PETITION BEFORE THE
U.S. CONSUMER PRODUCT SAFETY COMMISSION

REQUEST FOR STATEMENT OF POLICY ON ENFORCEMENT DISCRETION

Office of the Secretariat
U.S. Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814

PETITION

Petitioners:

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And

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Product: Fuel Adjacent Products such as Fuel Additives

Reference: 88 FR 22206

Interest of the Petitioners

The Prefilled Fuel Container Industries Association (PFCIA) was formed to provide collective advocacy and collaboration across the industry for the implementation of flame mitigation devices in fuel and other affected containers. Ms. Atkinson has prepared this petition on behalf of the members manufacturing fuel adjacent products such as fuel additives. It is based on technical insight of over a decade of engagement in portable fuel container matters.

The Household & Commercial Products Association (HCPA) is the premier trade association representing companies that manufacture and sell $180 billion annually of products used for cleaning, protecting, maintaining, and disinfecting homes and commercial environments. Mr. Georges has prepared this

petition on behalf of members whose business includes the manufacturing and marketing of fuel adjacent products, such as fuel additives.

The Petitioners hereby petition the Consumer Product Safety Commission ("CPSC") to adopt a policy that correctly defines the range of products affected by the Portable Fuel Container Safety Act 2020 (PFCSA) to that intended by legislators and in particular to exclude Fuel Adjacent Products such as Fuel Additives from the scope of enforcement actions.

I. INTRODUCTION

The Portable Fuel Container Safety Act 2020 enacts "*PERFORMANCE STANDARDS TO PROTECT AGAINST PORTABLE FUEL CONTAINER EXPLOSIONS NEAR OPEN FLAMES OR OTHER IGNITION SOURCES*."[1] The device that provides this protection is known as a "flame mitigation device" (FMD). The principal hazards that FMDs protect against are flame jetting and container rupturing. Flame jetting occurs when an external ignition source causes a sudden ignition within a liquid container that directionally propels burning vapor and liquid from the mouth of the container. Container rupturing is similar to flame jetting, except the burning vapor and liquid exit through a rupture in the container. Flame jetting typically injures people away from the person holding the container, while container rupturing typically injures the person holding the container. Burning liquid from flame jetting generally travels further from the mouth of the container than when the container ruptures.

The term "flame mitigation device" is defined in ASTM F3429, *Standard Specification for Flame Mitigation Devices Installed in Disposable and Pre-Filled Flammable Liquid Containers,* as "a device or feature attached to, installed in, or otherwise integral to, a container that is expected to inhibit the propagation of an external flame into the container,". A common type of flame mitigation device used with portable fuel containers is a flame arrestor (also known as flame arrester or flash arresting screen). A flame arrestor is a screen that quenches and cools a flame so that it cannot pass through the flame arrestor and cause flammable vapor within the container to ignite. Other examples of flame mitigation devices include expanded metal mesh, bladders, and pumps.

II. CONSUMER ADVOCACY OBJECTIVES

The advocacy initiative that led to the enactment of the *Portable Fuel Container Safety Act (2020)* originated around 2010 in the identification of the hazard that was present when a new decorative outdoor lighting product, powered by an ethanol-based gel fuel packaged in plastic bottles, was refilled when the flame was not fully extinguished. In some cases the flammable vapor of the highly volatile ethanol inside the plastic bottle would ignite and expel a pressurized jet of flame. These 'flame jetting' incidents caused serious injuries and several deaths.

In this newly emerging family of consumer hospitality devices, which grew to include fireplaces, lanterns and food warming devices, the practice of adding fuel directly to the chamber that supported the flame was based on the assumption that the user would ensure that there was no flame present when the

[1] Sec. 901 of HR 133, Consolidated Appropriations Act,2021

device was refueled. This is described in an interview[2] with the principal advocate for this legislation following her daughter's accident with ethanol (biofuel) in June 2014, "*Think about this," Lewis emphasized, nearly three years after the horrible night. "When you pour this type of fuel, you're refueling your ventless fireplace. It's a reasonable, foreseeable action to take with a ventless fireplace. It was not misuse of any kind that night or any other times by our family. The fire that resulted and burned my daughter is a known problem with consumer fuel containers, but I only learned this later."*

In 2019 measures were implemented, through the voluntary standard ASTM F3363, *Standard Specification for Unvented Liquid/Gel Fuel-Burning Portable Devices,* to require that these devices are designed such that fuel is not poured into the device at or near the part of the device that supports the flame.

Concurrent with the ethanol caused incidents of flame jetting, suspected incidents with refillable portable fuel containers ("gas cans") were identified. This did not occur when the containers were used as intended to transport and store fuel for refueling lawn, garden and emergency equipment (such as generators). The hazard was primarily created by *consumer misuse* of these products to start or accelerate a fire. Explicit warnings on these containers, and a decade of safety education efforts by industry and consumer safety advocates, were not sufficient to prevent a handful of flame jetting incidents each year. The consumer behavior creating the hazard, which involves primarily refillable portable fuel containers (PFCs), appears to be somewhat 'traditional' and is supported by intergenerational conditioning. FMDs were incorporated in refillable portable fuel containers under the then voluntary standard ASTM F3326 *Standard Specification for Flame Mitigation Devices on Portable Fuel Containers* from early in 2017.

It is noteworthy that the PFCSA advocacy effort derided the industry for not having adopted their envisaged solution, the so-called "5 cent fix" much earlier. Unfortunately that solution was neither practical nor effective in the real world. A significant research effort and increase in packaging costs has resulted for the most common solutions, as shown below in Figure 1.

Figure 1: Examples of Flame Mitigation Devices

		
"5 cent fix"	Gas can flame arrester example	Single use container flame arrester example

[2] http://www.lifezette.com/momzette/a-burn-mom-fights-for-daughter-recovery/

III. **LEGISLATIVE HISTORY VERSUS CURRENT INTERPRETATION**

An initial bill was introduced July 14, 2016, in the 114th congressional session by Representative Thompson (CA-5) as a result of the advocacy efforts of his constituent (Lewis, above). It was referred to the House Committee on Energy and Commerce but did not leave committee. It was introduced again in the 115th session (February 7, 2017) as HR919 and the House Committee on Energy and Commerce passed it to the Subcommittee on Digital Commerce and Consumer Protection. It gained 48 bipartisan cosponsors over the course of 2017 and early 2018.

The bill was introduced again in the 116th congressional session on January 28, 2019, as HR 806 and acquired 52 cosponsors, although with less bipartisan than in the previous congress, during its lifecycle. Among others, The American Burn Association joined the advocacy. There was much misinformation provided to congress including the incident data presented in their briefing in January 2019 (*see* Attachment 1). For example: "*Fortunately, installing a simple device called a flame arrestor can prevent the estimated 18,500 annual gas can injuries (incident source: CPSC's National Electronic Injury Surveillance System Database).*" This is not an accurate reference and actual incident data, to the extent that it is available, suggests that 3 to 5 incidents per year may have occurred. This misrepresentation was so egregious that the Portable Fuel Container Manufacturers Association (PFCMA) lodged a complaint with the office of Congressman Thompson.

The House Energy and Commerce Subcommittee on Consumer Protection and Commerce included this bill in a broad consumer protection legislative hearing on June 13, 2019, and the bill was passed on September 17, 2019, based on the committee report issued a few days before[3]. The Senate referred it to the Committee on Commerce, Science, and Transportation on September 18, 2019.

In the meantime, the Senate Companion bill S1640 had been introduced May 23, 2019, by Sen. Klobuchar, Amy [D-MN] and reported out of the Senate Committee November 13, 2019.[4] It was enacted as Section 901 of HR133, "Consolidated Appropriations Act, 2021''.

The legislative intent and the expected benefit are captured in the respective Committee reports:

Senate Report 116-235 re S1640

BACKGROUND AND NEEDS

> Portable fuel containers are receptacles specifically designed to hold small amounts of gasoline.[1] Portable fuel containers can range in size and hold up to 10 gallons of gasoline or more.[2] The U.S. Environmental Protection Agency (EPA) estimates that there are approximately 80 million portable fuel containers in use in the United States.[3] These containers are **commonly used by U.S. consumers to store fuel for lawnmowers, snow blowers, and other small-engine equipment**.[4]
>
> Portable fuel containers can pose serious safety risks to consumers if not properly handled. Under certain conditions, gasoline vapors escaping the portable fuel container can ignite with unpredictable force if the vapors come into contact with a spark or flame.[5] An explosion can occur when ignited gasoline vapors travel back into the container through the spout, which can cause serious harm to individuals and damage surrounding property.[6] According to the National Association of State Fire Marshalls, flammable or combustible liquids cause over 160,000 fires and almost 4,000

[3] H. Rept. 116-207

[4] S. Rept. 116-235

injuries per year, and cost an estimated $1.5 billion in direct property damage annually.[7]

ECONOMIC IMPACT

S. 1640 would not have an adverse economic impact on the Nation. Preventing injuries caused by fires due to portable fuel containers without flame arrestors will reduce the estimated $1.5 billion in flammable liquid injuries that occur each year.

It is noteworthy that the reported 160,000 fires and $1.5 billion in direct property damage include **all** fire causes including cooking fires (the preponderance), vehicle fires and even intentional fires (arson). Flame jetting incidents are a minor contributor to this data.

The following from *House Report* 116-207 re HR 806 provides more realistic data with respect to this issue.

House Report 116-207 re HR 806

BACKGROUND AND NEED FOR LEGISLATION

Portable fuel containers can explode when fuel vapor mixtures inside the container ignite with explosive force.[1] This kind of explosion can occur inside a portable fuel container when the gas vapor escaping the container contacts a source of ignition, such as a flame or a spark.[2] If the flame from the ignited vapor propagates back into the container through the spout and the gas and air vapor mixture inside the can is at a certain flammable concentration, that mixture inside can also ignite and cause an explosion.[3] An investigation conducted by NBC News in 2013 found that a very low volume of gasoline inside the fuel container, low temperatures, "aged" gasoline that has been in storage, and holding the container at an angle increase the likelihood of an explosion.

According to the National Fire Protection Association, municipal fire departments in the United States respond to an average of 160,910 fires per year involving the ignition of a flammable or combustible liquid.[4] These fires cause approximately 454 civilian deaths, nearly 3,910 civilian injuries, and an estimated $1.5 billion in direct property damage annually.[5] **The CPSC has counted at least 11 deaths and 1,200 emergency room visits specifically involving gas can explosions during the pouring of gasoline between 1998 and 2013.[6]**

Flame mitigation devices allow fuel to pass through but prevent flames from entering the container, preventing flashback explosions. Flame mitigation devices designed for portable fuel containers are usually small pieces of mesh or disks with holes de- signed to prevent flame from passing through by absorbing and dispersing heat.[7] Flame arrestors are commonly required by various commercial and industrial equipment subject to regulations by the Occupational Safety and Health Administration.[8] In 2013, the CPSC called on the portable fuel container industry to add flame arresters to its products. In February 2019, a new voluntary consensus standard on portable fuel containers was adopted that re- quires the addition of a flame mitigation device, ASTM F3326–19a.[9]

H.R. 806 is needed to make sure there is a mandatory standard for portable fuel containers that requires effective flame mitigation devices.

It is not clear how an advocacy initiative centered on injuries caused by pouring ethanol into the burner of a portable fireplace in a manner intended by the manufacturer led to legislation directed towards preventing injuries caused by consumer misuse of gas cans to start or accelerate fires. We believe this is

because scientific research on gas can incidents had begun earlier than the emergence of the new consumer hospitality products that were the focus of the advocacy. Although other sources were available, both of the Congressional Committee reports reference only a media source for their technical input.

In the normal course of legislative action many parties contribute to the actual text including advocacy groups and the CPSC. The result has been that the scope of this legislation, which is established in the definition of "Portable Fuel Container" in the Act, is much broader than what is addressed in the statements of legislative intent.

IV. **Portable Fuel Container Safety Act Scope**

The PFCSA law does not specify the products that "require flame mitigation devices" explicitly but states that it applies "in portable fuel containers." The law[5] states that the meaning of "portable fuel container" for the purpose of the Act is:

> *"any container or vessel (including any spout, cap, and other closure mechanism or component of such container or vessel or any retrofit or aftermarket spout or component intended or reasonably anticipated to be for use with such container):*
>
> *A. Intended for flammable liquid fuels with a flash point less than 140 degrees Fahrenheit, including gasoline, kerosene, diesel, ethanol, methanol, denatured alcohol, or biofuels;*
> *B. That is a consumer product with a capacity of 5 gallons or less; and*
> *C. That the manufacturer knows or reasonably should know is used by consumers for transporting, storing, and dispensing flammable liquid fuels."*

This is substantially broader than what is described in the Congressional Committee reports as the 'legislative intent," particularly in the additional fuel types and solvents included in paragraph A. It is recognized however that the inclusion of ethanol and biofuels in the definition of 'portable fuel container' is significant to achieving the advocacy objective related to the emerging market of consumer hospitality devices powered by ethanol.

Analysis of this definition of 'portable fuel container' shows that it will include containers sold pre-filled with fuel in addition to the containers sold empty (gas cans) which were the stated legislative intent.

Containers sold pre-filled are likely to be discarded by the consumer once the contents (the flammable liquid fuel) are completely used; whereas, containers sold empty are specifically designed to be reused many times. Pre-filled containers and empty containers are used differently and have different product lifespans. The differences also mean that the flame mitigation devices will be subjected to different conditions that can affect performance over time, and therefore requirements differ for pre-filled and empty containers. For example, prefilled containers, such as those used for charcoal lighter fluid, can be squeezed easily, and therefore, are likely to create a larger vacuum force pulling external flames into the container.

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[5] 15 U.S.C. 2056d(b)(8))

Containers sold empty, such as gas cans, are designed to receive fuel from a gasoline service station pump for transfer later into a fuel-powered product, such as a lawnmower. They are intended to be used in this manner many times and to hold flammable liquids for long periods of time, over large temperature variations. The voluntary standard ASTM F3326 "*Standard Specification for Flame Mitigation Devices on Portable Fuel Containers*" had already been developed and was in use at the time the law was passed. However, this standard is only technically relevant to the category of 'Empty Containers' due to the distinguishing features noted above. An accelerated development of a voluntary standard relevant to containers sold pre-filled with fuel was undertaken by the CPSC and resulted in ASTM F3429 "*Standard Specification for Performance of Flame Mitigation Devices Installed in Disposable and Pre-Filled Flammable Liquid Containers.*" It is appropriate to note the concerns expressed by several PFCIA and HCPA members at the time:

> When [redacted] was first made aware ofthe American Society for Testing and Materials (ASTM) F3429 Standard, it had already been developed and published. [redacted] joined the F3429 Task Group in July 2021, which is when we found out that the F3429 Standard was planned to be adopted by the Consumer Product Safety Commissions (CPSC), and made into rule, to address the mandated Portable Fuel Container Safety Act of2020. During the July 15, 2021 Task Group meeting, noticing that there was almost no industry representation, [redacted] inquired about the lack of affected industry involvement, to which the response provided was "We tried to get industry involved, but we did not know who to reach out to." This meant that a Standard, which was planned to be made into rule, was developed and finalized with little to no affected industry input.

This resulted in several revisions to ASTM F3429. Both of these standards were evaluated by the CPSC and the applicable staff report[6] was published in the Federal Register in May 2022[7] to solicit public comment. It recommended to the Commission that these voluntary standards qualified for the exception from the rulemaking requirement in the PFCSA and were suitable for adoption as the applicable regulation.

In January 2023 the Commission completed the process of adopting these standards into a regulation establishing them as a consumer product safety rule as required by the law.[8] The rulemaking addressed several comments had been received following the staff report publication in May 2022. They noted that the comments generally supported staff's recommendations and did not suggest any other voluntary standards the Commission should consider but that there had been enquiries about the range of products to which the PFCSA would apply. A clarification of 'liquid fuels,' to ensure that flammable liquids used as solvents, cleaners and painting supplies were not considered fuels, was sought and particular concerns regarding fuel adjacent products such as fuel additives were raised.

The CPSC response did not clarify the scope of 'liquid fuels' as requested and further stated the intention to include fuel additives in the scope of the PFCSA. No justification, for example by identifying flame jetting incident data related to containers containing fuel additives, was provided. The CPSC

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[6] https://www.cpsc.gov/s3fs-public/2022-Fire-Safety-of-Portable-Fuel-Containers-Memo.pdf

[7] 87 FR 31540

[8] *Determinations Regarding Portable Fuel Container Voluntary Standards Under the Portable Fuel Container Safety Act*, 88 FR 2206).

instead declared that the determination of the applicability of the PFCSA will be made on a case-by-case basis.[9]

> *The PFCSA defines "portable fuel containers" as products "intended for flammable liquid fuels with a flash point less than 140 degrees Fahrenheit, including gasoline, kerosene, diesel, ethanol, methanol, denatured alcohol, or biofuels." 15 U.S.C. 2056d(b)(8)(A). Fuels generally are considered substances that can be burned to release energy, and liquids with a flash point below 140 degrees Fahrenheit are, by the definition of flash point, capable of being burned at that temperature. Staff assessed all known flammable liquid fuels with a flash point less than 140 degrees as part of the evaluation of the voluntary standards under the PFCSA. Accordingly,* ***while classification of a particular container for purposes of the PFCSA is case-specific, as a general matter, when a liquid with a flash point less than 140 degrees Fahrenheit is intended to be used as, or in, a fuel mixture to support combustion, it is a fuel under the definition of "portable fuel containers" as indicated in the PFCSA****.*[10]

This approach to a regulation causes significant uncertainty for stakeholders, both manufacturers and marketers of products that may be subject to a determination as well as the general public. From a practical standpoint, industry's views and knowledge of which products may be flammable liquids and "*used by consumers for transporting, storing, and dispensing flammable liquid fuels"* as stipulated in the PFCSA definition of 'portable fuel container' may differ significantly from the interpretation from CPSC.

The nuance of adding "or in" in this January 13, 2023, promulgated regulation alerted the fuel additive manufacturers of the requirement for FMDs in the containers used for their products, with a compliance date of July 12, 2023. This interpretation of the scope of the PFCSA was affirmed by the CPSC's mention of "fuel additives, and engine cleaners" in its May 19, 2023, Enforcement Discretion in which it is stated that "*This (the PFCSA) covers products including, but not limited to, gasoline, kerosene, diesel, ethanol, methanol, denatured alcohol, biofuels,* ***camp fuel, fire starters and accelerants, fuel additives, and engine cleaners.***[11]

As shown in boldface, this enforcement discretion letter further extended the scope of the PFCSA and concurrently imposed a burden of self-reporting of a failure to comply with a consumer product safety rule in relation to this expanded scope. This broad interpretation of the scope of the PFCSA, a matter for which no statutory ambiguity exists, far exceeds the level of implementation flexibility that the CPSC is empowered to exercise. The Act contains no express delegation of the authority to determine the scope of the PFCSA "on a case-by-case basis" to the CPSC. The statutory language "liquid fuels" is direct and does not include fuel adjacent products used "in" fuel. Each of those seven products in the definition of Portable Fuel Container is a refined fuel product that is intended to be burned to produce heat or

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[9] CPSC specifically responded that "*classification of a particular container for purposes of the PFCSA is case-specific."*
[10] 88 FR 2206
[11] Enforcement Discretion for Pre-Filled Portable Fuel Containers Subject to ASTM F3429/F3429M-20 Under the Portable Fuel Container Safety Act of 2020, from CPSC Office of Compliance and Field Operations, May 19, 2023

power, such as to power a vehicle or a generator or a fireplace. The EPA clearly distinguishes, in the Clean Air Act,[12] Fuel and Fuel Additives in its registration requirements and related definitions.

Considering the legislative intent, as reflected in the Committee reports, was to address "gas cans," the suggestion made by the CPSC that fuel additives and flammable liquids not intended as fuels should be in the scope of the PFCSA is well beyond any reasonable construction of the language in the PFCSA. The PFCSA was intended to address the flame jetting hazard related to the misuse of gasoline to start or accelerate a fire, and beyond the explicit legislative intent, does address the same hazard with the use of consumer hospitality devices burning ethanol. To include fuel additives simply by mentioning them in the response to a comment, and to suggest non fuel products may also be impacted, is not a permissible construction of the PFCSA definition of portable fuel container and it cannot be defended as a persuasive interpretation of it.

V. FUEL ADDITIVES ARE ECONOMICALLY AND SOCIALLY IMPORTANT PRODUCTS

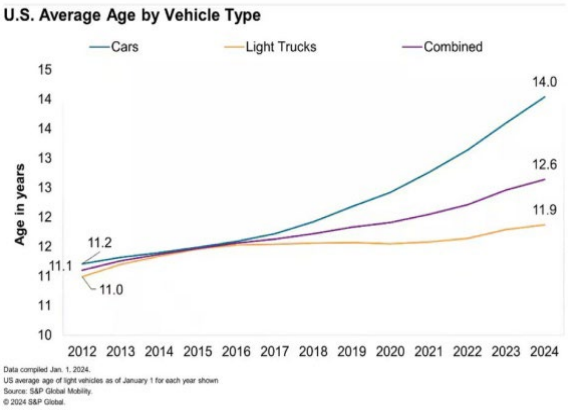
The EPA defines fuel additives as "compounds formulated to enhance the quality and efficiency of fuels." Fuel additives are intended to be poured into vehicle or small-engine gas tanks or other portable containers, such as gas cans. Fuel additives have evolved in parallel with the growth and evolution of the automotive and small power equipment industries to solve the everyday operational problems that these life enhancing, and sometimes lifesaving, machines entail. Fuel additives are recognized for their ability to clean, lubricate and protect engines and to extend the storage life of fuels. They remove fuel and oil residues that cause problems like rough idle, hard starting, oil burning, and loss of power as they work in fuel to clean fuel passageways and lubricate upper engine areas.

One of the most important roles of fuel additives is to prevent fuel and engine degradation in situations where fuel is stored for long periods in the tank of small engine powered tools or in a portable fuel container. Many consumers rely on the use of a fuel additive in the fall to allow them to reliably start, for example, their lawnmower in the spring and to ensure that their outdoor power equipment engines do not sustain damage during winter storage due to internal corrosion. But in every season in which the public can expect challenging weather, consumers, as well as emergency responders, can rely on the integrity of their equipment and stored fuel to fire up their gas-powered generator, run their chainsaws, or power the 'jaws of life' used for emergency extractions from damaged vehicles with the use of fuel additives. Small internal combustion engines, with close design tolerances and often infrequent use, have the most to gain from the properties of specially formulated fuel additives.

Fuel Additives are a critically important preventative measure tool for engines. This is especially important for consumers that have older vehicles. During the COVID-19 pandemic, the cost of vehicles increased due to the pressure of supply chain constraints. This was followed by inflation and continuing high interest rates in the consumer credit economy. Figure 2 shows a chart of how consumers are maintaining their vehicles for a longer period of time.

[12] Title 40 CFR Part 79

FIGURE 2: U.S. Average Age by Vehicle Type



Efforts by consumers to extend the life cycle of their vehicles through the regular use of fuel additives increased significantly. Some specialty fuel additives are recognized to reduce the deterioration of major engine components and ensure the longest possible life of maintenance items like fuel injectors. Hence consumers of fuel additives are highly motivated to invest in extending engine life, including in the small engines of outdoor power equipment.

The use of fuel additives also alleviates some of the pressure of increased gasoline prices by improving fuel efficiency. In addition, when high fuel prices make it difficult for consumers to regularly fill their fuel tanks the open space creates an opportunity for moisture to develop and freeze on the bottom of the fuel tank. Consumers will regularly use a specialty fuel additive to avoid the starting and operational issues this can cause. Particularly for this application there are no replacement compositions with a higher flash point that offer similar water absorbing qualities.

VI. FUEL ADDITIVE PACKAGING DOES NOT SUPPORT INCORPORATING FLAME ARRESTERS

To begin at the end of this part of the discussion – there are no businesses in the fuel additive container supply chain prepared to invest in developing fuel additive packaging with a flame arrestor, regardless of the incentives fuel additive producers might propose. It is patently obvious to all engaged entities that the industry will not be sustainable with the higher cost and poor ergonomics of fuel additive containers that incorporate flame arrestors to comply with the PFCSA.

With some exceptions fuel additives are packaged in small plastic (HDPE) bottles ranging in size from 4 to 16 ounces. See Image 1 of a typical fuel additive container.

Image 1: Example of a Typical Fuel Additive Container

This size is calibrated to the general displacement of an automotive fuel tank so that the correct ratio of fuel additive is obtained when the entire contents of the bottle are dispensed once it has been opened. Such containers are adapted for pouring into the automotive industry's "capless" filling tank openings (a theft prevention measure) and draining by gravity. The opening size is limited by the vehicle filling neck design.

The container often has an elongated neck to allow it to reach and activate the shield placed deep in the opening of the "capless" fuel tank opening. This allows the fuel additive to be dispensed in the fuel tank without the use of a separate funnel. The 'shield' does not open easily which requires the fuel additive container to have a robust neck design. This is illustrated here in "Image 2" using a mock-up of a typical 'capless' fuel tank opening. Any flame arrestor design must also take into consideration the possibility of damage or removal as the neck of the container passes through the shield in the fuel tank opening, potentially depositing debris in the fuel tank.

Image 2: Typical 'Capless" Fuel Tank Opening

Extensive studies of fuel additive packaging which includes a flame arrester have been conducted. For metal containers in larger sizes (greater than about 12 fl. oz.), feasibility has been demonstrated using solutions similar to those used for fuels. However this research determined that a flame arrester screen in the opening of the container is not a feasible solution for fuel additive containers. A screen with holes small enough to pass the certification test of ASTM F3429 seriously impedes the flow of liquid through

the screen. Pouring out the contents of a small container can take a full minute instead of 10 seconds and a larger container has been shown to take 6 minutes to empty rather than 30 seconds. Shaping the screen does not yield significant improvement. Although a vent might restore a reasonable flow, this approach has compliance issues with other regulations, such as those related to the transportation of hazardous materials, and poses many challenges (such as potential leakage) at retail.

As fuel additives are most often used outdoors, typically at a filling station or in the garage or driveway, and are particularly important in winter when the conditions are freezing cold, it is essential that they can be added to the fuel tank quickly. Fuel additive packaging has to allow the consumer continued convenience to empty these bottles in a reasonable amount of time. This was acknowledged by the CPSC in their second Enforcement Discretion letter which noted "*reduced flow rates may expose consumers to unsafe conditions in harsh weather or cause consumers to bypass the product packaging altogether, creating fire and burn hazards.*"[13]

Clearly, the fuel additive sector would have to seek a completely different packaging concept in order to comply with the PFCSA requirement for an FMD in their containers. Companies have indeed looked at alternative solutions but have not found any that are commercially available. Thus, this would require an approach that involves academic research, funded through coordination across the industry. Distributors and retailers would have to be engaged to ensure that the supply chain and customer display areas are revised to accommodate the new packaging. Manufacturers and marketers would need to assess compliance with other applicable regulations would have to be assessed and recertification obtained, and manufacturers would likely have to retool their entire manufacturing process. This doesn't include education efforts to reteach consumers how to use the new product in the event current habits are not conducive. As fuel additives are a highly discretionary consumer product, it is doubtful that this high level of effort and investment could ever be recovered through consumer price increases which may have to reach as much as 300%.

VII. Fuel Additives do not present an unreasonable risk of injury

The considerations relevant to addressing the risk of injury due to flame jetting of fuel additives are whether incidents with these products have occurred and the likelihood that they would occur. The first analysis rests on various incident reporting services while the second must lean on a common sense examination of the behaviour of a rational consumer.

A. Fuel Additives do not appear in reported incidents

The National Fire Incident Reporting System (NFIRS) is the most commonly used reporting tool in the U.S. for injuries caused by fire incidents. It was established around 1975 and about half of all fire related first response organizations contribute to it. A National Fire Prevention Association (NFPA) researcher, John R. Hall, Jr., conducted an analysis of this extensive data set and produced the report "*FIRES*

[13] Enforcement Discretion for Pre-Filled Portable Fuel Containers Subject to ASTM F3429/F3429M-20 Under the Portable Fuel Container Safety Act of 2020, from CPSC Office of Compliance and Field Operations, July 3, 2024.

STARTING WITH FLAMMABLE GAS OR FLAMMABLE OR COMBUSTIBLE LIQUID" in February 2014.[14] He begins with "*In 2007-2011, U.S. municipal fire departments responded to an estimated average of …. **160,910 fires per year** starting with ignition of a flammable or combustible liquid. The flammable or combustible liquid fires resulted in an estimated **454 civilian deaths, 3,910 civilian injuries, and $1.5 billion in direct property damage per year**."* These figures, familiar from the advocacy leading to the PFCSA, are further explained as "*Flammable or combustible liquid fires nearly all involve unclassified or unknown-type flammable or combustible liquid, Class IIIB combustible liquids, Class II combustible liquids, or gasoline. Most fires involve gas or liquid fuels for heating or cooking or involve cooking oils used as a medium to heat food during cooking."*

John Hall's analysis addresses, each in its own data sheet, structure fires (separating home and non-home) and vehicle fires for:

- Class IA flammable liquid (including pentane and ethyl ether)
- Class IB flammable liquid (including acetone, ethyl alcohol, and methyl ethyl ketone)
- Gasoline
- Class IC flammable liquid (including turpentine and butyl alcohol)
- Class II combustible liquid (including home heating fuels, kerosene, some fuel oil; also diesel and paint thinner)[15]
- Class IIIA combustible liquid (including some fuel oil, typically used in commercial and industrial heating);
- Class IIIB combustible liquid (including cooking oil, transformer oil or lubricant oil)
- Unclassified or unknown-type liquid

The highlights from Mr. Hall's analysis are:

- Class IIIB combustible liquid (cooking oil) accounts for the largest share of structure fires starting with ignition of any flammable or combustible liquid.
- Gasoline ranks first for all fires (38%), primarily because of its involvement in vehicle fires.
- Most home structure fires starting with ignition of flammable or combustible liquid involve cooking or heating equipment as the heat source.

A breakdown performed in relation to gasoline, to estimate the incidence of injuries and deaths caused by using gasoline as an accelerant (*see* Attachment 2), yielded small numbers for both the home (1 death and 19 injured) and non-home (0 deaths and 3 injured) categories, not including arson. However there was not sufficient data to distinguish the use of accelerants in the category "outdoor" where for home (1 death and 34 injuries) and for non-home (7 deaths and 61 injuries) were recorded. This would however include, where applicable, intentional (arson) fire causes.

[14] FIRES STARTING WITH FLAMMABLE GAS OR FLAMMABLE OR COMBUSTIBLE LIQUID, John R. Hall, Jr. February 2014 National Fire Protection Association Fire Analysis and Research Division NFPA No. USS104 – REV

[15] Note that Class II Combustible Liquids are, in the context of the PFCSA, considered flammable liquids as they have a flash point below 140^{o}F

It must be noted that flame jetting is involved in a very small proportion of incidents that occur when consumers misuse gasoline to start or accelerate a fire. Based on industry's experience in screening incident reports, we assert that the preponderance of incidents results from external vapor ignition. This is when the invisible vapor cloud from the gasoline poured on or near a fire suddenly ignites and causes an unexpectedly large field of flame that engulfs structures and persons. Gasoline vapor inside a container is only rarely within the fuel to air ratio range in which ignition can occur.

Mr. Hall's painstaking work demonstrates conclusively that legislators acted on the basis of inaccurate and misleading incidence data in relation to flame jetting incidents in refillable portable fuel containers. If fuel additives make any contribution at all in this data set, which is unlikely as discussed below, the residual risk for these products is vanishingly small.

A second valuable data set, the CPSC Clearing House, is a comprehensive presentation of incident reporting from a wide variety of sources including directly from consumers. The coding of products implicated in incidents is reasonably fine grained. A search done on the product category "Automotive Chemicals" (955) identified 27 incidents between 2011 and 2023. While many are consumer 'complaints' the report included 6 deaths due to poisoning and 3 burn related incidents (explosion while cleaning auto parts in solvent, dryer ignited due to hydraulic fluid on clothes, explosion during transfer of nitrous oxide in an auto shop). Fuel additives were not mentioned in any of these incident reports or the accompanying descriptions.

In contrast about 90 incidents causing serious injuries were reported over the same period in the product category "Gel Fuel" (0397 – ethanol). Fifty eight incidents were clearly caused by flame jetting, based on the descriptive information and four fatalities resulted. A further 16 incidents, related to firepots but not caused by flame jetting, were also reported. For comparison, products with non-refillable fuel canisters had no reported incidents in a search under "Fuels For Chafing Dishes or Fondue Pots" (941) and "Chafing Dishes or Fondue Pots" (462) except for one flame jetting incident caused by consumer misuse by refilling the canister of a chafing dish.

B. Fuel Additives are not misused as accelerants

The hazard addressed by the PFCSA is flame jetting resulting from the misuse of products not as intended by manufacturers or marketers. In the case of ethanol based fuel, used to refill devices such as portable fireplaces, candles and torches, this was unintentional misuse. The consumer may not have been aware that there was a flame in the location that the fuel was intended to be poured into. Device standards have since been modified to preclude the addition of fuel in the 'burner' of such devices.

Flame jetting incidents may also occur when fuel, typically gasoline, is used to light or accelerate a fire. This hazard, resulting from intentional misuse of a fuel container, is identified in the warnings on containers such as ""DANGER: FLAMMABLE" and more specifically "Keep away from heat, flames, sparks, and other ignition sources." Formal incident reporting systems lack the resolution to provide specific insight in the misuse of fuel additives as an accelerant but no incidents were seen in a decade of informal monitoring of flame jetting incidents by the author and there have been no flame jetting related lawsuits against fuel additive manufacturers.

There are several "common sense" deterrents to the use of fuel additives as accelerants

- Not all fuel additives can perform as accelerants and consumers cannot easily distinguish which ones would work.
- When fuel additives are added to a vehicle fuel tank the entire content of the product is added because it has been sized for that purpose. Thus there are rarely 'leftovers' to use as an accelerant.
- Cost conscious consumers recognize that fuel additives cost significantly more than products used by consumers as accelerants.
- There is no cultural 'history' of fuel additives being poured on open flames or fire pits to start or accelerate a fire or to support combustion.

VIII. OVERSIGHT OF COMPLIANCE FOR FUEL ADDITIVES IS NOT AN EFFECTIVE USE OF COMMISSION RESOURCES

In its fifty-year history, the CPSC has accomplished important consumer safety improvements in aspects such as child resistant packaging, lead poisoning prevention and toy safety, to cite some shining examples. The Commission's well earned recognition has been based on the magnitude of harm reduction accomplished by the agency and the professionalism of their approach. But the path has not always been clear.

In the context of the PFCSA, the advocacy focus of the high risk of flame jetting incidents caused by ethanol fueled consumer hospitality devices has been effectively mitigated by appropriate regulations and practical solutions developed and adopted by the affected industries. The lower priority hazard in the 'gas can' industry had also been addressed through effective collaboration with industry and was included in the PFCSA regulatory scheme. However, the extent to which the inconvenience caused by the flame arrestors in gas cans have led consumers to remove these devices remains un-quantified. Although very few actual incidents have been documented, the pre-filled fuel container segment (specialty fuel, lighter fluid, etc.) has been included in the flame jetting protections required under the PFCSA and implementation has recently been accomplished. Taken together, the adverse impacts that affected several hundred lives over the last decade have been prevented for the future.

While a broader range of flammable liquid containers used for fuel and other applications may have a theoretical risk of causing flame jetting incidents, and there are perhaps even anecdotal examples of such incidents, there is a lack of credible evidence of a level of risk that would warrant regulatory intervention. This is an important consideration when, as for fuel additives, a huge impact on the industry as well as consumers would be undertaken to solve a non-existent problem.

The CPSC imposed a broader scope for compliance with the PFCSA than the legislative intent in its rulemaking[16] in January 2023 and in the May 19, 2023 Enforcement Discretion letter.[17] The effect

[16] *Determinations Regarding Portable Fuel Container Voluntary Standards Under the Portable Fuel Container Safety Act*, 88 FR 2206).

[17] Enforcement Discretion for Pre-Filled Portable Fuel Containers Subject to ASTM F3429/F3429M-20 Under the Portable Fuel Container Safety Act of 2020, from CPSC Office of Compliance and Field Operations, May 19, 2023

appears to be that a consumer product safety rule is applicable to fuel additive containers and that manufacturers are bound to report failure to comply as per section 15(b) of the CPSA.[18] The CPSC would have to maintain a dialog with around a dozen producers over the 3 to 5 year period during which a solution would be sought. As much as it would be an unnecessary burden for the industry, this expansion of the scope of the PFCSA is an inefficient use of scarce resources at the CPSC to address a hazard which has not been shown to exist in the real world.

IX. **The CPSC Needs to Provide Clarity**

The above-mentioned actions that appear to apply the requirement of PFCSA to a broader scope of products than intended by the legislation eroded the regulatory clarity around flame jetting risk mitigation. It is well recognized that regulatory requirements must be crystal clear to all stakeholders and applied equally across the industry as competitive markets depend on a level playing field.

As there is no compelling evidence of a level of risk that would justify the imposition of a consumer product safety rule on a broader range of containers than the PFCSA intended, the petitioners request CPSC to reverse the actions that broadened the impact of the PFCSA. Our request is for the CPSC to publish a Statement of Policy[19] that returns the scope of the PFCSA to:

"any container or vessel (including any spout, cap, and other closure mechanism or component of such container or vessel or any retrofit or aftermarket spout or component intended or reasonably anticipated to be for use with such container):

A. Intended for flammable liquid fuels with a flash point less than 140 degrees Fahrenheit, including gasoline, kerosene, diesel, ethanol, methanol, denatured alcohol, or biofuels;
B. That is a consumer product with a capacity of 5 gallons or less; and
C. That the manufacturer knows or reasonably should know is used by consumers for transporting, storing, and dispensing flammable liquid fuels."[20]

Specifically, the policy should remediate additions that were made, or seem to have been made, to the scope of the PFCSA in the course of its implementation.[21] The specific points that be addressed in the requested Statement of Policy are:

- That the products covered by the PFCSA are as listed in paragraph A above and that the CPSC assertion that **is not limited to** the products as listed in paragraph A above;
- That the classification of a particular container for purposes of the PFCSA is as presented in the act itself and is not subject to a **case-specific** interpretation by the CPSC**;**
- That a liquid (with a flash point less than 140 degrees Fahrenheit) intended to be **used in a fuel mixture** but is not itself a fuel is not considered a fuel under the PFCSA;

[18] 15 U.S.C.§2058
[19] For example, as published at 81 FR 12587 and 84 FR 37767
[20] 15 U.S.C. 2056d(b)(8))
[21] The text shown in boldface refers to the elaboration in section IV *Portable Fuel Container Safety Act Scope* of the evolution of the PFCSA Enforcement policy.

- That the PFCSA applies to the flammable liquid fuels listed in the act itself and does not include the additional products **camp fuel, fire starters and accelerants, fuel additives, and engine cleaners** as previously identified by the CPSC; and,
- That the regulation applies to fuel containers and **does not include flammable liquid containers that are not used for fuel.**

If you have any questions or would like to discuss this petition, please do not hesitate to contact either party to this petition.

Respectfully submitted,

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ATTACHMENT 1

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Prevent Serious Burn Injuries

SUPPORT H.R. 806, THE PORTABLE FUEL CONTAINER SAFETY ACT OF 2019

Summary

H.R. 806, the Portable Fuel Container Safety Act of 2019, introduced by Reps. Mike Thompson (D-CA) and David Joyce (R-OH), would direct the Consumer Product Safety Commission (CPSC) to issue a final rule establishing clearly defined standards for installing flame arrestors on portable fuel containers.

Problem

Portable fuel containers can pose a serious risk to consumers. Under specific chemical conditions, something known as a flashback explosion can occur. During a flashback explosion, gas vapor from a fuel container escapes and comes in contact with a spark or flame causing an ignition that flashes back into the container. This can lead to a flame explosion with potentially catastrophic results.

Fortunately, installing a simple device called a flame arrestor can prevent the estimated 18,500 annual injuries (incident source: CPSC's National Electronic Injury Surveillance System Database). A flame arrestor is a small piece of mesh or perforated disk designed to disrupt flame. It costs about $0.02-$0.05 per fuel container.

Standards for flame arrestors are already well developed. Flame arrestors are currently included in products such as metal "safety" gas cans, fuel tanks, and charcoal lighter fluid. They are required in workplace fuel containers but are not required in consumer portable fuel containers.

Current State of Play

In 2007, the CPSC formed a subcommittee to address the issue of burn injuries resulting from portable fuel container use. In 2011, the CPSC initiated a voluntary product recall for portable fuel containers not having a flame arrestor. This recall was unsuccessful, leaving approximately 100 million portable fuel containers without flame arrestors being sold to thousands to unsuspecting consumers and resulting in thousands of preventable injuries each year.

Solution

H.R. 806 would provide up to 18 months for CPSC to adopt a voluntary standard regarding flame arrestors on portable fuel containers. The voluntary standard may be developed by ASTM International, the current international standards organization that creates technical standards for a wide range of products, materials, and services. If no voluntary standard is created, CPSC would be required to issue a final rule on flame arrestors no later than 30 months after the bill's enactment. H.R. 806 would allow any voluntary standard adopted by CPSC to be enforced as a consumer product safety rule. The bill would also allow a standard development organization to make revisions to any volunteer standard, which would be subject to the approval of CPSC.

Furthermore, H.R. 806 would require CPSC to create a campaign to educate consumers about the dangers associated with using portable fuel containers near an open flame or any other source of ignition. It would also require the commission to submit to Congress a summary of actions taken during the campaign within two years of the bill's enactment.

ATTACHMENT 2

NFPA John Hall 2014

figures are 2007-2011 annual averages

flammable and combustible liquid fires:	number		deaths		injuries		
	160,910		454		3,910		
home	55,390	34%	202	44%	2,708	69%	
gasoline	*7,960*	*14%*	*106*	*52%*	*432*	*16%*	
structure	43,620	79%	196	97%	2,559	94%	% of "home"
accelerant	*1,030*	*2%*	*36*	*18%*	*72*	*3%*	% of "home - structure"
garage	*800*	*2%*	*14*	*7%*	*148*	*6%*	% of "home - structure"
C IIIB	28,180	65%	27	14%	1,838	72%	% of "home - structure", mainly cooking oil
C II	6,890	16%	10	5%	93	4%	% of "home - structure" mainly heating oil
accelerant	*60*	*1%*	*3*	*27%*	*1*	*2%*	% of C II, i.e. kerosine, diesel
gasoline	2,410	6%	101	52%	325	13%	% of 'home-structure' further detail on location
intentional	1,260	52%	74	73%	98	30%	% of "home-structure-gasoline"
accelerant	380	30%	21	28%	21	21%	% of "home-structure-gasoline-intentional"
not intentional	1,150	48%	27	27%	227	70%	% of "home-structure-gasoline"
accelerant	30	3%	1	4%	19	8%	% of "home-structure-gasoline-unintentional"
other	6,080	14%	55	28%	302	12%	% of "home - structure"
vehicle	4,000	7%	4	2%	79	3%	% of home
gasoline	2,960	74%	4	100%	73	92%	% of "home-vehicle"
outdoor	7,770	14%	2	1%	70	3%	% of home
gasoline	2,590	33%	1	50%	34	49%	% of "home-outdoor"
non home	105,520	66%	252	56%	1,202	31%	
gasoline	*52,690*		*171*		*693*		
structure	11,710		34		458		charcoal lighter is significant equipment
accelerant	*380*	*3%*	*7*	*22%*	*14*	*3%*	% of non home-structure
garage	*630*	*5%*	*4*	*12%*	*65*	*14%*	% of non home-structure
C IIIB	5,560	47%	1	2%	134	29%	% of "non home - structure", mainly cooking oil
C II	1,530	13%	2	6%	15	3%	% of "non home - structure", mainly heating oil
accelerant	40	3%	0	0%	0	0%	% of C II, i.e. kerosine, diesel
gasoline	1,790	15%	21	61%	157	34%	high impact, high proportion of fatalities
intentional	930		15		47		% of "non home-structure-gasoline"
accelerant	260		4		11		% of "non home-structure-gasoline-intentional"
not intentional	860		6		110		% of "non home-structure-gasoline"
accelerant	20		0		3		% of "non home-structure-gasoline-unintentional"
other	2,830		10		152		
vehicle	68,390		207		641		
gasoline	39,920		143		475		
outdoor	25,240		11		103		
gasoline	10,990		7		61		