

The National Fireworks Association

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**THE U.S. CONSUMER PRODUCT SAFETY COMMISSION
(CPSC)**

**Proposed Rules Making Amendments To The Fireworks Regulations Of The United States
Of America**

By Robert T. Kellner, Treasurer

**美国消费品安全委员会（消委会）对美国烟花法规
提议的规则修正**

March 21, 2017

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SUMMARY 概要

The Consumer Product Safety Commission (CPSC) proposes to amend its regulations regarding fireworks devices under the Federal Hazardous Substances Act.

依据《联邦危险物质法》，消委会提议对烟花法规作出修改。

The proposed amendments are purportedly based on: 修改提案将基于以下几个方面：

a) the Commission's review of its existing fireworks regulations

对消委会现行法规的回顾

a) the current fireworks market 当今的烟花市场

b) changes in technology 技术的变化

c) existing fireworks standards 现行的烟花标准

d) safety issues associated with fireworks devices. 和烟花装置有关的安全问题

SUMMARY CONTINUED 概要

The proposed amendments would create new requirements and modify or clarify existing requirements.

提案将会产生新的安全要求，改进或者进一步阐述现行要求。

Some of the proposed revisions would align with existing fireworks standards or make into law the Commission's existing testing practices.

部分提案会结合现行烟花标准，也可能把消委会的一些现行测试做法写进法规。

The Commission believes that the proposed requirements would improve consumer safety by making into law limits, test procedures, and requirements that would reduce the risk of injury to consumers and clarifying existing requirements to promote compliance.

消委会相信，通过把能降低消费者受伤风险的限定、测试程序、安全要求写进法规，或者清楚地阐明现行的安全要求以提高合规率，该提案能让消费者更安全。

YOU SHOULD COMMENT ON THIS PROPOSAL

You must submit your comments by April 18, 2017.

请于**2017年4月18日**前提交您的意见。

Comments on this proposal (Docket No. CPSC–2006–0034) may be submitted electronically or in writing:

可以通过电子或书面的方式提交意见：

Electronic Submissions: You may submit electronic comments to the Federal eRulemaking Portal at: [http:// www.regulations.gov](http://www.regulations.gov).

电子提交方式：提交电子文件到联邦门户网站 [http:// www.regulations.gov](http://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 USA 20814; Telephone (301) 504–7923.

书面提交方式：通过邮件、快递或亲手送达消委会秘书处办公室： Room 820, 4330 East-West Highway, Bethesda, MD USA 20814 电话： (301) 504–7923.

YOU SHOULD COMMENT ON THIS PROPOSAL

All comments may be posted to [http:// www.regulations.gov](http://www.regulations.gov) without change, including any personal identifiers, contact information, or other personal information.

所有意见可能不经修改直接上传到门户网站，包含个人身份标识，联系方式及其它个人信息。

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.

不要提交你不想向公众披露的机密商业信息、交易隐私信息或其它敏感或受保护的信息。如提交这类信息，消委会建议您通过邮件、亲自提交或快递的方式。

To read background documents or comments regarding this proposed rulemaking, go to: [http:// www.regulations.gov](http://www.regulations.gov), insert docket number CPSC–2006–0034 in the Search box, and follow the prompts.

如欲读取背景文件或对于本提案的意见，可以登录门户网站，在搜索栏输入文件名“CPSC–2006–0034”，然后跟着跳出的窗口操作。

CPSC CONTACT

FOR FURTHER INFORMATION CONTACT:

如欲了解更多信息，可联系：

Mr. Rodney Valliere, Project Manager,

Directorate for Laboratory Sciences, U.S. Consumer Product Safety
Commission, 5 Research Place, Rockville, MD 20850
Telephone: 301-987-2526 Email: *RValliere@cpsc.gov*.

YOU SHOULD COMMENT ON THIS PROPOSAL

The Board of Directors of the NFA would also appreciate your comments, so that we can incorporate them into ours

NFA董事会欢迎大家提出意见，我们将把这些意见合并到我们的意见里。

Please send your comments BY MARCH, 31, 2017 to:

请在3月31日前将您的意见提交到：

Ms. Nancy L. Blogin, Executive Director of the National Fireworks Association at:

nlblogin@nationalfireworks.org

Fax: 01 (816) 741-1348

Background 背景

The Federal Hazardous Substances Act (FHSA) authorizes the CPSC to regulate hazardous substances, which include fireworks devices. The CPSC assumed responsibility for administering the FHSA in 1973 from The U.S. Department of Health, Education, and Welfare which issued regulations governing fireworks and other hazardous substances. When the CPSC assumed responsibility, it adopted the existing regulations. These regulations included requirements limiting the pyrotechnic composition of fireworks devices “intended to produce audible effects” to 130 mg; carving out an exception to that regulatory limit for wildlife management purposes; and exempting certain packaged fireworks assortments from full labeling requirements.

《联邦危险物质法》（以下简称《危险物质法》）授权消委会规范包括烟花装置在内的有害物质。1973年消委会从美国“健康、教育、福利部门”接过了管理危险物质的职责，之前“健康、教育、福利部门”制定有烟花及其它危险品的法规。消委会开始负责这个工作后，采用了当时的法规，这些法规包括：限定“有意产生声响效果”的烟花装置里面火药组分的药量到130毫克；用于野生动物管理用途的产品作为例外不受此限；豁免特定带包装的烟花混合包免于完整标签要求等。

Background continued 背景

Since assuming responsibility for the FHSA, the CPSC has added provisions to the fireworks regulations. These additions include labeling requirements; prohibitions of certain chemicals; performance requirements for specific devices and bans (except for wildlife management purposes) firecrackers that contain more than 50 mg of pyrotechnic composition and other devices that do not comply. They also ban reloadable tube aerial shell devices with shells larger than 1.75 inches in outer diameter and make requirements for a stability test for large multiple-tube fireworks devices and increase the longest permissible time for a fuse to burn to 9 seconds.

从开始行使危险物质法管理责任开始，消委会添加了一些条款到烟花法规。这些新增条款包括：标签要求，某些化学物质的禁用，某些特殊产品的功能要求，以及禁止超过50毫克烟火成分的爆竹产品及其它不符合要求的产品（用于野生动物管理的例外）。他们同时禁止使用外径大于1.75英寸礼花弹的可重复装填筒形礼花弹装置，要求对大型多筒地礼产品作稳定性测试，同时把引线最长允许燃烧时间延长到9秒。

Background continued 背景

The CPSC has also reviewed Fireworks regulations in more recent years. In 2015 and 2016, the CPSC 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 is the result of that assessment. In addition, in 2016, the CPSC issued a proposed interpretive rule regarding the method of determining whether a fireworks device is “intended to produce audible effects”. The CPSC requested comments regarding its proposed interpretation, and CPSC staff considered those comments in developing the proposed regulatory change described in this notice.

近年来，消委会审视了烟花法规。在2015及2016年，消委会审视了现有法规，欲找出需要修改或明确的地方，以使它们能更有效地保护公众、反映当今的市场及技术、减少企业负担、并与其它联邦标准和行业标准相协调。本通知中提到的修改提案就是这一评估的结果。此外，在2016年，消委会出台了关于怎么确定一个烟花装置是“以产生声响效果为目的”的解释准则。消委会曾就这一提议征求意见，消委会在构思本次通知中所提及的法规变化时，也考虑到了这些意见。

Legal Authority of CPSC 消委会的法定权利

Under the FHSA, the CPSC 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 CPSC finds that, even with cautionary labeling required, 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 commerce.

依据《危险物质法》，如果一种危险物质是或者包装看起来象是家用产品或儿童使用的产品。消委会可能将这种危险物质归类为“禁用物质”，消委会发现，即使有包装警句的要求，这些物质的危险程度或者本质使这种物质仍然会对公众健康和安全带来危害，除非把这种物质有效地排除在市场之外。

Legal Authority of CPSC 消委会的法定权利

As part of this authority, the CPSC may also create design and performance standards for products that qualify as “hazardous substances”, effectively banning products that do not conform. Fireworks are “hazardous substances” as that term is defined in the FHSA. Therefore, to ban fireworks devices or create design or performance requirements for fireworks devices, the CPSC must follow the requirements for rulemaking outlined in the FHSA. Under the FHSA, the CPSC must make four substantive findings to ban fireworks devices or create design or performance requirements.

作为职责的一部分，消委会可能会制定针对“危险物质”的设计与功能标准，以有效禁止不符合标准的产品。在《危险物质法》里，烟花被定义成“危险物质”。所以，消委会需遵循《危险物质法》的规则制定标准，以禁止某些烟花装置，或对烟花装置设置设计与功能要求。依据《危险物质法》，要禁止烟花装置或对烟花装置设置设计与功能要求，消委会必须有（证明该烟花装置有危害性）四个实际的例子。

Legal Authority of CPSC 消委会的法定权利

First, the CPSC must find that when the businesses 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. CPSC must determine whether compliance with a voluntary standard is likely to adequately reduce a risk of injury to such an extent that there would no longer be an unreasonable risk of injury. They must consider 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.

首先，当受某项法规约束的商业领域，针对该法规强调的伤害风险，引入了一个自愿性标准，消委会必须要判定，符合该自愿性标准，能否有效降低该风险，以及产品符合该自愿性标准的可能性。消委会必须确定，符合该自愿性标准，能否有效地把公众受伤害的风险降低到不可能发生的程度。他们必须要考虑满足标准要求程度与速度，潜在伤害的严重程度，伤亡发生的频率，以及处于该风险下的人的脆弱性。

Legal Authority of CPSC 消委会的法定权利

Second, the CPSC must find that the benefits expected from the regulation bear a reasonable relationship to its costs. 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.

其次，消委会必须要确定，符合法规所获得的好处，是否与所需要付出的成本，有合理的比例。符合法规的好处包括：降低产品可能造成伤亡的可能性，减少伤害的严重程度。成本则包括：产品价格的提高，产品供应与适用性降低。

Legal Authority of CPSC 消委会的法定权利

Third, the CPSC must find that the regulation imposes the least burdensome requirement that adequately reduces the risk of injury that the regulation aims to address.

To evaluate this, the CPSC must compare the relative compliance costs of alternatives it considered during the rulemaking process. These findings are required only for regulatory changes or additions that would ban a hazardous substance. This includes a 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. All changes or additions must conform to the Administrative Procedure Act which requires the CPSC to provide interested parties with notice of a proposed rule and an opportunity to comment on it.

第三，消委会必须要证实，法规在实现充分减少伤害风险目标的同时，带来的成本也最低。

为做到这一点，在消委会制定规则的时候，需要对比各种方案的成本。在法规有所变更，或需要增加法规要求，以致某一危险物质被禁止时，必须要证实这一点。这种禁止可能是一个产品，也可能是一种设计，一项功能或其它可能导致产品被禁的要求。如果仅仅是解释或者现行要求有所降低，这种证实就没有必要了，因为它不会导致一种物质或产品被禁止。所有法规变更或增加法规要求必须遵循《行政管理程序法》，这一法律要求，消委会必须把法规修改提案告知利益相关体，并且让他们有机会提出他们的意见。

Legal Authority of CPSC 消委会的法定权利

Lastly, In addition to the statutory requirements that apply to rulemakings, CPSC has been directed to use voluntary consensus standards, rather than develop new standards, whenever appropriate. The goal is for CPSC to benefit from the expertise and innovation of private industry, eliminate costs associated with agency development of new standards and reduce the costs of industry compliance. The requirements and revisions proposed in this notice 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.

最后，在制定规则的时候，除适用的国家法规外，如果可能，消委会被要求尽量使用现有自愿性标准，而不是制定新标准。其目的是让消委会能从私人企业的专业知识和创新观念中获益，以免去扩展部门、制定新标准所需要的成本，也减少企业符合标准的成本。本通知中提议的要求和修改，就是希望通过解释法规要求、更新标准要求以反映现实的技术和产品、和公认的行业法规及其它联邦法规相协调，来实现这一点。

FIREWORKS VOLUNTARY STANDARDS 烟花的自愿标准

There are three international or voluntary standards for fireworks that CPSC considered for this notice:

消委会在考虑的有三个国际或自愿性标准：

- 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).

FIREWORKS VOLUNTARY STANDARDS 烟花的自愿标准

The American Pyrotechnics Association (APA) is a fireworks trade group made up of various fireworks industry members. 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

美国烟花协会（**APA**）是由烟花各行业成员组成的贸易团体，它的标准是**APA 87-1**，最新版于**2001**年发布，这一标准包含各种烟花装置，包括消费类烟花、玩具类烟花、舞台烟花及燃放类烟花的定义和要求。

FIREWORKS VOLUNTARY STANDARDS 烟花的自愿标准

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

美标所（AFSL）是一间独立的、非盈利性组织，它制定了一些消费类烟花的自愿性标准，作为第三方实验室，美标所同时提供符合其标准的测试及认证服务。美标标准最后更新日期是2009年，包含针对各种烟花装置的安全和质量标准，包括设计、功能、标签及船运。

FIREWORKS VOLUNTARY STANDARDS 烟花的自愿标准

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.

欧洲标准，由欧洲多国国家标准机构一起制定的标准，由欧洲标准化委员会推动制定，反映了欧洲的法规要求。这一标准包含定义，烟花级别，标签要求，测试方法及功能要求五部分。

FIREWORKS VOLUNTARY STANDARDS 烟花的自愿标准

Additionally, the U.S. Department of Transportation (DOT), having jurisdiction over the transportation in commerce of hazardous materials, incorporates by reference APA Standard 87–1 into its regulations.

The CPSC is proposing to incorporate by reference portions of APA Standard 87–1 into law. If the APA updates APA Standard 87–1 before the CPSC adopts a final rule, the CPSC may adopt provisions consistent with or from the 2001 version of the standard, as proposed in this notice, or may adopt or incorporate by reference provisions of the updated standard that are consistent with the requirements proposed in this notice.

此外，美国交通部（DOT）对用于商业用途的危险材料运输有管辖权，它把APA 87-1标准参考纳入其法规。

消委会提议将APA 87-1的一部分参考引入法规。如在消委会做最后决定前，APA 更新APA 87-1标准，消委会可能会采用其2001版标准的条款，如本通知所提议的，或者与本通知中所说的，采用或参考引用更新过的标准条款。

PROPOSED REQUIREMENTS 提议的要求

The CPSC 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:

消委会提议对现有烟花法规增加一些要求，并对法规做出一些修改，以明确现行要求，提高消费者安全。这些提议的修改可以归纳为以下三个类别：

A.) New hazardous substance bans 新危险物质的禁用

B.) Changes to ease the burdens associated with existing requirements, and 标准变更，以减轻现有标准所带来的负担，及

C.) Clarifications 阐述现有标准

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

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.

A 新危险物质的禁用

通过采用强制性测试方法、限制烟花装置药物含量、禁止使用一些特殊化学成份、增加产品功能要求，新提议将有效禁止目前没有被消委会现行法规禁止的危险烟花装置。

1. Adopt a Quantifiable Method of Identifying Devices That Are Limited to 130mg of Pyrotechnic Composition

1. 采用一种可量化的方法，来判定哪些烟花装置需要把烟火组分限定在130毫克

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Current Regulatory Requirement and Rationale

The current regulation states: “fireworks devices intended to produce audible effects” are banned hazardous substances if the audible effect is produced by a charge of more than 130 mg of pyrotechnic composition.

There are 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 130 mg

现有的法规要求及其合理性

现有法规声称：“对于‘有意产生声响效果’的烟花装置，如果其声响效果是由药量超过**130毫克**的烟火组分产生的，则该烟花装置被禁止”。此要求包含两方面：

首先，识别烟花装置是否“有意产生声响效果”，第二，如果是，称量其烟火组分，看是否超过**130毫克**。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

The goal of the regulation was to prohibit “dangerously explosive fireworks”. Similarly, the CPSC considered the safety need for limiting the pyrotechnic content in certain fireworks devices when it adopted the 50 mg limit for firecrackers in 1977. The CPSC stated 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”.

这一规定的目的是禁止“危险的开爆烟花”。于此类似，当消委会在1977年将爆竹的药量限制在50毫克时，考虑到安全因素，消委会对一些烟花装置限定了烟火组分药量。消委会声称，事故和伤害数据表明，伤害的严重程度与事故中涉及的烟花装置的爆炸力度有关联。大部分导致死亡或严重伤害的事故，涉及“积累了大量药物”的烟花装置。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Thus, CPSC states that the purpose of the regulation is to address injuries resulting from increased explosive power; They state that 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.

因此，消委会声称，制定法规的目的，是为了让公众关注增大的爆炸力度导致的伤害。他们声称，“声响效果”的参考意义，是通过确定烟花装置燃放产生的声音类型来判定烟花装置的类型，而不是出于任何要确定声响高低或者其对听力是否有损害的安全目的。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

This regulatory history and more recent fireworks incident data demonstrate the importance of industry compliance with the regulation for protecting consumers. The 2015 CPSC Fireworks Report state that the injuries that can result from devices that are subject to the 130 mg 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 subject to the 130 mg limit; and over the course of 1 month in 2015, an estimated 1,200 injuries (based on a nationwide probability sample) involved devices subject to the 130 mg limit

烟花管控的历史及近年来烟花事故的数据，显示了行业符合法规对保护消费者的重要性。2015年，消委会烟花报告称，“适用130毫克限定”的烟花装置产生的伤情非常严重，甚至导致死亡。总体上，2015年，11例死亡事故中，有9例与“适用130毫克限定”的烟花装置有关。在2015年，1个月之内有约1200例受伤事故（基于全国范围的抽样）与“适用130毫克限定”的烟花装置有关。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Of these estimated injuries, 100 potentially involved young children. These incidents included deaths resulting from mortar tubes held by consumers; burns requiring hospitalization after a reloadable aerial shell landed in a bystander's lap; and various other injuries

在这1200例伤害事故中，有100例可能涉及儿童。这些事故包括：因消费者手持发射筒导致的死亡、可重复装填的小炮弹落到旁观者的下肢，烧伤导致住院，以及其它各种伤害事故。

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To identify devices that had a greater explosive power, the CPSC opted to apply the 130 mg 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 CPSC testing purportedly 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 than an explosive without metallic fuel.

为判定烟花装置是否含有大的爆炸力度，消委会选择把130毫克限值用于“有意产生声响效果”的烟花装置。当这一限值被采用时，烟花装置是否是“有意产生声响效果”，能有效判定烟花装置是否具有大的爆炸能量。但是，烟花行业报道过，消委会的测试也声称，当今市场上，“有意产生声响效果”的烟花装置都含有金属燃剂。这些金属燃剂产生的爆炸力度，比不含金属燃剂的更大。

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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 130 mg limit. However, the CPSC Consumer Fireworks Testing Manual specifies how CPSC staff identifies these devices during field testing. According to the manual, CPSC staff listens for a “loud report” when the device functions, which they state indicates it is “intended to produce an audible effect”.

现有的消委会测试方法和替代测试方法

现行法规没有指出判定烟花装置是否“有意产生声响效果”的方法，以把药量限定在130毫克。不过，消委会《消费者烟花测试手册》讲述了消委会人员在现场测试过程中是如何识别这类烟花装置的。根据手册，烟花装置燃放时，消委会人员听其声音，如是“大声的开爆”，则产品是“有意产生声响效果”。

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This involves staff listening for a sound and assessing whether that sound has the qualities of an intentional effect. It is not the noise level that is determinative; rather, CPSC staff listens for a crisp sharpness that they feel is related to the pressure pulse associated with the ignition of metallic powder. If staff hears what they call a “loud report”, then they weigh all the pyrotechnic material in the break charge to determine whether it exceeds 130 mg. The CPSC Testing Manual does not carry the force of law and they feel that other options may also be valid. The CPSC believes that specifying an appropriate identification method in the regulations would provide for consistency in testing, which should facilitate compliance and consumer safety.

这种方法牵涉到，检测人员听声音，判断声音是否达到了设计的效果。消委会人员听的不是声音的大小，而是声音是否尖锐，他们认为尖锐的声音与金属粉末燃烧产生的压力波有关。如果测试人员听到他们称之为“大声的开爆”的声音，他们会把开爆药里所有的烟火材料进行称量，看其是否超过**130**毫克。

《消费者烟花测试手册》并没有法律效力，他们觉得其它方法可能也有效。消委会相信，在法规里规定一种适当的判定方法，会使测试更具一致性，这会促进烟花装置符合要求以及消费者安全性。

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To accomplish this, CPSC 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 130 mg limit. Based on these assessments, the CPSC proposes to set forth, in the regulations, a method for identifying devices that are subject to the 130 mg limit and replace the phrase “intended to produce audible effects” to reflect that method.

为实现这一点，消委会人员考察了如今市场上烟花装置的构造与设计，审查了其它判定烟花装置是否“适用130毫克限定”的替代方法。在这些评估的基础上，消委会提议在法规里加入一种判定产品是否“适用130毫克限定”的方法，来替换“有意产生声响效果”的说法。

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CPSC feels that fireworks have changed since they adopted their rules in 1973, and now use different types of powders, which impact the sounds they produce. The Fireworks industry has moved away from using black powder in break charges, and instead, often uses hybrid powders. In addition, fireworks 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. While CPSC feels that their staff has the training and experience necessary to distinguish between sounds that are intentional and sounds that are merely a byproduct of other effects or functions the CPSC believes that a simpler and more scientific test would be preferable and would facilitate consistent and accurate industry testing.

消委会认为，自1973年采用现行法规之后，烟花有了很多变化，现在使用了不同的火药，影响了他们所产生的声音。烟花行业已不再使用黑火药做开爆药，而是用混合药粉。此外，烟花通常是手工制做的，这导致同一厂家生产的同一批次烟花装置也有差别。同一烟花装置的不同样品产生的声响效果并不一致。取决于礼花弹的结构、装填密度及药量这些因素，混合药粉在产生视觉效果的同时，有意无意地也可能产生声响效果。消委会认为，他们的成员接受过培训，有足够的经验来区别哪些声音有意的，哪些只是其它效果、功能的附带效果。消委会倾向于找到一种更简单、更科学的方法，这将提高行业测试的一致性和准确性。

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To identify a method that reflects the current design of fireworks devices, reduces the variability in judgment and is simple and repeatable enough for regulated entities to follow easily and consistently, the CPSC has reviewed other existing methods of identifying devices subject to the 130 mg limit. The European Standard does not include any equivalent limit 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 CPSC could adopt.

为找到一种既能反映当今烟花设计工艺，同时减小判断上的差异，足够简单、结果可复验，以便让不同的企业都能轻松、连续使用的测试方法，消委会研究了其它现存的判定“适用130毫克限定”烟花装置的方法。欧洲标准没有类似的限值，同时很多欧洲标准所列的产品与在美国销售的不同，所以，欧洲标准没有提供消委会可以采用的替代方法。

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The AFSL Standard limits the explosive composition of various devices “intended to produce reports” to 130 mg of pyrotechnic composition (“reports” = “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. CPSC feels that while the AFSL Standard provides similar limits to APA Standard 87-1, it is less precise because it provides flexibility, permitting various fuel types.

AFSL的标准限定了不同类型“有意产生开炸效果”的烟花装置里面的爆炸组分到130毫克（“开炸” = “声响效果”）。AFSL同时规定，开爆药只能含有黑药，或等同的非金属燃剂，或其它经证明与黑药效果类似的燃剂。消委会觉得，AFSL标准虽然设置了与APA 87-1标准差不多的限值，但它没有APA 87-1标准精确，因为AFSL标准有弹性，允许不同的燃剂类型。

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APA Standard 87-1 provides the same 130 mg limit as the regulation on the pyrotechnic content of fireworks devices “intended to produce audible effects”, but also includes a 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”. CPSC feels that this is a straightforward and measurable method of determining whether a device is subject to the 130 mg limit; under this method, testers need only examine and measure the contents of the burst charge. This definition is consistent with the regulation 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 (typically potassium perchlorate and aluminum).

APA 87-1标准同样把“有意产生声响效果”的烟花装置的药量限制在130毫克，同时包含了识别烟花装置是否“有意产生声响效果”的方法。如果烟花装置开爆药里面含有颗粒小于100目的金属粉末，则该装置为“有意产生声响效果”的烟花装置。消委会觉得，这是决定装置是否“适用130毫克限定”的直观可行的方法。通过这种方法，测试员只需检查并称量开爆药。这一定义与法规一致，把传统包含金属燃剂的产品作为“有意产生声响效果”产品，就是通常使用白药的烟花装置（典型的例子是高氯酸钾加金属铝）。

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CPSC staff has conducted testing examining the relationship between metallic content in break charges and the explosive power of the fireworks device. The staff examined the effect of adding aluminum to fireworks devices. CPSC says that their analysis revealed that a 1% addition of aluminum increases the energy of a device by 3%, and that as aluminum content increases, the amount of explosive power increases, up to 25% aluminum content, at which point the explosive power begins to diminish. They feel that this demonstrates the consistency between limiting metallic content in break charges and limiting the explosive power of devices, in order to reduce injuries. 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.

消委会人员做了测试，以研究开爆药里金属含量与烟花装置爆炸力度之间的关系。测试人员研究了向烟花装置里面加入金属铝的效果。消委会说，他们的分析显示，每增加**1%**的金属铝，爆炸力度会增加**3%**；金属铝比例增加，爆炸力度随即增强；铝含量达到**25%**之后，爆炸力度开始逐渐减弱。他们觉得，这显示了限制开爆药里面金属含量和减少爆炸力度之间的关系，可以减少伤害。此外，向含能材料里面添加铝或其它金属物质，可能会提高材料对压力、电火花、摩擦的敏感度，这会带来额外的安全风险。

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The CPSC proposes to adopt a method for identifying devices that are subject to the 130 mg limit that is consistent with the method in APA Standard 87-1. However, unlike 87-1, the CPSC proposes to state the criteria directly in the regulation, without referencing “devices intended to produce audible effects”; The CPSC also proposes to state only the general criteria for identifying these devices (metallic fuel greater than 100 mesh in particle size), without the additional details in APA Standard 87-1.

消委会提议采用一种和APA 87-1标准一致的、判定烟花装置是否“适用130毫克限定”的测试方法。然而，不同于APA 87-1，消委会提议把判据直接写入法规，不再提及烟花装置是否“有意产生声响效果”。消委会同时提议，法规里面只提及判定这些装置（含有粒径大于100目的金属燃剂）的总则，不提及APA 87-1标准的其它细节。

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Comparing the CPSC Testing Manual method and the APA Standard 87–1 method, CPSC staff randomly tested fireworks samples collected in 2014-2016. Using the CPSC Testing Manual method, staff found that 17 percent of the samples were “intended to produce audible effects” and exceeded the 130 mg 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 130 mg 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” CPSC feels that this may be because the APA Standard 87–1 method relied on precise and quantifiable measurements, rather than observation, leaving less room for interpretation.

对比消委会《烟花测试手册》和**APA 87–1**标准的测试方法，消委会人员随机测试了一些于**2014至2016**年间抽取的样品。按照测试手册的方法，消委会发现**17%**的样品“有意产生声响效果”并且药量超过了**130毫克**。但用**APA 87–1**标准的方法，发现**84%**的样品是“有意产生声响效果”并且药量超过了**130毫克**。虽然样品量太少，不足以得出结论，这些结果显示了两种方法之间的显著差异。消委会认为，这可能是因为**APA 87–1**依据的是精确和可量化的称量，而不是观察。

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The CPSC proposes to specify the composition that identifies a device as subject to the 130 mg limit and retain the 130 mg limit. The CPSC 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 130 mg limit, requiring the use of a specific method creates a new requirement. Additionally, the proposed method likely would identify more devices as subject to the 130 mg limit than the current CPSC Testing Manual method. Therefore, the effect of adopting the proposed method of identifying whether a device is “intended to produce audible effects” is that the CPSC would ban more devices than it currently considers banned.

消委会提议，明确什么烟花组分“适用130毫克限定”，并保持130毫克的药量限定。消委会同时提议把整个法规里有关“声响效果”的说法去掉。现行法规没有要求使用特别方法来判定什么烟花装置“适用130毫克限定”，需要采用一种方法（来实现这一点），这产生了一项新要求。此外，建议的方法可能会判别出比现行《烟花测试手册》更多的“适用130毫克限定”的产品。因此，采用该方法的后果是，消委会会禁止一些目前没有被禁止的烟花装置。

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The proposed revision to the regulations, which focuses on the metallic content of the device, would reduce the scope of fireworks devices that are subject to the 130 mg limit because the proposed revision does not limit the content of devices containing black powder only. However, the CPSC 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 130 mg 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 130 mg of pyrotechnic composition. Therefore, the proposed provision does not limit the content of devices that contain only black powder.

对法规提议的更改，集中在烟花装置里金属物质的含量，这会减少“适用130毫克限值”产品的范围，因为它不限制只含黑火药开爆药的产品。然而，消委会也没发现目前市场上有被现有法规涵盖，但不在提议法规范围外的产品。按消委会人员现行的测试方法，只要产生“大声的开爆”，就要满足130毫克烟火组分的限制，不管烟花装置含有金属燃剂还是只含黑火药。在建议的法规里面，只有含粒径小于100目金属燃剂的烟花装置才需要满足130毫克烟花组分的限制。这样的话，提议的法规并不限定仅含黑火药的烟花装置的药量。

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However, CPSC staff's observations and testing indicates that there are no devices currently on the market that contain only black powder and produce a "loud report", subjecting them to the 130 mg 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 CPSC is proposing limits to the pyrotechnic weight in various aerial and ground devices. In addition, the CPSC 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.

然而，消委会人员的观察和测试显示，目前市场上并没有仅含黑药并产生“大声的开爆”，从而适用“130毫克限定”的烟花装置。所以，和提议的法规一样，现行法规实际上并没有限定仅含黑火药的烟花装置的烟火组分。不管怎样，为突出这一差异，同时也因为含大量黑火药的产品也会给消费者带来潜在危险，消委会提议限定不同类型升空和地面烟花装置的烟花组分的药量。此外，消委会也在考虑限定开爆药或开炸药里面更大粒径的金属粉末，可能通过限定金属粉末允许粒径大小和/或百分比的形式。

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Finding 1: Public Health and Safety

In previous rulemakings supporting the 130 mg limit, the CPSC has found that there was a substantial hazard associated with the devices subject to that limit such that it was necessary for CPSC to ban devices that exceed that limit. The proposed method of identifying these devices supports and furthers that ban by providing a quantifiable and reliable method of identifying these particularly explosive devices. Serious injuries and deaths still occur 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 130 mg limit than the APA Standard 87-1 method. Therefore, the CPSC believes that the proposed method is necessary to protect consumers and will more-consistently identify devices that need to be limited to 130 mg of pyrotechnic composition

调查发现一：公众健康及安全

在以前设定“130毫克限定”时，消委会发现，适用这种限定的烟花装置是有实际危害的，消委会必须要禁止超过该限值的产品。所提议的判定这类装置的方法，通过提供量化、可靠的检测手段，强化了对这类产品的禁止。虽然烟花装置普遍没超过这个限值，重伤或死亡依然时有发生，包括给年幼儿童造成的伤害。此外，消委会人员的测试显示，目前的测试方法判别出的“适用130毫克限定”的烟花装置比APA 87-1标准的方法要少。因此，消委会相信，所提议的方法对于保护消费者是有必要的，将更能坚实地判别出“适用130毫克限定”的产品。

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Finding 2: Voluntary Standards

The CPSC evaluated compliance with the 130 mg limit provision in APA Standard 87–1. The CPSC does not believe that there is likely to be substantial compliance with that provision of this standard. The CPSC’s testing of samples collected revealed that 84 percent (54 of 64) of devices analyzed using Standard 87–1 met that standard’s definition of devices “intended to produce audible effects” and exceeded the 130 mg limit, in violation of the standard. Moreover, the severity of the potential injuries shown in CPSC’s incident data and the vulnerability of the population at risk indicate the need for a high level of compliance. Therefore, the CPSC believes that there is not likely to be substantial compliance with the voluntary standard, so a regulatory requirement is necessary.

调查发现二：自愿性标准

消委会评估了APA 87–1标准里面“130毫克限定”条款的符合性。消委会不相信实际上能符合该标准的这一条款。消委会对样品的测试表明，用APA 87–1标准的方法，84%（64例里有54例）的烟花装置满足“有意产生声响效果”的描述，但是药量超过了130毫克，违反了标准。此外，消委会事故数据所显示的潜在风险的严重程度与风险人群的脆弱程度说明，必须提高产品的合格率。因此，消委会觉得，烟花装置实质上没有可能满足该自愿性标准，所以需要提议新的法规要求。

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Costs and Benefits

The CPSC believes that the benefits of the proposed requirement have 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. 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 devices into compliance are likely to be low, simply replacing metallic powders with nonmetallic powder, or reducing the amount of metallic powders in their devices. CPSC reasons that manufacturers already use both types of powders, that the costs are comparable and therefore, the cost to change should be low.

成本与好处

消委会认为，新的要求所带来的好处与其成本有着合理的关系。好处包括：通过提供一种更简单、更稳定的识别这类开爆力度比较大的产品的方法，可以减少受伤的可能性及严重程度。消委会对烟花样品的测试表明，**APA 87-1**标准相关条款的合格率可能不高。但是，对烟花装置做些更改，使其符合标准要求的成本可能也并不高，很简单地，用非金属药粉代替金属药粉，或减少产品里面金属药粉的含量。消委会的理由是，生产商早就已经在使用这两种药粉，两者成本是相当的，因此，对烟花装置做些更改的成本应该不高。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

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 130 mg of pyrotechnic content. However, the CPSC 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 CPSC will allow for minimal contamination of up to, but not exceeding, 1.00 % of metallic powder in burst charges

如果开爆药是由药量大于130毫克的烟火成分产生的，新的要求会禁止任何含粒径小于100目的金属颗粒的产品。然而，消委会意识到，可能难以保证烟花装置不含这类金属颗粒，因为可能有来自于效果药或环境的沾染，同时由于检测限和检测过程的变化，很难重复判定这类金属颗粒是否存在。其结果是，消委会会允许开爆药里面有少量金属粉末沾染物，但含量不能超过1.00 %。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

The CPSC 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. CPSC 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%.

消委会认为，微量存在的金属，如金属铝等，不会增加消费者安全风险，因为这点含量不会显著增强爆炸力度。消委会人员初期的测试显示，用于视觉效果金属物质可能会不小心污染开爆药，含量很低。他们发现，如果有沾染，开爆药里面污染水平通常小于1%。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Different detection instruments can vary in the particle sizes and metallic content levels they detect. CPSC 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. CPSC staff believes that both ICP–OES and XRF are viable instruments for assessing compliance with the proposed rule.

To account for these variables, the CPSC will allow up to, but not exceeding, 1.00 percent contamination of metallic powder in a burst charge.

不同的检测设备检测出的颗粒大小及金属含量会有所不同。消委会人员评估了电感耦合等离子体发射光谱仪（ICP– OES）和 X 射线荧光光谱仪（XRF）的检测水平，发现大体上检测结果相似，但是在判定的金属含量有轻微差别。消委会人员相信，这两种设备都可用于评估产品是否符合要求。

考虑到这些因素，消委会允许开爆药内含量不超过1%的金属粉末沾染。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

The CPSC believes that 1.00% is an appropriate level for two reasons. First, 1.00 % would allow for unintentional contamination at the levels CPSC staff has seen are common in fireworks devices. CPSC staff's testing revealed that when metallic content present in visual effects inadvertently contaminates a break charge, it is generally at levels below 0.4 %; a 1.00 % allowance should adequately allow for inadvertent contamination. Second, the increase in explosive force from 1.00 % metallic fuel contamination is minimal, and the CPSC believes that it does not present a notable increase in the safety risk to the public.

消委会相信，1.00%是一个合理水平，有两个原因。其一，1%容许了消委会在烟花装置中通常所发现的无意识沾染的水平。消委会的测试显示，开爆药不小心沾染效果药里的金属物质时，沾染水平通常在0.4 %以下，1%的允许值足够涵盖不小心的污染。其二，1.00 %金属燃剂沾染所导致的开爆力度的增加是很小的，消委会相信它不会显著增加公众安全风险。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

2. Limit Chemical Composition and Pyrotechnic Weight

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. However, this risk also exists for devices that do not fall within the "intended to produce audible effects" 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 than intended.

2, 限制化学组分和烟火药量

烟花装置里面烟火材料的多少直接关系到烟花装置所含的能量，含能越高的产品，给消费者带来的安全风险越大。这个风险同样存在于那些不是“有意产生声响效果”的装置类别。为强调这一点，所有自愿性标准和国际标准都限定了不同烟花装置的化学组分和烟火药量。不同类型的烟花装置，限定不一样。对于一些烟花装置，药量限定主要是限定开爆药在化学组分或效果上所占的比例。这保护了公共安全，因为大比例的开爆药会导致效果分布得比预期宽。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Currently, CPSC's fireworks regulations do not include such limits, except for certain devices, such as party poppers and firecrackers. The CPSC 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 standards discussed earlier limit different devices (some of which overlap), and some of the limits differ. 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.

目前，除了一些特殊产品，比如快乐烟花和爆竹，消委会的烟花法规不包含这些限定。消委会提议采用这些限定，以降低一些烟花装置因含有大量特殊化学组分，或者烟火组分含量太高而带来的安全风险。前面所讨论的标准对不同烟花装置都有限定（有些有重叠），有些限定有所不同。**APA 87-1**标准规定了各组成单元、发射药和烟花装置的最大化学组分，以及开爆药相对于总的化学组分的最大比例。**AFSL**的标准也一样，但是限值有些不同，而且允许选择“二者取其轻者”和不同的设计。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

The CPSC proposes to incorporate by reference the limits in APA Standard 87–1 for mine and shell devices, aerial shell kits (reloadable tube items), 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 descriptions in the regulations with which regulated entities are already familiar. They also largely comply with APA Standard 87–1 for transportation purposes, and the CPSC believes these limits provide for consumer safety by limiting the explosive power of devices.

消委会提议，参考引入**APA 87–1**标准对于地礼、升空礼花弹装置（重复装填小炮弹）、柱形花筒、锥形花筒、发光火炬、转轮及地老鼠的药量限定，有一点改动。**APA 87–1**标准里面，烟花装置的级别与其它企业已经熟知的法规比较类似。出于运输方面的需要，他们也大部分符合**APA 87–1**标准。消委会认为，通过限定烟花装置的开爆力度，这些限定产能提高消费者安全性。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

The CPSC 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 items), the CPSC 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.

消委会提议，修改APA 87-1标准的一些条款，以便将它参考引入到法规里面，包括增加对升空产品开爆威力的限制条款。对于地礼及小炮弹产品（可重复装填的），消委会建议，除APA 87-1标准已有的条款外，把发射药限制为黑火药（硝酸钾，硫磺和木炭），或其它类似的不含金属燃剂的火药。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Although the provisions that the CPSC proposes align with APA Standard 87–1’s limits on chemical composition and pyrotechnic weights for aerial and ground devices, they differ from 87-1 in some ways. The CPSC’s proposed requirement does not include descriptions that it believes are unnecessary, will include additional information that clarifies the scope of the limits.

And third, the CPSC proposes to adopt limits for only some ground devices, excluding ground spinners, flitter sparklers, toy smoke devices, and sparklers. The CPSC is omitting these devices because it does not believe these devices pose significant safety hazards to consumers.

尽管消委会提议的升空和地面烟花的化学组分和烟火药量限制条款与 **APA 87–1**标准的一致，他们在某些方面也有不同。消委会的要求去掉了那些他们认为没有必要的说明，但是添加一些说明这些限定使用范围的信息。

第三，消委会提议，只针对部分地面产品引入药量限制，不包括地面旋转、**flitter**电光花、玩具发烟装置、和电光花。消委会去掉了这些产品，因为他们不认为这些产品会对消费者安全带来很大的风险。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

The proposed revision to regulations which focus on the metallic content of devices, would reduce the scope of fireworks devices that are subject to the 130 mg limit. Specifically, under the current regulation and CPSC staff's current test method, the 130 mg limit applies to any device that produces a "loud report", whether it contains metallic fuel or only black powder. Under the proposed requirement, the 130 mg 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.

提议的、对法规的修改，针对烟花装置里面的金属成分，“适用130毫克限定”的烟花装置的范围将减小。特别地，现有法规及消委会目前采用的测试方法，是对所有产生“大声开炸”的产品设定130毫克药量的限制，不管它包含金属燃剂还是黑药。在提议里面，130毫克药量限制仅仅是针对含金属燃剂的产品，不适用于仅含黑火药的烟花装置。通过限制爆炸威力，对升空产品做烟火药量限制的提议，填补了这一法规变化所造成的条款适用范围的空挡，无论它们含金属燃剂还是只含黑火药，

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

To provide comparable limits for ground devices, the CPSC 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 rule creates, by preventing ground devices from containing large amounts of black powder. The CPSC believes that these limits are necessary to protect the public because devices containing a large amount of black powder can pose a safety hazard.

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.

为了给地面产品设定相匹配的限定，消委会提议采纳 **APA 87-1**标准里地面产品的药量限制。限制地面产品含有大量的黑火药，将填补法规变化所造成的条款适用范围的减小。消委会相信，这些药量限定对于保护公众安全很有必要，因为包含大量黑火药的产品有安全风险。

所提议的化学组份和烟火药量的限定会对烟花装置设置一些新的限制，这些限制在现行的法规里面是没有的，因此，目前不受限的一些烟火装置，可能会被禁止。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

CPSC staff randomly tested fireworks in 2014 and 2015 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.

2014和2015年间，消委会人员随机测试了一些烟花装置，以评估产品符合APA 87-1标准药量限制的情况。他们总共分析了42个产品（12个重复装填小炮弱与30个多筒地礼）。虽然样品量不足以作出决定性的结论，结果很有参考性。被测的12个小炮弹中有2个（占17%）、30个多筒地礼中有8个（占27%）超过了APA 87-1标准设定的开爆药-效果药容许的比例限定。两个类型的产品都没有超过APA 87-1标准允许的最大发射药量。此外，重复装填小炮弹都没有超过总药量的限定，但有6个（占20%）多筒地礼超过了这些限定。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

CPSC's testing showed, between 15% and 30 % 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, indicates to CPSC the need for particularly high compliance levels.

The CPSC 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.

消委会的测试表明，15% - 30%的被测样品不符合APA 87-1标准里面一些化学组份和烟火药量限定的要求。更大开爆力度的烟花装置可能导致潜在严重伤害甚至死亡，向消委会显示了高产品合格性的必要性。

消委会认为，新提议的要求所带来的好处与成本之间的关系是合理的，考虑到保障了消费者安全的好处，限制药量的一点成本是合理的。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Benefits include reducing the presence of more-energetic devices on the market, which CPSC feels pose an increased safety risk to consumers. Anticipated costs include implementing quality control measures to ensure devices do not contain more than the prescribed limits; these quality control measures may include acquiring smaller measuring devices, which is likely low in cost. According to CPSC , 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 CPSC does not expect that manufacturers will have to redesign their products.

以上提到的好处包括，减少市场上高能烟花装置的存在，消委会认为这些产品增加了消费者的安全风险。可预期的成本包括，采取质量控制措施以保证产品不含超过限值的火药，这些质量控制措施可能包括需要一些小的称量工具，这个成本应该很低。消委会的意见是，新提议的要求不会淘汰市场上任何产品，因为目前不合格的产品，只要药量满足提议的限定一样可供燃放，消委会不觉得制造商需要重新设计他们的产品。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

The CPSC believes that the Fireworks industry largely complies 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 CPSC does not have data indicating that those ground devices pose significant safety hazards to consumers. As such, the CPSC does not believe that limits for those devices are necessary.

消委会认为，因为交通部已将APA 87 – 1标准参考引入其法规，考虑到运输，烟花行业能很好地满足APA 87– 1标准的要求。APA 87 – 1标准与新提议的要求之间实质上的区别，仅仅在于新提议的要求不包含APA 87 – 1标准所列的所有地面烟花。消委会没有数据表明，这些地面产品对消费者安全会带来很大的风险，因此消委会觉得没有必要给这些产品做出限制。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Add Hexachlorobenzene and Lead Tetroxide and Other Lead Compounds to the List of Prohibited Chemicals-

Various studies indicate that fireworks devices contain HCB and lead tetroxide or other lead compounds. Testing by AFSL and CPSC has found lead compounds in 9 %to 38 % of fireworks samples, depending on the study, and in concentrations greater than 0.25 percent. Both of these chemicals are likely carcinogenic and are toxic to humans, particularly in children, and can be passed to offspring. The CPSC proposes to prohibit fireworks devices from containing these chemicals.

增加六氯代苯、四氧化铅和其它铅化合物到禁用化学物质清单

大量研究表明，烟花装置含有六氯代苯、四氧化铅或其它铅化合物。AFSL及消委会测试发现，9%-38%的烟花样品含铅化合物，含量在0.25%以上。这些化学物质有致癌可能，对人体健康有害，尤其是对儿童，并且会遗传到下一代。消委会提议禁止烟花装置含有这些化学物质。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

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. The CPSC also proposes to allow for trace contamination with these and other prohibited chemicals, consistent with the voluntary standards. Nevertheless, the CPSC 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 regulation because it would ban chemicals that are not currently prohibited in CPSC's fireworks regulations.

所有三个涉及烟花装置的自愿性和国际性标准都包含了禁止使用铅化合物和六氯代苯的内容，或两者都禁止。尽管三个标准有相似的要求，他们对六氯代苯及铅化合物所做的限定却不一致。消委会虽然也允许这些化学物质和其它禁用化学成份的微量污染，与自愿性标准相一致，但是消委会总体上仍然觉得需要禁止六氯代苯、四氧化铅及其它铅化合物。

新提议的要求会在法规的名义下，做出新的化学物质禁用规定，它会禁止使用一些现在消委会法规没有限制的化学物质。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

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.

CPSC feels that 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.

消委会的数据显示，调查发现有些烟花装置含有六氯代苯或铅化合物，并且含量超过了自愿性标准允许的范围，这是不符合要求的。因为六氯代苯和铅化合物对健康有很严重的影响，这两种化学成份对消费者有特别大的风险，需要大大提高合格率。

消委会觉得，六氯代苯和铅化合物不是烟花装置里必不可少的成份，通常不会用到它们，它们产生的作用也可以由其它更安全、更低成本的材料来代替。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Adopt a Test Method To Evaluate Side Ignition

CPSC regulations 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". thereby making devices that do not meet the fuse requirements "banned hazardous substances". The regulation does not detail how to evaluate compliance with the regulation nor does it specify what qualifies as "reducing the possibility of side ignition". 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 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 if the fuse ignites within 3 seconds.

采用一种测试方法来评估引线旁燃

消委会法规要求，使用引线的烟花装置（一些小型烟花装置除外），要使用经过处理或保护、“不能轻易从旁边点燃”的引线，不能满足这一要求的烟花装置，是要被禁止的危险物质。法规没有详细说明，怎样评估烟花装置是否满足这一要求，也没有说明怎样才算是“不能轻易从旁边点燃”。《消委会测试手册》里有一项引线旁燃测试，方法是用一根点燃的烟头从旁边靠近引线，看引线能多长时间不被点燃。《消委会测试手册》指导测试人员观测引线是否会在**5秒**之内被旁燃。目前消委会认为，引线如在**3秒**之内旁燃，该烟花装置不合格。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Between 2005 and 2015, the CPSC found 28 side ignition violations. CPSC 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. Because of the potential severity of injuries that can result if a device inadvertently ignites, the CPSC 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. While this test method has been part of the CPSC Testing Manual, it has never been a regulation and would create a new hazardous substance ban.

2005到2015年间，消委会发现 28例旁燃不合格。在2015财年消委会对211个烟花装置做了旁燃测试，发现1例（0.5%）在3秒之内旁燃；12例（5.7%）在3到5秒之间旁燃；还有198例（93.8%）5秒之内没有旁燃。因为烟花装置从旁边意外点燃可能产生严重伤害，消委会提议将《测试手册》里评估引线旁燃的测试方法纳入法规，要求引线必须能经受至少3秒的旁燃测试。这个测试方法以前只是在消委会《测试手册》里面，不是法规，（引入法规后）会导致一些产品被禁。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

The CPSC 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. 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.

消委会认为，由引线旁燃所导致的危险的程度和本质，要求必须禁止通不过旁燃测试的烟花装置，以保障公众健康和安全。如果意外旁燃，烟花燃放会给靠近该烟花装置的消费者带来巨大危险。《烟花年报》曾提及，如果烟花装置离使用者或旁观者太近，或消费者手持烟花燃放，一个烟花装置如果被意外旁燃，可能导致死亡或重伤事故。通过相一致的测试评估，把不安全的产品筛选出市场，一种可量化的、所有企业都可遵循的测试，能有效提高消费者安全性。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

The CPSC 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 CPSC believes that a particularly high level of compliance is necessary to adequately reduce this risk. Moreover, the test method that the CPSC 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.

消委会认为，完全满足APA 87– 1标准的测试方法和3秒的限值是不可能的。尽管CPSC初步的测试显示，大部分烟花装置能通过APA 87– 1引线旁燃条款，考虑到烟花装置意外旁燃造成的伤害的严重程度，消委会认为必须把合格率保持在特别高的水平，以有效降低风险。消委会提议的测试方法还包含一些APA 87– 1标准没有的附加描述，使提议的测试方法更清晰，这会提高合格率和测试结果的一致性。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

The CPSC believes that the 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 CPSC does not expect the costs associated with this to be high, particularly because testing costs can be allocated across all devices with fuses.

消委会认为，可预见的成本包括：开发一种测试方案，来评估产品是否符合要求，以颁发符合性证书；改进烟花装置，使其能经受更长时间的旁燃；可能把一小部分产品驱逐出市场。消委会认为跟这项工作有关的成本不会太高，因为测试成本可以均摊到所有带引线的产品。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Bases Must Remain Attached to Devices

CPSC's regulations provides a minimum base-to-height ratio for fireworks devices that aims to reduce the likelihood of devices tipping over. However, the ratio test 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. Although the CPSC's reports do not specifically track incidents or injuries that involve detached bases, they do 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 which resulted in severe burns.

底座必须保持在烟花装置上

为防止一些烟花装置翻倒，消委会法规规定了一个最小的底座-高度比例。然而这个比例测量是一种静态测试，不能评估烟花装置燃放时是否会翻倒。燃放时，如果没有底座，或底座没有牢固固定，产品可能翻倒。如果燃放时产品翻倒，有严重的安全风险。尽管消委会的报告没有特别指出与底座有关联的事故或伤害，他们指出，2015年在一个月时间里，6%的事故涉及烟花装置翻倒，13%的事故涉及斜飞，导致了严重的烧伤。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

CPSC staff observed that several devices on the market do not have bases or they have bases that became detached before or during use. CPSC does not systematically check for base attachment issues because currently is not a requirement. However, staff witnessed between 1999 and 2016 that 88 tested 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 2010 and 2016, suggesting a decline in quality control. 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 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.

消委会人员观察到，市场上一些烟花装置没有底座，一些有底座，但是使用前或使用从烟花装置上脱落了。因为法规目前没有要求，消委会没有系统地检查这些底座。然而，消委会在1999到2016年间发现，有88例产品没有底座，或使用前及使用从产品上脱落的情况，32例测试过程中翻倒，76例筒子结构不算完整，其中有一半底座脱落的情况是在2010到2016年间发现的，显示质量控制水平的下降。在一些案例里，消委会注意到底座在产品收到时就已经脱落或者破损；其它情况下，底座在操作时脱落；还有一些情况，底座在产品燃放时脱落或破裂。消委会从4,554个产品里面发现111例（2.4%）产品有或者应该有底座，但是在燃放过程中底座丢失或者没有正常工作。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Because of the safety risk associated with devices tipping over, the CPSC 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 CPSC staff has observed devices that arrive with no base or a detached or broken base, the CPSC proposes to extend this requirement to storage as well. Because DOT has jurisdiction over transportation safety, the CPSC's proposed provision does not address transportation.

考虑到烟花装置翻倒带来的安全风险，消委会提议，在存储、搬运和正常操作过程中，底座必须保持在烟花装置上。

提议的要求和AFSL标准以及APA 87-1的条款类似，要求运输、搬运和正常操作过程中，底座必须保持在烟花装置上。然而，消委会人员观察到，产品在到达的时候就没有底座，底座脱落或者破损，消委会提议把这一要求也延伸到存储环节。因为DOT对运输安全有执法权，消委会提议的条款没有突出运输环节。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

This proposal would create a new hazardous substance ban because it would add a requirement to the regulations that bases must remain attached during storage, handling, and normal operation. Any fireworks device that does not comply with this regulation would constitute a banned hazardous substance. CPSC feels that fireworks items that do not have bases that are attached securely or have tipped over during firing has increased in recent years. The CPSC also believes that the voluntary standard provisions do not address detachment that occurs during storage. The CPSC believes that the costs associated with the proposed requirement are reasonable and would be affixing bases to devices or designing them as a single piece.

这项提议设定了新的危险物质禁令，它会在法规里面增加一项要求，存储、搬运和正常操作过程中，底座必须保持在烟花装置上。任何不符合这项法规的产品会变成被禁止的危险物质。消委会觉得，近年来底座没有牢固固定或者燃放时翻倒的烟花装置数量有所增加。消委会同时认为，自愿性烟花条款没有强调烟花装置在存储时发生底座脱落的情况。消委会相信，这项提议涉及的成本是合理的，成本包括在烟花装置上加上底座，或者把它们设计成一个整体。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

Prohibit Devices From Projecting Fragments When Functioning

Incident data reported to the CPSC for 2005 to 2015 indicate that some incidents may have involved fireworks that projected fragments when they fired. During compliance testing, CPSC staff observed hard plastic, metal, or other fragments expelled when fireworks devices function.

To address this safety hazard, CPSC proposes to prohibit fireworks devices from projecting sharp debris when functioning. The CPSC proposes to incorporate by reference the APA Standard 87–1 provision, listing specific types of materials that a fireworks device may not project, including metal, glass, and brittle plastic.

禁止烟花装置燃放时抛射碎片

2005到2015年间提供给消委会的事故数据显示，一些可能涉及到烟花装置的事故和它们在燃放时抛射碎片有关。做合格性测试的时候，消委会人员观察到，烟花装置燃放时，会抛出硬塑料、金属或其它碎片。为突出这一安全风险，消委会提议禁止烟花装置燃放时抛射尖锐的碎片。消委会提议参考引入APA 87–1标准的条款，列出来烟花装置可能抛射出来的材料类型，包括金属，玻璃和易碎的塑料。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

However, the CPSC 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.

The CPSC 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 CPSC proposes to incorporate by reference this provision of the voluntary standard.

消委会征求了一些意见，这个条款是否只针对一定大小或数量的碎片，而不是一条严格的通用禁令，因为一些烟花装置可能需要这些材料作为部件。

因为现行法规没有禁止烟花装置抛射尖锐的碎片，这会形成一条新的禁令，根据《危险物质法》，消委会需要提供实例。消委会认为**APA 87-1**标准能有效降低与抛射碎片有关的伤害风险，因为它禁止烟花装置抛射可能会伤害到旁观者的碎片，因此消委会提议参考引用这个自愿性标准条款。

PROPOSED REQUIREMENTS-NEW BANS 提议的要求-新的禁止

The CPSC believes that the proposed requirement increases 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. The CPSC believes that the proposed requirement is a performance-based standard that prohibits devices that project fragments and does not otherwise limit the design of devices.

消委会认为，新提议的要求会更保障消费者安全。其成本可能包括，需要重新设计烟花装置，以消除作为碎片的散落物或抛出物；采用更严格的质量控制，以保证这些部件不会作为碎片散落或抛出。消委会认为，这项提议的要求是一项基于功能考虑的标准，禁止抛射碎片的烟花装置，并不会限制烟花装置的设计。

EASING EXISTING REGULATIONS 简化现行法规

The current regulations prohibit the presence of certain chemicals in fireworks devices. This requirement has existed in CPSC's regulations since 1976. However, detection 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.

现行的法规限制烟花装置里一些化学物质的存在。这项要求自1976年起就出现在消委会的法规里。但是，自从消委会接受这项条款，检测技术有了很大的发展，现在的检测能识别出以前判别不出的微量化学物质。检测的精密性使得证实烟花装置里面完全不含这些受限的化学物质困难又繁琐，因为这些设备通常能在百万分之一或者万亿分之一的水平量化指出这些化学物质的存在，而不是零。

EASING EXISTING REGULATIONS 简化现行法规

CPSC wishes to use Inductively Coupled Plasma-Optical Emission Spectroscopy (ICP- OES) and X-Ray Fluorescence (XRF) to identify the presence of chemicals that inadvertently are present in the manufacturing environment. The CPSC 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.

消委会希望采用ICP- OES和XRF的方法来判定这些生产环节中无意识（引入的）化学物质的存在。消委会认为，这些微量存在的化学物质不会给消费者带来风险，因为这么小的量不会影响火药的反应速度和开爆力度。

EASING EXISTING REGULATIONS 简化现行法规

APA Standard 87-1, allows for trace amounts of all prohibited chemicals, if the trace amount is less than 0.25 percent by weight. The AFSL Standard 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.

Another CPSC Act limits the lead content of most children's products to 0.01 percent by weight and limits lead compounds in coating materials to .009% by weight.

CPSC staff conducted testing to identify prohibited chemicals in fireworks devices. Examining samples collected, CPSC staff found that 90% of the samples (29 of 32) contained titanium with 100-mesh particle size or smaller, in violation of the regulation and 38% of the samples (12 of 32) contained lead, which the CPSC proposes to prohibit in this NOTICE.

APA 87-1标准允许微量的受限化学物质存在，如果它们的含量低于0.25%。AFSL标准允许低于0.01%的HCB的存在，但是不是对所有的受限化学物质都接受。

另一项消委会法规把大部分儿童用品里面的铅含量限定在0.01%，把涂层里面铅化合物的含量限定在0.009%。消委会人员做了一些测试，来判定烟花装置是否含受限的化学物质。他们检测了收集到的样品，发现90%的样品（32个里面的29个）含有粒径小于100目的钛粉，违反了法规；38%的样品（32个里面的12个）含有铅，如本通知所说的，消委会提议禁止这些化学物质。

EASING EXISTING REGULATIONS 简化现行法规

However, applying a trace contamination allowance of 0.25% by weight (consistent with APA Standard 87-1), only 9% (3 of 32) exceeded this limit for titanium with 100-mesh particle size or smaller and only 3% (1 of 32) exceeded this limit for lead compounds. Applying an even lower contamination allowance of 0.05% by weight, only a few samples (9 to 16%) exceeded this threshold for titanium with 100-mesh particle size or smaller, and none of the samples exceeded this limit for lead compounds. HCB has been found in fireworks devices in the range of 0.25 % by weight.

There are several options that the CPSC may adopt as an allowance for all prohibited chemicals or as trace allowances for particular chemicals, such as HCB and lead tetroxide and other lead compounds.

然而，如果允许0.25%的微量沾染（和APA87-1标准一致），只有9%的样品（32个里面的3个）会超过钛粉粒径不得小于100目的限制，只有3%的样品（32个里面的1个）铅化合物含量会超标。如果采用更窄的0.05%允许沾染水平，也只有几个样品（9%到16%）会超过钛粉粒径不得小于100目的限制，没有样品含有超过限值的铅化合物。烟花装置里面HCB的含量一般在0.25%以内。

消委会有几种选择，对所有受限化学物质设定一个允许值，或者对一些特定化学物质设定允许值，比如HCB，四氧化铅和其它铅化合物。

EASING EXISTING REGULATIONS 简化现行法规

With the exception of HCB, the CPSC proposes to:

Allow for trace amounts up to 0.25 % the prohibited chemicals listed in the regulation, including lead tetroxide and other lead compounds, which the CPSC proposes to add to the regulations in this NOTICE. This contamination level is consistent with the level provided in APA Standard 87-1. The CPSC proposes to allow for trace amounts of 0.01% for HCB. This contamination level is consistent with the level provided in the AFSL Standard.

The CPSC also may adopt trace contamination allowances in the regulations, in compliance guidance, or in the CPSC Testing Manual. This would maintain the strict prohibition in the regulations but give the CPSC flexibility in enforcing violations of the prohibited chemicals ban.

除了HCB，消委会提议：

对于法规所列的受限化学物质，允许0.25%的微量存在，包括四氧化铅和其它铅化合物，如本通知所说，消委会建议把它添加到法规里面。这个允许污染的水平 and APA 87-1标准设定的一致。对于HCB，消委会提议允许0.01%的微量存在，这个允许污染的水平 and AFSL标准一致。

消委会可能在法规，符合性指引文件，或者测试手册里面引入允许微量污染的条款。这会维持法规对受限物质的严格管控，但是又给消委会在处理违规的时候一些灵活性。

CLARIFYING EXISTING REGULATIONS 解释现行法规

While not creating any new requirements or ban, CPSC wishes to incorporate definitions to, hopefully, eliminate inconsistencies in the regulations.

1. Define “Burst Charge”

The proposed modifications to the regulations regarding the method of identifying devices that are limited to 130mg of pyrotechnic composition focus on the content of the “burst charge” of the device. Additionally, “burst charge” appears in the proposed chemical composition and pyrotechnic weight limits regulations. Therefore, the CPSC proposes to define “burst charge” as a chemical composition that breaks open an aerial device—and identifying “expelling charge” and “break charge” as common synonyms for “burst charge”.

在不设定新的要求和禁令的情况下，消委会希望在法规里引入一些定义，以消除歧义。

1. 定义：开爆药

用什么方法来判定烟火装置是否适用130mg烟火组分含量限定，提议的对法规的修改，集中在烟花装置里面“开爆药”的含量。此外，“开爆药”这个术语也出现在提议的化学组分和烟火药量限制里面。因此，消委会提议，把“开爆药”定义成一种化学组分，它把升空烟花装置炸开的，并且把“expelling charge”和“break charge”看做是“开爆药”的同义词。

CLARIFYING EXISTING REGULATIONS 解释现行法规

2. Define “Chemical Composition”

To align with industry standards, the CPSC proposes to incorporate by reference the definition of “chemical composition” as set forth in APA Standard 87–1.

In addition, the CPSC 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 CPSC believes it clarifies information, which facilitates industry compliance with the proposed chemical composition and pyrotechnic weight limits.

2. 定义：化学组分

为与行业标准相匹配，消委会提议参考引入**APA 87-1**里“化学组分”的定义。

进一步地，消委会提议，明确“化学组分”是由发射药，开爆药，视觉和声响效果药组成。这条增加的信息是**APA 87-1**标准里面没有的。消委会认为这会明确概念，促进行业满足提议的对化学组分和烟火药量进行限制的要求。

CLARIFYING EXISTING REGULATIONS 解释现行法规

3. Define “Explosive Composition”

The proposed definition of “chemical composition” includes the term “explosive composition.” In addition, the proposed definition of firecrackers, discussed later, also includes this term. To facilitate clear and consistent industry understanding of this term, the CPSC proposes to define “explosive composition” as in APA Standard 87–1 describing the function and effect. The CPSC believes that this definition accurately describes the term.

For this reason, and for consistency with this recognized standard, the CPSC proposes to incorporate by reference the APA Standard 87–1 definition

3. 定义：爆炸组分

建议的“化学组分”的定义包括术语“爆炸组分”。此外，建议的、稍后会讨论的定义“爆竹”也包括这个术语。为帮助行业明白并且也使用这个术语，消委会提议按照APA 87-1来定义“爆炸组分”，通过描述它的功能和效果。消委会认为该定义准确地描述了这个术语。

基于这个原因，并且为了和现行的标准相一致，消委会提议参考引用APA87-1的定义。

CLARIFYING EXISTING REGULATIONS 解释现行法规

4. Define “Lift Charge”

The chemical composition limits that the CPSC proposes include limits on the chemical composition of “lift charges”. The CPSC proposes to define the term so that regulated entities have a clear and consistent understanding of the components to which these limits apply. The chemical composition limits that the CPSC proposes are similar to those in APA Standard 87–1, defining “lift charge” by its function (lifting or propelling a device into the air) and composition. However, the APA Standard definition refers only to mine or shell devices, not all fireworks devices. As an alternative to the APA Standard 87–1 definition, the CPSC believes that it may be appropriate to define “lift charge” in a manner that applies to all fireworks devices. The CPSC requests comments on this alternative.

4. 定义：发射药

消委会提议限制的化学组分包括限制“发射药”化学组分。消委会提议对这个术语做出定义，以便企业对哪些部件需要施加限定有清晰和一致的理解。消委会提议的化学组分限定和**APA 87-1**的标准类似，通过功能（提升或驱动烟花装置升空）和成分来定义“发射药”。然而**APA**标准的定义只针对地礼产品，不是所有烟花装置。和**APA 87-1**标准不同，消委会认为应该针对所有的烟花装置来定义“发射药”。消委会为此征求意见。

CLARIFYING EXISTING REGULATIONS 解释现行法规

5. Define “Pyrotechnic Composition”

The term “pyrotechnic composition” appears in several existing CPSC fireworks regulations, as well as in several of the requirements proposed in this NOTICE. Specifically, the term appears in the proposed definitions of “burst charge” and “chemical composition”, the proposed chemical composition and pyrotechnic weight limits the current regulations (in reference to fuse requirements, pyrotechnic leakage, toy smoke and flitter devices, and party poppers). APA Standard 87–1 defines “pyrotechnic composition,” describing how it functions and the effects it produces. The CPSC believes that this definition accurately describes “pyrotechnic composition”. For that reason, and for consistency with the industry standard, the CPSC proposes to incorporate by reference APA Standard 87–1’s definition.

5. 定义：火药组分

几个现行消委会法规里都出现了术语“火药组分”，本通知提议的几个要求里也出现了。特别地，这个术语也出现在推荐的定义“开爆药”和“化学组分”，和提议的化学组分和火药药量限定里面（参考引线要求、火药泄露、玩具烟球和快乐烟花）。APA 87–1标准定义了“火药组分”，描述了它的功能和产生的效果。消委会认为该定义准确地描述了“火药组分”。因为这个原因，同时为了和行业标准相一致，消委会提议参考引用APA87-1的定义。

CLARIFYING EXISTING REGULATIONS 解释现行法规

6. Clarify Requirements for “Aerial Bombs”

The term “aerial bomb” appears twice in CPSC’s fireworks regulations, first, in a ban of fireworks devices intended to produce audible effects if they are produced by more than 130mg of pyrotechnic composition. This section lists examples of devices that are “intended to produce audible effects”, including “aerial bombs”. As a result, the regulation only bans aerial bombs if they contain more than 130mg of pyrotechnic composition. In another CPSC regulation, it listed banned devices outright, including “aerial bombs”. To eliminate this inconsistency, the CPSC believes that it is appropriate to ban aerial bombs entirely. In addition, the CPSC proposes to define “aerial bombs” to provide clarity about which devices are banned. The CPSC proposes to define “aerial bomb” as “a tube device that fires an explosive charge into the air without added visual effect”.

6. 阐明对“空中炸弹”的要求

术语“空中炸弹”在消委会标准里面出现了两次，第一次是在禁止使用超过130mg的火药组分、有意产生声响效果的产品时。该部分列出了一些“有意产生声响效果”产品的例子，其中包括“空中炸弹”。其结果是，法规只禁止含有超过130mg火药组分的“空中炸弹”。在另一个消委会标准里，列出了直接禁止的产品，其中包括“空中炸弹”。为消除歧义，消委会认为应该完全禁止“空中炸弹”。此外，消委会提议定义“空中炸弹”，以明确什么产品是禁止的。消委会提议定义“空中炸弹”为“一种管状烟花装置，发射开炸药到空中，没有其它视觉效果”。

CLARIFYING EXISTING REGULATIONS 解释现行法规

7. Define “Firecrackers” and Rephrase References to Firecrackers-

The CPSC proposes to incorporate by reference the APA Standard 87–1 definition for firecrackers.

Second, the CPSC proposes to revise the references to firecrackers in the regulations so that they are more consistent. CPSC’s regulations refer to “firecrackers”, “firecrackers designed to produce audible effects”, and “devices designed to produce audible effects”. 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”. This revision may also minimize confusion with the similar phrase “intended to produce audible effects”.

7. 定义：爆竹，改述涉及爆竹的条款

消委会提议参考引用**APA87-1**标准对爆竹的定义。

消委会提议修改法规里面涉及爆竹的部分，让它们更协调。消委会的法规提到了“爆竹”，“用以制造声响效果的爆竹”和“有意产生声响效果的烟花装置”。所提议的“爆竹”的定义说，这些烟花装置在燃放时会产生声音（或声响效果）。这种声音是一种专门的效果，爆竹就是被设计出来产生这种效果的。因此，没有必要判断爆竹是否“设计以制造声响效果”。这个改动也将减少与类似说法“以产生声响效果为目的”的混淆。

CLARIFYING EXISTING REGULATIONS 解释现行法规

8. Move the Exemption for Firecrackers From the Scope Section of the regulations to the Individual Sections of the regulations that Are Relevant to Firecrackers-

The current regulations prohibit chlorates in fireworks devices. However, the CPSC concluded that should not apply to firecrackers because chlorates are common and adequately safe in firecrackers. Similarly, the CPSC decided that firecrackers need not be subject to the fuse requirements because the type of fuses those requirements aim to address are not used in firecrackers.

This movement would make the regulations more consistent and clear and not change the scope of the regulations.

8. 把法规“范围”这个章节对爆竹的豁免移到法规涉及到爆竹的各独立章节

现行法规禁止氯酸盐用于烟花装置。然而，消委会认为这不适用于爆竹，因为爆竹里面氯酸盐很常见，并且也相当安全。同时，消委会决定爆竹不需要满足引线的要求，因为这些要求所针对的引线并没有用于爆竹。

这个（条款的）移动使法规更完善和清晰，同时不会更改法规的范围。

CLARIFYING EXISTING REGULATIONS 解释现行法规

9. Make Editorial Correction to Language Regarding Fuse Attachment –

The current regulation 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”. The CPSC proposes to correct this typographical error. 烟花装置自身的

9. 对涉及引线连接方式的语言进行修正

现行标准要求，引线必须可靠地连接在烟花装置上。为了考核引线是否可靠地连接在烟花装置上，法规要求，引线应能支撑以下两个重量中较轻的那个，而不会从装置上脱离：（1）烟花装置自身的重量再加8盎司，或者（2）2倍装置的重量。然而，在讲述两种重量的选择时，法规说：“whether is less”而不是“whichever is less”。消委会提议修正这个表达上的错误。

CLARIFYING EXISTING REGULATIONS 解释现行法规

10. Define “Base”

The current regulation specifies requirements relevant to bases of fireworks devices and, the CPSC proposes additional requirements regarding bases in this NOTICE.

The CPSC proposes to define the term “base” similar to 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 CPSC proposed to adopt a definition that is consistent with the AFSL Standard, but includes more detail to provide greater precision and clarity.

10. 定义：底座

现行法规对烟花装置底座做了要求。如同本通知中所说的，消委会提议增加对底座的要求。

消委会提议对“底座”进行定义，和AFSL标准第1-2.1章节类似，把它描述成一个平台，烟花装置通过它作用，筒子安装在它上面。消委会提议采用一个和AFSL标准相一致的定义，但是它包含更多细节，让定义更精确。

CLARIFYING EXISTING REGULATIONS 解释现行法规

11. Define “Burnout” and “Blowout”

The current regulation requires the pyrotechnic chamber in fireworks devices to be constructed “to allow functioning in a normal manner without burnout or blowout”. The CPSC 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 CPSC believes that these definitions accurately capture the meaning of these terms and reflect the understanding of the fireworks industry. Therefore, the CPSC proposes to incorporate by reference the definition in APA Standard 87–1.

11. 定义：烧筒和炸筒

现行法规要求，烟花装置里含火药部分的腔室设计成正常情况下烟花装置能正常燃放，不烧筒，不炸筒。消委会提议采用“烧筒”和“炸筒”的定义，和现行要求一致。

APA 87-1 标准在第2.3章节定义了“炸筒”，在2.4章节定义了“烧筒”，描述了这两种现象的可观察效果。消委会认为这些定义准确地表达这两个术语的含义，反映了对烟花行业的了解。因此，消委会提议参考引用APA87-1 标准的定义。

Incorporate by reference 参考引用

These proposed rules incorporate by reference several provisions of APA Standard 87–1. As required by law, this material must be made available to anyone that interested. Interested parties may view the standard as a read-only document during the comment period of this NOTICE at: <http://www.americanpyro.com/>.

这些提议的要求参考引用了APA 87-1的一些条款。根据法律要求，这些资料应该向所有感兴趣的人开放。在本意见征集期，感兴趣的群体可以到 [http:// www.americanpyro.com/](http://www.americanpyro.com/) 网站找到只读的标准。

Regulatory Flexibility Act 行政立法弹性法案

The Regulatory Flexibility Act requires CPSC to consider the impact of proposed rules on small businesses and to prepare an analysis available to the public for comment.

Specifically, the CPSC must discuss: the reasons the agency is considering the action; the objectives of and the 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 kinds of small entities subject to it and the skills necessary to prepare the reports or records; and the rules that may duplicate, overlap, or conflict with the proposed rule. Also, they 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.

《行政立法弹性法案》要求消委会考虑提议的规则对小企业的影响，准备一份分析报告，对公众开放以征求意见。特别地，消委会必须探讨：机构认为需要这项行动的原因；提议的规则的目标和法律基础；什么实体适用该提议的规则，估计有多少实体可能会受到影响；报告，记录保管和其它要求，包括该规则适用于哪些类型的小企业，准备报告和记录需要具备哪些技能；该规则是否和其它建议的规则相重复、重叠、或者抵触。同样的，他们必须指出该提议规则是否有任何有效替代方案，以实现所声明的目标，同时减少给小企业带来明显的经济影响。

Regulatory Flexibility Act 行政立法弹性法案

To summarize, the CPSC 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 CPSC 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 CPSC 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 CPSC requests comments on the costs of complying with the provisions regarding base attachment and fragments.

总而言之，消委会没有足够的信息来确定，是否所有提议的条款对大量的小企业不会造成大的经济影响。消委会不希望符合这些条款的成本会给大量的小企业造成大的经济影响。然而，消委会没有足够的信息来精确预估符合底座和碎片条款需要的成本。为给其决定和分析提供更多的信息，消委会开始征求意见，以了解符合底座和碎片条款所需要的成本。

Regulatory Flexibility Act 行政立法弹性法案

Reasons the Agency Is Considering the Action-

The CPSC 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.

Objectives of and Legal Basis for the Proposed Rule-

The objective of the proposed rule is to update CPSC's fireworks regulations and the legal authority for the proposed rule is the FHSA, which authorizes the CPSC to adopt regulations regarding hazardous substances and regulatory provisions necessary to enforce those requirements.

机构认为需要行动的原因 -

消委会正在考虑用提议的规则来更新现存的烟花法规，以反映当今的烟花市场，技术的变化，现行的烟花标准，和与烟花相关的安全问题，以减少烟花装置带给消费者的伤害风险，同时与其它自愿性和联邦标准相一致。

提议的规则的目标和法律基础 -

目标是更新消委会的烟花法规，对此项提议负责的法定机构是FHSA，它授权消委会采用与危险物质有关的法规和施行这些要求的必要行政条款。

Regulatory Flexibility Act 行政立法弹性法案

D. Small Entities Subject to the Proposed Rule

The U.S. Small Business Administration (SBA) defines manufacturers as “small” if they have fewer than 500 employees, importers as “small” if they have fewer than 100 employees (wholesalers) or less than \$7.5 million in sales (retailers). AFSL maintains a public list of U.S. importers and Chinese manufacturers that participate in its programs. Its list includes 165 importers, of which 159 are probably small and six are large. 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.

适用该规则的小企业

“美国小企业行政管理机构（SBA）”把人数少于500人的生产商、人数少于100人（对于批发商）或者销售额低于7百50万美元（对于零售商）的进口商定义成小企业。AFSL维护有一份公开的、参与其测试计划的美国进口商和中国生产商的清单。它的清单包括165家进口商，其中159家可能是小企业，6家是大企业。AFSL声称它的会员代表了85%到90%的美国进口商，显示市场上应该有183到194家进口商。

Regulatory Flexibility Act 行政立法弹性法案

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 NOTICE and clarifies existing requirements.

Second, the proposed rule includes provisions to reduce burdens on the fireworks industry by allowing trace amounts of prohibited chemicals.

Third, the proposed rule includes new hazardous substances bans.

拟定规则的要求和对小企业的潜在影响

提议的规则包含三种类型的要求。

首先，拟定的规则在法规或者本通知所提议的要求里面，增添了对大量术语的定义，并且澄清了现有的要求。

其次，通过允许受限物质的微量存在，拟定的规则包含了一些减少烟花行业负担的条款。

第三，拟定的规则包含新的危险物质禁令。

Regulatory Flexibility Act 行政立法弹性法案

The following proposed requirements may impact small entities by:

- 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.

以下提议的要求可能会对小企业带来影响：

- 禁止带开爆药的烟花装置含有粒径小于100目的金属粉，如果其开爆药由超过130毫克的烟火组分组成；
根据烟花类型，限制总的烟火药量和化学组分；
在烟花装置里限制HCB、四氧化铅和其它铅化合物；
要求做引线旁燃的测试；
- 要求存储、操作和使用过程中底座保持在烟花装置上；
- 禁止烟花在燃放过程中抛射碎片。

Regulatory Flexibility Act 行政立法弹性法案

1. Allow for Trace Contamination of Prohibited Chemical

The proposed rule would allow for trace amounts of prohibited chemicals in fireworks. The CPSC 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 2000 and 2015, CPSC found 41 violations of this regulation. Of these violations, four came from samples that contained prohibited chemicals in concentrations below the proposed allowance limit of 0.25 percent. The proposed requirement may reduce burdens by no longer requiring manufacturers to ensure the absolute absence of prohibited chemicals.

1. 允许受限化学物质的微量存在

提议的规则将允许烟花中存在微量的受限化学物质。消委会建议不同的化学物质，不同的允许沾染水平和合格率，和自愿性标准和其它联邦法规一致。因为技术的提升，测试者现在能判定含量非常低的化学物质，它们不会对消费者安全构成影响。2000和2015年间，消委会发现41例违反法规的情况。在这些违规中，有4起样品中含有受限的化学物质，含量在提议允许的0.25%以下。新要求可能会减少生产者的负担，因为他们不再需要保证产品中完全不含这些受限的化学物质。

Regulatory Flexibility Act 行政立法弹性法案

Ban Fireworks Containing Metallic Powder Less Than 100 Mesh in Particle Size With Greater Than 130 mg of Pyrotechnic Material

The proposed rule would adopt a new method of identifying devices that are subject to the 130mg limit, replacing the identifier “devices intended to produce audible effects” with a description of the content of the devices.

CPSC’s testing revealed that more than 85 percent of samples do not comply with the proposed standard. This indicates that fireworks manufacturers may incur some costs to comply with the proposed regulation.

To comply with the proposed requirement, the CPSC expects fireworks producers to replace metallic and hybrid powders with black powder formulations. CPSC states that 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.

如果含有大于130毫克的烟火材料，禁止烟花装置含有粒径小于100目的金属粉末

新规则会采用一种确定烟花装置是否适用130毫克限定的新方法，取代以前评判“烟花装置是否有意产生声响效果”并对药量做出限制的方法。消委会的测试显示，超过85%的样品不符合新标准。这意味着烟花生产商可能需要做些投入，以符合新标准。

为符合新标准，消委会专家建议烟花制造商用黑火药来取代金属和混合药剂。消委会声称，对于不得不调整配方的企业，从金属和混合药剂转化到黑火药带来的成本变化不会给企业带来大的影响。

Regulatory Flexibility Act 行政立法弹性法案

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. CPSC states that 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.

限制烟花装置里面总的烟火材料药量和化学组分

新规则限制了不同烟花装置里面总的烟火材料药量和化学组分。这些条款和**APA 87-1**的限制一致。消委会声称，从白火药和混合药剂转化到仅含黑火药，**APA 87-1**限定的药量已经有足够高，能保证烟花装置正常作用所需的爆炸能量。消委会起始的检测发现，有些升空烟花装置不能满足提议的药量限制。为满足提议的新要求，不符合要求的制造商可能需要采取质量管理措施，以保证烟花装置满足特定的药量限制。

Regulatory Flexibility Act 行政立法弹性法案

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 trace contamination. 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. To create “crackle” effects, bismuth trioxide has largely replaced lead 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.

禁止烟花装置里含有HCB、四氧化铅和其它铅化合物

新规则将禁止烟花装置里含有HCB、四氧化铅和其它铅化合物，不管是全部还是允许微量的沾染。自愿性法规和国际标准禁止这两种化合物，或是它们的组合。测试显示，烟花装置满足这些禁止的合格率是很高的。研究表明，一些烟花装置含有HCB、四氧化铅和其它铅化合物，但这些装置并不代表市场上大部分的烟花。为了做出“爆裂”的效果，氧化铋已经大量取代了铅，因为氧化铋不贵，效果还更好。作为颜色增强剂，HCB曾经盛行在烟花中，但自从一些标准禁用HCB，烟花生产商减少了它的使用。

Regulatory Flexibility Act 行政立法弹性法案

Require Testing for Side Ignition of Fuses

The proposed rule would amend the regulation 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 proposed test method would require fireworks manufacturers and importers to conduct the test to issue a certificate of compliance with their products. CPSC concludes that 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.

引线旁燃的测试要求

新规则将修改法规，以包含引线旁燃测试。这个测试目前在消委会《测试手册》有说明。测试要求，把香烟点着的一端靠近引线侧面，观测引线被点着花了多长时间。在提议的要求里面，如果3秒内被点着，该烟花装置不合格。消委会的测试显示，99.5%的烟花能通过这个推荐的引线旁燃测试。

提议的测试方法要求烟花生产商和进口商做这个测试，并给他们的产品颁发一份证书。消委会推断，生产商可以测试引线样品的处理工艺或者涂层，以推断处理工艺或者涂层是否有效，并把测试结果用于所有用到相同类型引线的烟花装置。

Regulatory Flexibility Act 行政立法弹性法案

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 CPSC 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 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 CPSC 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.

要求运输、操作和燃放过程中底座保持依附在产品上

新规则要求，运输、操作和燃放过程中底座保持依附在产品上。消委会认为这个要求只会给生产商带来很小的影响。测试烟花样品时，消委会没有检测底座的连接，但是如果底座脱落，消委会人员会把它记录在测试报告上。从1999年到现在，测试过的4,554个烟花样品里面，有111个样品（2.4%）有备注，底座要么丢失，要么燃放过程中没有正常工作。

对于不能满足新要求的烟花装置，消委会专家坚信需要更改它们的设计，以使烟花装置和底座成为一体，或者用粘合剂把底座沾牢在烟花装置上。

Regulatory Flexibility Act 行政立法弹性法案

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 2005-2015 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.

禁止烟花抛射碎片

新规则禁止烟花在燃放时抛射碎片。这个禁令也出现在APA 87-1和AFSL的标准里。测试过程中消委会人员观察了炸开的烟花掉落的碎片。2005到2015年间的事事故数据显示，有8起事故可能和烟花碎片有关。消委会认为，从烟花上抛出的碎片典型地和生产商有意使用金属、玻璃或者易碎的塑料有关。这些部件不是和烟花装置效果有关的部分，但是可能在烟花功能上起到一定作用。为了符合新规则，烟花生产商可能不得不重新设计他们的产品，不用这些部件，或者采用质量控制措施，保证烟花装置燃放时不会抛射这些碎片。

Regulatory Flexibility Act 行政立法弹性法案

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.

The provisions of this proposed rule aim to eliminate conflict between DOT regulations and CPSC regulations for fireworks.

其它相关联邦法规

DOT参考引用了**APA 87-1**的标准到它的法规里面，出于商业目的运输时，烟花适用这些法规。某种意义上，所有销售给消费者的烟花，是出于商业目的运输的，所有的消费类烟花需接受**DOT**管辖，适用**APA 87-1**的标准要求。然而，**DOT**的执法程序受限于他们只对出于商业目的的危险材料运输过程有管辖权，其法规条款只针对运输过程的安全性。本条款的目的，是希望能够消除**DOT**法规和消委会烟花法规之间的冲突。

Regulatory Flexibility Act 行政立法弹性法案

Alternatives 替代方案

The CPSC considered alternatives to the proposed requirements. They were-

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 130mg of pyrotechnic content, the CPSC could take no action, as compliance with the current regulation is high. However, the CPSC believes that the proposed provision provides additional clarity and consistency and more-regularly identifies the more-explosive devices. An additional alternative is to eliminate the 130 mg 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.

消委会考虑的对提议要求的替代方案。他们分别是：

1. 如果烟花装置含有超过130毫克药量的烟火材料，禁止其含有粒径小于100目的金属粉末的替代方案。

消委会可能不会采取行动，因为现行法规的合格率已经很高。不过，消委会认为推荐的条款更清晰和一致，更正式地描述了爆炸力度更强的烟花装置。一个附加的替代方案是，取消有更强开爆力度的烟花产品里130毫克药量的限定。但是，没有这个限定，烟花装置可能含有较大的开爆力度，给消费者安全带来影响。

Regulatory Flexibility Act 行政立法弹性法案

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

The CPSC 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.

2. 限制烟花装置里面总的烟火材料药量和化学组分的替代方案

消委会考虑不限制一些烟花装置里面总的烟火材料药量和化学组分。然而，对于那些已经达到了**APA 87-1**标准限制要求的企业，新的规则只会带来很小的负担。其次，新规则的目的，是要限制烟花装置的开爆力度，以减小对使用者的潜在伤害。消委会认为，让它的要求和自愿性标准相一致，有一定的好处。

Regulatory Flexibility Act 行政立法弹性法案

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

The CPSC considered taking no action to add HCB and lead tetroxide and other lead compounds to the list of prohibited chemicals. 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 CPSC 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 CPSC proposes in this NOTICE, 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.

3. 禁止烟花装置里含有HCB、四氧化铅和其它铅化合物的替代方案

消委会考虑不把HCB、四氧化铅和其它铅化合物添加到禁用化学物质清单。然而，这个替代方案实质上不会减少满足新提议的要求所带来的负担，因为很多企业早就已经把这些化学物质排除在烟花装置以外。

消委会也考虑只限制HCB或者四氧化铅和其它铅化合物，或者允许不同的微量污染水平。在考量允许污染的水平时，新提议的要求所导致的成本是很低的，和其它自愿性标准一样，它取决于这些化学物质高危害的本性。

Regulatory Flexibility Act 行政立法弹性法案

4. Alternatives To Requiring Testing for Side Ignition of Fuses 引线旁燃测试要求的替代方案

The CPSC considered taking no action. 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.

消委会考虑不采取行动。然而，这个替代方案实质上不会显著减少企业满足新要求的负担，因为消委会早就在用这个测试检测合格性。

5. Alternatives to Requiring Bases To Remain Attached During Storage, Handling, and Operation 要求存储、操作和使用过程中底座保持在烟花装置上的替代方案

The CPSC considered taking no action concerning base attachment. However, the CPSC believes that the potential benefit of the proposed requirement outweighs the potential costs.

消委会考虑不对底座采取行动。然而，消委会认为满足提议的要求潜在的好处要大于潜在的成本。

6. Alternatives to Banning Fireworks That Disperse Fragments 禁止烟花在燃放过程中抛射碎片的替代方案

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

消委会考虑不采取行动禁止在燃放过程中抛射碎片的烟花。然而，考虑到严重伤害的可能性，消委会认为，必须采取措施，以有效保护消费者安全。

Regulatory Flexibility Act 行政立法弹性法案

Effective Date

To support the CPSC's goals to update the fireworks regulations to reflect the current market and technology, provide clarity and consistency, and promote consumer safety, the CPSC proposes that the updated fireworks regulations take effect 30 days after a final rule is published in the **Federal Register**. The CPSC believes that this effective date is reasonable because many of the proposed requirements align with existing standards.

The CPSC requests comments on the proposed effective date.

生效日期

为支持消委会更新烟花法规以反映当今的烟花市场和技术、使烟花标准透明、协调、提高消费者安全性的目标，消委会提议，更新的烟花法规在最终的规则发布在**Federal Register**的30天后生效。消委会认为这个生效日期比较合理，因为很多提议的要求和现行标准是一致的。

消委会对提议的生效日期征求意见。

Requests For Comments 意见征求

The CPSC requests comments on all aspects of this proposed rule, specifically regarding: The method of identifying devices that are subject to the 130 mg limit, including:

The need and usefulness of including a method of identifying in the regulations which devices are subject to the 130mg limit;

The usefulness, effectiveness, costs, and benefits of the proposed method of identifying these devices;

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

消委会针对这些推荐的规则的各个方面征求意见，特别是对：判定烟花装置是否适用**130毫克**药量限定的方法，它包括：

是否需要在规则里面写入判定烟花装置是否适用**130毫克**药量限定的方法和其益处；

判定这些烟花装置（是否适用**130毫克**药量限定）的益处、有效性、成本和好处；

符合**APA 87-1**标准相关要求的合格率；

是否有只含黑火药的烟花装置，需要把烟火组分药量限定在**130毫克**

Requests For Comments 意见征求

Whether the CPSC should limit larger particle sizes of metallic powder in break charges or reports and the appropriate method and limit;

消委会是否需要限定开爆药或开炸药里面更大金属粉末的粒径，合适的方法和限定条件；

The implications of the CPSC 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

消委会有时行使它的自由裁量权，做出允许开爆药含有小于1.00%金属物质沾染的选择的意图，包括：

做出这些允许的安全意图；

相对于完全符合法规的禁止，做出这些允许对测试和分析成本和负担的影响；

能保证消费者安全的合理的允许水平，和支持（这个允许水平）的数据，以及

在法规里面引入这些允许的意图。

Requests For Comments 意见征求

The proposed limits to chemical composition and pyrotechnic weight of fireworks devices;
对烟花装置化学组分和烟火组分的药量提议的限值；

The level of compliance with the requirements in APA Standard 87–1 with which the proposed requirements align;
和推荐的要求相一致的APA 87-1标准要求的合格率；

Whether the specific limits proposed are appropriate in light of consumer safety and fireworks devices currently on the market; and
考虑到消费者安全性和当今市场上的烟花装置，提议的限值是否适当；

The safety hazards that the ground devices that would be subject to the proposed requirement pose to consumers and any relevant incident data;
适用于推荐要求的地面烟花带给消费者的安全风险和相关事故的数据；

Prohibiting HCB and lead tetroxide and other lead compounds from fireworks devices;
禁止烟花装置含有HCB、四氧化铅和其它铅化合物；

The level of compliance with the limits for these chemicals in the AFSL Standard and APA Standard 87–1;
满足AFSL和APA87-1标准对化学物质限定要求的合格水平；

Requests For Comments 意见征求

The presence of HCB in fireworks devices in the U.S. market and the corresponding frequency and levels;
美国市场上的烟花装置里面是否含有HCB，它出现的频次和水平；

The presence of lead tetroxide or other lead compounds in fireworks devices in the U.S. market; and the exposure data regarding the impact of these chemicals in fireworks devices;
美国市场上的烟花装置里面是否含有四氧化铅或其它铅化合物；这些化学物质对烟花装置有影响的公开证据；

The resistance to side ignition, including information and data about incidents involving side ignition;
旁燃阻力，包括涉及旁燃的事故的信息和数据；

Whether a test method for evaluating side ignition would improve consumer safety;
是否一种评估引线旁燃的测试方法会提高消费者安全性；

Whether base detachment is involved in devices tipping over, incidents, injuries, or deaths;
烟花装置翻倒、事故、伤害或者死亡是否与底座脱落有关；

The proposed ban of fireworks devices that project fragments when functioning, including data regarding the types and frequency of incidents and injuries associated
提议的禁止烟花装置在燃放时抛射碎片，需要提供相关事故和伤害类型和频次的数据；

Requests For Comments 意见征求

The types of materials fireworks devices project as fragments that present a safety risk to the public (e.g., metal, hard plastic, glass, wood);

对公众安全有安全风险的、烟花装置抛射的碎片的材料类型（比如，金属、硬塑料，玻璃，木头）；

Whether the CPSC should specify a size or amount limit for projected fragments and, if so, the appropriate size or amount and rationale;

消委会是否需要限制抛射碎片的尺寸或数量。如果需要，合适的尺寸或者数量和比例；

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 CPSC should provide trace allowances for;

What level of trace contamination should be permitted in light of inadvertent contamination;

受限化学物质的允许微量污染的水平，包括：

允许受限化学物质的微量存在，是否能有效地保护消费者，不受这些化学物质的影响；

消委会允许哪些化学物质的微量存在；

考虑到无意识的污染，应该允许什么样的污染水平；

Requests For Comments 意见征求

The relative costs of complying with an absolute ban of prohibited chemicals and trace contamination allowances;
完全满足受限化学物质禁令和允许微量沾染的相关成本；

The alternatives of adopting trace contamination allowances in the regulations
法规中引入允许微量沾染的替代方案；

The exposure data regarding the impact of trace contamination on consumer safety;
微量沾染对消费者安全是否有影响的公开数据；

The usefulness and content of the proposed definitions for: Burst charge; Chemical composition; Explosive composition; Lift charge; Pyrotechnic composition; Firecrackers; Bases; Burnout and Blowout;
对开爆药、化学组分、爆炸组分、发射药、烟火组分、爆竹、底座、烧筒和炸筒做定义的好处和内容；

The proposed definition of aerial bombs; and the estimated costs to small businesses for each of the proposed requirements.

空中炸弹的推荐定义；对于每条推荐的要求，小企业的预计的成本。

Proposed CPSC Definitions 推荐的定义

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

空中炸弹: 一种管状烟花装置，发射开炸药到空中，没有其它视觉效果。

Burst charge, also known as *expelling charge* or *break charge*, is as defined in APA Standard 87-1.

开爆药: 也被称作“*expelling charge*”或“*break charge*”，APA 87-1标准里有定义。

Chemical composition, includes lift charge, burst charge, and visible/ audible effect materials and is as defined in APA Standard 87-1

化学组分: 包括发射药、开爆药和视觉/声响效果材料，APA 87-1准里有定义

Explosive composition, is as defined in APA Standard 87-1.

爆炸组分: APA 87-1标准里有定义

Firecracker, is as defined in APA Standard 87-1

爆竹: APA 87-1标准里有定义

Lift charge, is as defined in APA Standard 87-1 .

发射药: APA 87-1标准里有定义

Pyrotechnic composition, is as defined in APA Standard 87-1.

烟火组分: APA 87-1标准里有定义

Banned Hazardous Substances 禁止的危险化学物质

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 130 mg of pyrotechnic composition;

Firecrackers, if the explosive composition is produced by more than 50 mg 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, and including kits and components intended to produce such fireworks.

开爆药含有粒径小于100目金属粉末的烟花装置（包括但不限于樱桃炮、M-80礼炮、银炮以及用来制造这些烟花的装置和部件），如果开爆药含有药量大于130毫克的烟火组分。

爆炸组分由超过50毫克的烟火组分产生的爆竹（不包括作为火箭部件的爆竹），空中炸弹，可能与糖果或其它食品混淆的烟花装置，以及用来制造这些烟花的装置和部件。

Banned Hazardous Substances 禁止的危险化学物质

Sky Rockets, Bottle Rockets, Missile-Type Rockets, Helicopters (Aerial Spinners), and Roman Candles. If containing more than 20 grams of chemical composition.

火箭，小火箭，无杆火箭，直升机（升空旋转）和罗马烛光，如果含有超过20克的化学组分。

Mine and Shell Devices. Devices shall conform to APA Standard 87-1, December 2001 version, except that:

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

地面礼花。烟花装置应该符合2001版APA 87-1标准，除了：发射药只是黑火药（硝酸钾、硫磺和木炭）或者类似的不含金属燃剂的烟火组分。

Aerial Shells with Reloadable Tubes. Devices shall conform to APA Standard 87-1 December, 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.

可重复装填的小炮弹，应该符合被参考引用的2001版APA 87-1标准，除了发射药只是黑火药（硝酸钾、硫磺和木炭）或者类似的不含金属燃剂的烟火组分。

Cylindrical Fountains, Cones Fountains, Illuminating Torches, Wheels and Chasers must all conform to APA Standard 87-1, December 2001 version

柱形花筒，锥形花筒，发光火炬，转轮和地老鼠必须符合2001版APA 87-1标准。

Proposed Revised Prohibited Chemical List 受限化学物质清单

Fireworks devices, other than firecrackers, shall not contain any of the following chemicals 除鞭炮外，烟花装置不能含任何以下化学成分

(1) Arsenic sulfide, arsenates, or arsenites, except in trace amounts less than 0.25% by weight. 硫化砷、砷酸盐或亚砷酸盐，除非按重量比例小于0.25%

(2) Boron, except in trace amounts less than 0.25% by weight. 硼，除非按重量比例小于0.25%

(3) Chlorates, except in trace amounts less than 0.25% by weight. In colored smoke mixtures in which an equal or greater amount of sodium bicarbonate is included or in party poppers. 氯酸盐，除非按重量比例小于0.25%。在彩色烟类产品中碳酸氢钠在重量上等于或小于氯酸盐类的重量。或在快乐烟花中。

In 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. 在一些较小的产品中(如地面旋转类)，其全部烟火药量不超4克，而其中氯酸钾、钠或钡的含量不超过15%（或600毫克）。

(4) Gallates or gallic acid, except in trace amounts less than 0.25% by weight. 镓或镓酸，除非按重量比例小于0.25%。

(5) Hexachlorobenzene, except in trace amounts less than 0.01% by weight. 六氯代苯，除非按重量比例小于0.01%。

Proposed Revised Prohibited Chemical List 受限化学物质清单

(6) Lead tetroxide and other lead compounds, except in trace amounts less than 0.25% by weight. 四氧化铅及其它铅化合物，除非按重量比例小于0.25%。

(7) Magnesium, except in trace amounts less than 0.25% by weight (magnesium/aluminum alloys, called magnalium, are permitted). 金属镁，除非按重量比例小于0.25%。（镁铝合金允许存在）

(8) Mercury salts, except in trace amounts less than 0.25% by weight. 汞盐，除非按重量比例小于0.25%。

(9) Phosphorus (red or white), except in trace amounts less than 0.25% by weight. Except that red phosphorus is permissible in party poppers. 磷（红磷或白磷），除非按重量比例小于0.25%。除了红磷在快乐烟花中允许使用。

(10) Picrates or picric acid, except in trace amounts less than 0.25% by weight. 苦味酸或苦味酸盐，除非按重量比例小于0.25%。

(11) Thiocyanates, except in trace amounts less than 0.25% by weight. 硫氢酸盐，除非按重量比例小于0.25%。

(12) Titanium, except in particle size greater than 100-mesh or in trace amounts less than 0.25% by weight. 金属钛，除非颗粒大于100目或按重量比例小于0.25%。

(13) Zirconium, except in trace amounts less than 0.25% by weight. 金属锆，除非按重量比例小于0.25%。

Proposed Amendment Regarding Bases 关于底座的建议修订

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: (a) 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 (b) Place the glowing tip of a lit standard 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. (c) The fuse must not ignite within 3 seconds.

(3) The following devices are exempted from (1) (2) (3) Devices such as ground spinners that require a restricted orifice for proper thrust and contain less than 6 grams of pyrotechnic composition and devices with fuses that protrude less than 1/2 inch from the device, because the end of the fuse may ignite during testing.

Proposed Amendment Regarding Bases 关于底座的建议修订

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

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.

直立操作的烟花装置的底座应该:

- (1) 水平方向最小的尺寸，或者底座直径至少等于烟花装置高度的1/3（包括所有的底座和盖子）；
- (2) 运输、操作和燃放过程中底座保持依附在烟花装置上。

这一章节的目的，底座是指处于最底部的部件，或者联接到一个烟花装置的一个或多个筒子上的基座，为烟花装置燃放提供一个平稳的平面。

Proposed Amendment-Blowout/Burnout/Fragment

提议的修订 – 炸筒、烧筒、碎片

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

As used in this proposal, the terms blowout and burnout are as defined in APA Standard 87-1

Regarding Fragments, Fireworks devices must function in accordance with section 3.7.2 of APA Standard 87-1

烟花装置里含火药部分的腔室应设计成正常情况下烟花装置能正常燃放，不烧筒，不炸筒。

在本提议中，术语“炸筒”和“烧筒”在APA 87-1里面有定义。

关于碎片，烟花装置必须依照APA 87-1第3.7.2章节燃放。

Conclusion 结论

The NFA Board of Directors applauds the CPSC for addressing many issues that will help the Fireworks industry, and we will be stating this in our comments.

NFA理事会非常高兴消委会提出了很多看法，这将有助于烟花行业，我们将在我们的意见里声明这一点。

However, the NFA will not endorse replacing the current unreliable and unreproducible “ear test” with another flawed test. The “XRF/ ICP-OES” scan only tests for the appearance of a metal and not for the form. The NFA Board feels that we cannot accept a test that will add the metallic composition in clay, star chips, adhesives and coatings to the break charge and fail 84% of the imported products that now pass the “ear test”.

然而，NFA不会赞同用另一种有缺陷的测试来代替现行的、不可靠、不可复现的“耳朵测试”。XRF/ ICP-OES扫描只检测金属的存在，但是不管是以什么形式。NFA理事会觉得，我们不能接受一种会把泥土、碎屑、粘结剂和涂料里的金属组分带入到开爆药的测试，这会导致84%的目前通过了“耳朵测试”的进口产品不合格。

The NFA Board of Directors will be recommending that the CPSC adopt a sound level meter test with standard test procedures to produce an easily reproducible test for Explosivity that the manufacturer, importer and inspector can all easily use to obtain the same results.

NFA理事会建议，消委会采用一种带有标准测试程序的声级计测试方法，以对爆炸性质作出简单、可复现的检测，生产商、进口商和检验员都能简单地使用，以得到同样的结果。

Conclusion 结论

As valued members of the National Fireworks Association, the NFA Board of Directors wanted to make you aware of these proposed changes to the U.S. Fireworks Regulations.

作为NFA重要的会员，NFA理事会想提醒你们注意这些对美国烟花法规的提议修改。

We encourage you to comment on these proposals to CPSC and also to The NFA Board of Directors.

我们鼓励你们就这些提议向消委会以及NFA理事会提出意见。

After consultation with you, our members, the NFA Board of Directors will deliver our comments on these proposed changes to CPSC by April 18, 2017

和你们协商以后，NFA理事会把我们对提议修改的意见在2017年4月18日前提交给消委会。