devices which meet all of the following conditions:

* * * * *

(14)(i) Fireworks devices that do not conform to the following chemical composition and pyrotechnic weight limits:

(A) *Sky Rockets, Bottle Rockets, Missile-Type Rockets, Helicopters (Aerial Spinners), and Roman Candles.* Each of these devices shall not contain more than 20 grams of chemical composition.

(B) *Mine and Shell Devices*. Devices shall conform to section 3.1.2.5 of APA Standard 87-1, Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics, December 1, 2001 version, which is incorporated by reference herein, except that:

(1) The lift charge of each shell is limited to black powder (potassium nitrate, sulfur, and charcoal) or similar pyrotechnic composition without metallic fuel.

(2) Reserved

(C) *Aerial Shells with Reloadable Tubes*. Devices shall conform to section 3.1.2.6 of APA Standard 87-1, Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics, December 1, 2001 version, which is incorporated by reference herein, except that the lift charge of each shell is limited to black powder (potassium nitrate, sulfur, and charcoal) or similar pyrotechnic composition without metallic fuel.

(D) *Cylindrical Fountains*. Devices shall conform to section 3.1.1.1 of APA Standard 87-1, Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics, December 1, 2001 version, which is incorporated by reference herein.

(E) *Cone Fountains*. Devices shall conform to section 3.1.1.2 of APA Standard 87-1, Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics, December 1, 2001 version, which is incorporated by reference herein.

(F) *Illuminating Torches*. Devices shall conform to section 3.1.1.3 of APA Standard 87-1, Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics, December 1, 2001 version, which is incorporated by reference herein.

(G) *Wheels*. Devices shall conform to section 3.1.1.4 of APA Standard 87-1, Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics, December 1, 2001 version, which is incorporated by reference herein.

(H) *Chasers*. Devices shall conform to section 3.1.3.2 of APA Standard 87-1, Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics, December 1, 2001 version, which is incorporated by reference herein.

(ii) *Incorporation by reference*. Certain portions, identified in this section, of APA Standard 87-1, Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics, December 1, 2001 (APA Standard 87-1) are incorporated by reference into this section with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51 (IBR approved for paragraph (a)(14)). You may obtain a copy of the approved material from American Pyrotechnics Association, 7910 Woodmont Avenue, Suite 1220, Bethesda, MD 20814; telephone 301-907-8181; <http://www.americanpyro.com/>. You may inspect a copy of the approved material at the U.S. Consumer Product Safety Commission, Office of the Secretary, 4330 East West Highway, Room 820, Bethesda, MD 20814; telephone 301-504-7923; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030 or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(iii) *Findings*.

(A) *General*. In order to issue a rule under section 2(q)(1) of the Federal Hazardous Substances Act (FHSA), 15 U.S.C. 1261(q)(1), classifying a substance or article as a banned hazardous substance, the FHSA requires the Commission to make certain findings and to include these findings in the regulation. These findings are discussed below.

(B) *Voluntary standards.* The Commission believes that it is unlikely that there will be substantial compliance with APA Standard 87-1, *Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics*, December 1, 2001 edition, based on the Commission's preliminary testing indicating that a high proportion of devices does not comply with the device limits in APA Standard 87-1 and the injury data showing the severe injuries and deaths that can result from devices with particularly high pyrotechnic or chemical compositions.

(C) *Relationship of benefits to costs.* The benefits expected from the rule, including increased public safety, bear a reasonable relationship to its costs, including minimal costs associated with modifying or reducing the pyrotechnic or chemical composition of fireworks devices.

(D) *Least-burdensome requirement.* The Commission considered less burdensome alternative methods of limiting the pyrotechnic or chemical composition of fireworks devices, but concluded that none of these alternatives would adequately reduce the risk of injury.

* * * * *

4. Revise § 1500.83 paragraph (a)(27)(i) to read as follows:

§ 1500.83 Exemptions for small packages, minor hazards, and special circumstances.

(a) * * *

(27) * * *

(i) The package contains only fireworks devices suitable for use by the public and designed primarily to produce visible effects by combustion, except that small devices with an explosive composition that includes metallic fuel less than 100 mesh in particle size may also be

included if the burst charge or explosive composition is produced by not more than 2 grains of pyrotechnic composition;

* * * * *

5. Revise § 1500.85 paragraph (a)(2) to read as follows:

§ 1500.85 Exemptions from classification as banned hazardous substances.

(a) * * *

(2) Firecrackers, if the explosive composition is produced by no more than 50 milligrams (.772 grains) of pyrotechnic composition. (See also § 1500.14(b)(7); § 1500.17(a) (3), (8) and (9); and part 1507).

* * * * *

PART 1507—FIREWORKS DEVICES

6. The authority citation for part 1507 continues to read as follows:

Authority: 15 U.S.C. 1261-1262, 2079(d); 21 U.S.C. 371(e).

7. Amend § 1507.1 by:

- a. Revising the section heading,
- b. Renumbering and revising the introductory paragraph, and

c. Adding paragraph (b) to read as follows:

§ 1507.1 Scope and definitions.

(a) *Scope.* This part 1507 prescribes requirements for those fireworks devices not otherwise banned under the act. Any fireworks device that fails to conform to applicable requirements is a banned hazardous substance and is prohibited from the channels of interstate commerce. Any fireworks device not otherwise banned under the act shall not be a banned

hazardous substance by virtue of the fact that there are no applicable requirements prescribed herein.

(b) *Definitions.* As used in this part:

(1) *Explosive composition* is as defined in section 2.6.1 of APA Standard 87-1 (incorporated by reference, see § 1507.14).

(2) *Firecracker* is as defined in section 3.1.3.1 of APA Standard 87-1 (incorporated by reference, see § 1507.14).

(3) *Pyrotechnic composition* is as defined in section 2.6.2 of APA Standard 87-1 (incorporated by reference, see § 1507.14).

8. Revise § 1507.2 to read as follows:

§ 1507.2 Prohibited chemicals.

(a) Fireworks devices, other than firecrackers, shall not contain any of the following chemicals:

(1) Arsenic sulfide, arsenates, or arsenites, except in trace amounts less than 0.25% by weight.

(2) Boron, except in trace amounts less than 0.25% by weight.

(3) Chlorates, except in trace amounts less than 0.25% by weight and:

(i) In colored smoke mixtures in which an equal or greater amount of sodium bicarbonate is included.

(ii) In caps and party poppers.

(iii) In those small items (such as ground spinners) wherein the total powder content does not exceed 4 grams of which not greater than 15 percent (or 600 milligrams) is potassium, sodium, or barium chlorate.

(4) Gallates or gallic acid, except in trace amounts less than 0.25% by weight.

(5) Hexachlorobenzene, except in trace amounts less than 0.01% by weight.

(6) Lead tetroxide and other lead compounds, except in trace amounts less than 0.25% by weight.

(7) Magnesium, except in trace amounts less than 0.25% by weight (magnesium/aluminum alloys, called magnalium, are permitted).

(8) Mercury salts, except in trace amounts less than 0.25% by weight.

(9) Phosphorus (red or white), except in trace amounts less than 0.25% by weight. Except that red phosphorus is permissible in caps and party poppers.

(10) Picrates or picric acid, except in trace amounts less than 0.25% by weight.

(11) Thiocyanates, except in trace amounts less than 0.25% by weight.

(12) Titanium, except in particle size greater than 100-mesh or in trace amounts less than 0.25% by weight.

(13) Zirconium, except in trace amounts less than 0.25% by weight.

(b) *Findings.*

(1) *General.* In order to issue a rule under section 2(q)(1) of the Federal Hazardous Substances Act (FHSA), 15 U.S.C. 1261(q)(1), classifying a substance or article as a banned hazardous substance, the FHSA requires the Commission to make certain findings and to include these findings in the regulation. These findings, with respect to hexachlorobenzene and lead tetroxide and other lead compounds, are discussed below.

(2) *Voluntary standards.* The Commission believes that it is unlikely that there will be substantial compliance with the provision prohibiting lead tetroxide and other lead compounds in

APA Standard 87-1, *Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics*, December 1, 2001 edition, because testing indicates that there are devices on the market that do not comply with this provision in APA Standard 87-1, the public can absorb the chemical when it is released into the environment through fireworks devices, and the health risks associated with the chemical are severe. The Commission believes that it is unlikely that there will be substantial compliance with the provision prohibiting hexachlorobenzene and lead tetroxide and other lead compounds in the American Fireworks Standards Laboratory's voluntary standard for consumer fireworks because testing indicates that there are devices on the market that do not comply with this provision in the standard, the public can absorb these chemicals when they are released into the environment through fireworks devices, and the health risks associated with these chemicals are severe.

(3) *Relationship of benefits to costs.* The benefits expected from the rule, including increased public safety, bear a reasonable relationship to its costs, including minimal costs associated with modifying the chemical content of fireworks devices.

(4) *Least-burdensome requirement.* The Commission considered less burdensome alternatives to the rule, but concluded that none of these alternatives would adequately reduce the risk of injury.

9. Amend § 1507.3 by renumbering and revising paragraph (a) and (b), adding paragraph (c), to read as follows:

§ 1507.3 Fuses.

(a) Fireworks devices, other than firecrackers, that require a fuse shall use a fuse that has been treated or coated in such manner as to reduce the possibility of side ignition.

(1) The following test must be conducted to evaluate whether a fuse has been treated or coated in such manner as to reduce the possibility of side ignition:

(i) Cut the fuse at the point where the fuse enters the fireworks device. If the fuse is wrapped in paper, plastic, or taped to the device, remove the fuse with the paper, plastic, and/or tape intact; and

(ii) Place the glowing tip of a lit standard NIST (SRM 1196) cigarette directly on the side of the fuse (or the paper, plastic, or tape attached to the fuse) and time, in seconds, how long it takes for the fuse to ignite.

(2) The fuse must not ignite within 3 seconds.

(3) The following devices are exempted from § 1507.3(a)(1) and (2):

(i) Devices such as ground spinners that require a restricted orifice for proper thrust and contain less than 6 grams of pyrotechnic composition.

(ii) Devices with fuses that protrude less than ½ inch from the device, because the end of the fuse may ignite during testing.

(4) *Findings.*

(i) *General.* In order to issue a rule under section 2(q)(1) of the Federal Hazardous Substances Act (FHSA), 15 U.S.C. 1261(q)(1), classifying a substance or article as a banned hazardous substance, the FHSA requires the Commission to make certain findings and to include these findings in the regulation. These findings are discussed below.

(ii) *Voluntary standards.* The Commission believes that there is not likely to be substantial compliance with the side ignition test method in APA Standard 87-1, *Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical*

Pyrotechnics, December 1, 2001 edition, because the severity of injuries that can result from side ignition of fuses are such that a particularly high level of compliance is necessary.

(iii) *Relationship of benefits to costs.* The benefits expected from the rule, including increased public safety, bear a reasonable relationship to its costs, including minimal costs associated with treating fuses to resist side ignition and testing fuses for compliance with the requirement.

(iv) *Least-burdensome requirement.* The Commission considered less burdensome alternatives to the rule, but concluded that none of these alternatives would adequately reduce the risk of injury. The rule is consistent with voluntary standards and the Commission's current testing and enforcement practices.

(b) Fireworks devices, other than firecrackers, that require a fuse shall use a fuse that will burn at least 3 seconds but not more than 9 seconds before ignition of the device.

(c) For fireworks devices, other than firecrackers, that require a fuse, the fuse shall be securely attached so that it will support either the weight of the fireworks device plus 8 ounces of dead weight or double the weight of the device, whichever is less, without separation from the fireworks device.

10. Revise § 1507.4 to number the paragraphs and to add paragraphs (a)(2) and (b) to read as follows:

§ 1507.4 Bases.

(a) The base of fireworks devices that are operated in a standing upright position shall:

(1) Have the minimum horizontal dimensions or the diameter of the base equal to at least one-third of the height of the device including any base or cap affixed thereto; and

(2)(i) Remain securely attached to the device during handling, storage, and normal operation.

(ii) *Findings.*

(A) *General.* In order to issue a rule under section 2(q)(1) of the Federal Hazardous Substances Act (FHSA), 15 U.S.C. 1261(q)(1), classifying a substance or article as a banned hazardous substance, the FHSA requires the Commission to make certain findings and to include these findings in the regulation. These findings are discussed below.

(B) *Voluntary standards.* The Commission believes that compliance with APA Standard 87-1, *Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics*, December 1, 2001 edition or the American Fireworks Standards Laboratory's voluntary standard for consumer fireworks is not likely to adequately reduce the risk of injury and that it is unlikely that there will be substantial compliance with either of these two voluntary standards, based on the Commission's preliminary testing indicating that there is a high proportion of devices that have no bases or that have bases that detach from the device during handling, storage, or use and the injury data showing the severe injuries that can result when devices tip over or have unexpected flight paths, both of which can result from detached bases.

(C) *Relationship of benefits to costs.* The benefits expected from the rule, including increased public safety, bear a reasonable relationship to its costs, including minimal costs associated with affixing bases to devices and increased shipping costs.

(D) *Least-burdensome requirement.* The Commission considered less burdensome alternatives to the rule, but concluded that none of these alternatives would adequately reduce the risk of injury.

(b) For purposes of this section, the base means the bottom-most part or foundation attached to one or more tubes of a fireworks device that serves as a flat, stabilizing surface from which the device may function.

11. Revise § 1507.6 to read as follows:

§ 1507.6 Burnout and blowout.

(a) The pyrotechnic chamber in fireworks devices shall be constructed in a manner to allow functioning in a normal manner without burnout or blowout.

(b) As used in this section, the terms blowout and burnout are as defined in sections 2.3 and 2.4, respectively, of APA Standard 87-1 (incorporated by reference, see § 1507.14).

12. Add § 1507.13 to read as follows:

§ 1507.13 Fragments.

(a) Fireworks devices must function in accordance with section 3.7.2 of APA Standard 87-1 (incorporated by reference, see § 1507.14).

(b) *Findings.*

(1) *General.* In order to issue a rule under section 2(q)(1) of the Federal Hazardous Substances Act (FHSA), 15 U.S.C. 1261(q)(1), classifying a substance or article as a banned hazardous substance, the FHSA requires the Commission to make certain findings and to include these findings in the regulation. These findings are discussed below.

(2) *Voluntary standards.* The Commission believes it is unlikely that there will be substantial compliance with the provisions in APA Standard 87-1, *Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics*, December 1, 2001 edition or the American Fireworks Standards Laboratory's voluntary standard for consumer fireworks that prohibit devices from projecting sharp fragments, based on the

Commission's preliminary testing indicating that there are devices on the market that project sharp fragments when functioning and injury data showing the severe injuries that can result when projected fragments strike bystanders.

(3) *Relationship of benefits to costs.* The benefits expected from the rule, including increased public safety, bear a reasonable relationship to its costs, including minimal costs associated redesigning fireworks devices.

(4) *Least-burdensome requirement.* The Commission considered less burdensome alternatives to the rule, but concluded that none of these alternatives would adequately reduce the risk of injury.

13. Add § 1507.14 to read as follows:

§ 1507.14 Incorporation by reference.

Certain portions, identified in this part, of APA Standard 87-1, Standard for Construction and Approval for Transportation of Fireworks, Novelties, and Theatrical Pyrotechnics, December 1, 2001 (APA Standard 87-1) are incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51 (IBR approved for §§ 1507.1, 1507.6, and 1507.13). You may obtain a copy of the approved material from American Pyrotechnics Association, 7910 Woodmont Avenue, Suite 1220, Bethesda, MD 20814; telephone 301-907-8181; <http://www.americanpyro.com/>. You may inspect a copy of the approved material at the U.S. Consumer Product Safety Commission, Office of the Secretary, 4330 East West Highway, Room 820, Bethesda, MD 20814; telephone 301-504-7923; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030 or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Dated: January 26, 2017

Todd A. Stevenson,

Secretary, Consumer Product Safety Commission

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