UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
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**Memorandum**

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SUBJECT: Portable Fireplace (Including Firepots), Gasoline Container, and Flammable Liquid Fuel such as Gel Fuel Incident Data as of December 1, 2016

After several severe injury incidents involving firepots and pourable gel fuel were reported to the Consumer Product Safety Commission (CPSC), staff identified these products as a possible emerging hazard in 2011. A multidisciplinary team began monitoring reported incidents to determine the extent and nature of the hazard to inform potential mitigation strategies.

On September 1, 2011, CPSC announced a recall of pourable firepot gel fuel from nine manufacturers. In December 2011, CPSC authorized publication of an advance notice of proposed rulemaking (ANPR) to consider establishing labeling or performance standards for firepots and gel fuels. To that end, CPSC staff reviewed data for all portable fireplaces, not just those marketed as "firepots." As we receive reports, staff continues to compile and characterize incidents. The earliest firepot incident staff knows of occurred on April 3, 2010, and the latest occurred on June 28, 2014. Staff conducted the most recent search for portable fireplaces (including firepots) and alcohol-based fuel incidents on December 1, 2016. In some cases, CPSC received notice of the incident shortly after it occurred; and in other cases, incident reporting took more than 1 year. In particular, delayed reporting of many incidents that occurred in 2010 and early 2011 did not occur until after the June 2011 release of high-profile media reports on firepot incidents and serious burn injuries.

CPSC's multidisciplinary team identified flame jetting as the principal phenomena causing the majority of incidents and injuries with firepots and fuel gels. Flame jetting is the sudden creation and projection of a fireball of burning flammable liquid fuel when a container of the flammable liquid is poured in the presence of a flame or other ignition source. Flame jetting is not unique to

firepots and fuel gels. Flammable liquid fuels used with other portable fireplaces, gasoline containers, and some other consumer-available flammable liquid fuels all present a risk of flame jetting when used in the presence of a flame or other ignition source. Flame jetting can be mitigated by using an effective flame arrestor or other effective Flame Mitigation Device (FMD).[1]

All of the incidents (reported to CPSC) discussed in this memorandum, were attributed to either the use of a firepot or other portable fireplace, or involved flammable liquid fuel and could have been mitigated by an effective FMD. CPSC staff is focused on incidents that could have been mitigated or prevented by an effective FMD.

**Portable Fireplace (Including Firepot) Incident Data:** As of December 1, 2016, CPSC is aware of 115 incidents involving portable fireplaces (including firepots) and flammable liquid fuels that resulted in 126 injuries and three deaths. CPSC staff searched CPSC's Injury and Potential Injury Incident (IPII) Database from January 1, 2010 to December 1, 2016. The IPII database comprises Internet complaints, newspaper accounts, hotline reports, and medical examiner reports and is part of the Consumer Product Safety Risk Management System (CPSRMS). These reports include incidents where injuries are involved, incidents with no injuries, and some incidents involving fatalities. IPII is not a probability sample, so it cannot be used to produce national estimates. Although they cannot be used to produce estimates, the IPII incidents provide a minimum of counts. There have been at least as many flammable liquid incidents as those collected in IPII.

The numbers of portable fireplace (including firepot) incidents have decreased since the firepot recalls in fall 2011. CPSC staff is aware of 20 portable fireplace (including firepot) incidents that occurred in 2010 and 74 that occurred in 2011, but only 20 since then (12 in 2012, 6 in 2013, 1 in 2014, and 1 in 2015). CPSC staff is not aware of any portable fireplace (including firepot) incidents that have occurred since 2015. Of the 126 known firepot injuries, 120 occurred between 2010 and 2012. Two of the three known portable fireplace (including firepot) fatalities occurred in 2011. Table 1 details the known portable fireplace (including firepot) incidents by the year in which they occurred.

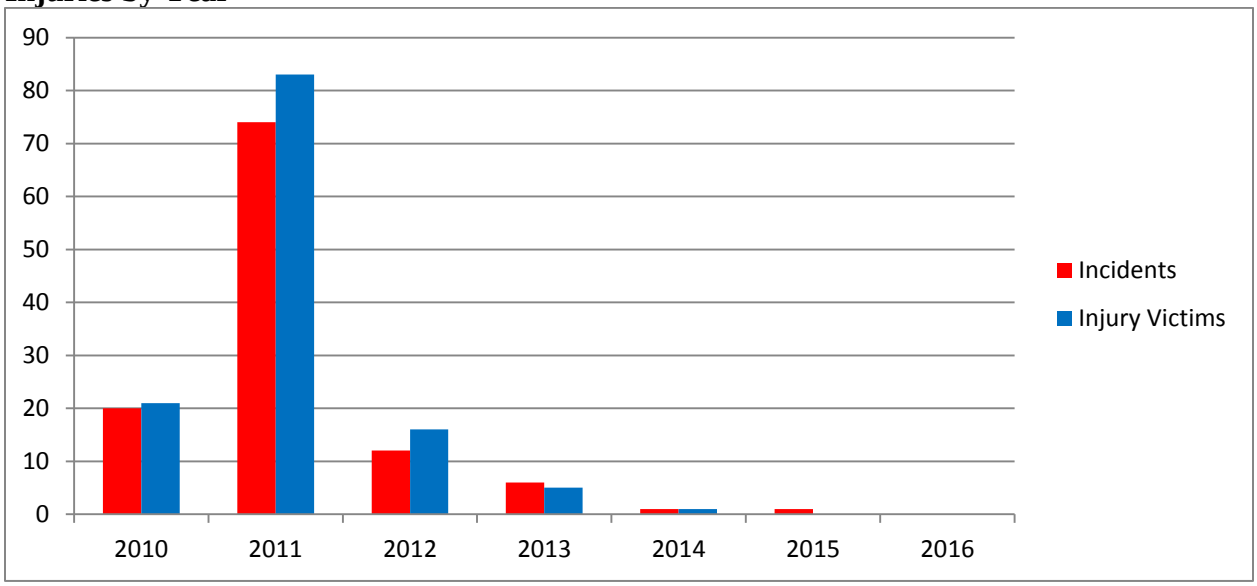
[1] CPSC staff is working to test methods of determining the effectiveness of FMDs to work toward developing a standard.

**Table 1. Reported Flammable Liquid Fuel/Firepot Incidents (through 12/1/16) by Year of Incident**

| Year | Incidents | Injury Victims | Hospitalized Injury Victims[2] | Deaths |
|---|---|---|---|---|
| 2010 | 20 | 21 | 14(3) | 0 |
| 2011 | 74 | 83 | 39(15) | 2 |
| 2012 | 12 | 16 | 8(5) | 0 |
| 2013 | 6 | 5 | 2(2) | 0 |
| 2014 | 1 | 1 | 1 | 0 |
| 2015 | 1 | 0 | 0 | 1 |
| 2016 | 0 | 0 | 0 | 0 |
| **Total** | **114** | **126** | **64(25)** | **3** |

Figure 1 shows the number of reported portable fireplace (including firepot) incidents by year, along with the corresponding number of injuries.

**Figure 1. Number of Reported Portable Fireplace (Including Firepot) Incidents and Injuries by Year**




**Non-Firepot Incident Data:** The hazards identified with firepots and flammable liquid fuels are not exclusive to portable fireplaces. Pouring flammable liquids over open flames can create flame jetting that may lead to severe burn injuries and can extend to other applications, such as cooking, outdoor fires, fire starters, and fixed fireplaces.

CPSC staff has searched IPII for incidents involving nonportable fireplace flammable liquid incidents that involve hazards similar to the hazards of firepots. These are incidents involving flammable liquid poured over open flames. The scope of the search is defined by any case in which it is likely that an FMD could have helped prevent or mitigate the incident.

[2] Inside the parentheses are the numbers of injury victims who sought medical treatment, but it is not known whether they were hospitalized. For example, in 2010, some 14 to 17 of the injury victims were hospitalized.

Many of the nonportable fireplace incidents involve gasoline containers. The incidents are divided into gasoline container incidents versus incidents that do not involve gasoline containers. As with portable fireplace incidents, CPSC staff searched for incidents that occurred from 2010 to December 1, 2016. During this period, staff found 60 in-scope gasoline container incidents that lead to 15 deaths and 53 nonfatal injuries. Of the 53 nonfatal injuries, 19 were known to require hospitalization, and there were an additional 23 in which it could not be determined whether the injuries involved hospitalizations. Table 2 shows the tallies of gasoline container incidents, as well as their associated injuries, hospitalizations, and deaths.

**Table 2. Reported Gasoline Container Incidents (through 12/1/16) by Year**

| Year | Incidents | Injury Victims | Hospitalized Injury Victims[3] | Deaths |
|---|---|---|---|---|
| 2010 | 10 | 9 | 7(2) | 3 |
| 2011 | 16 | 17 | 3(12) | 6 |
| 2012 | 9 | 5 | 2 | 0 |
| 2013 | 13 | 10 | 3(4) | 2 |
| 2014 | 7 | 8 | 2(4) | 2 |
| 2015 | 2 | 2 | 1 | 0 |
| 2016 | 3 | 2 | 1(1) | 2 |
| **Total** | **60** | **53** | **19(23)** | **15** |

In most of these incidents, gasoline is poured from a gasoline container onto an open flame when the heat from the flame causes an "explosion." In other cases, a gasoline container is left near a fire and this caused an explosion. As with portable fireplaces, some incidents that occurred during this period may come into the database in the future. Some incidents are reported to CPSC shortly after they occur, but some are reported years later.

There were also flammable liquid incidents whose hazards were similar to the hazards of portable fireplaces, but did not involve a portable fireplace or a gasoline container. These include flammable liquid fuel incidents and chafing dish incidents, lighter fluid incidents, and others. Table 3 characterizes these incidents and their casualties by the type of product involved.

[3] Inside the parentheses are the number of injury victims that sought medical treatment but it is not known if they were hospitalized.

**Table 3. Reported Flammable Liquid Incidents (through 12/1/16) not Involving a Firepot or a Gasoline Can**

| Product | Incidents | Injury Victims | Hospitalized Injury Victims[2] | Deaths |
|---|---|---|---|---|
| Chafing Dish | 2 | 1 | 0(1) | 1 |
| Lighter Fluid | 2 | 2 | 2 | 0 |
| Gel Fuel | 1 | 1 | 1 | 0 |
| Chafing Fuel Canister | 1 | 1 | 0 | 0 |
| Citronella Gel Fuel | 1 | 1 | 0(1) | 0 |
| Coffee Table | 1 | 1 | 0 | 0 |
| Infusion Burner | 1 | 1 | 0(1) | 1 |
| Lantern – Camping Fuel | 1 | 1 | 1 | 0 |
| Built-in Fireplace | 1 | 0 | 0 | 0 |
| Rubbing Alcohol | 1 | 0 | 0 | 1 |
| **Total** | **12** | **9** | **4(3)** | **3** |

These incidents, although they did not involve portable fireplaces, involved fires, flame jetting, or explosions of flammable liquid fuel similar to portable fireplaces. They include nine injuries (4 to 7 hospitalizations) and three deaths. Table 4 shows these incidents by year.

**Table 4. Reported Flammable Liquid Incidents (through 12/1/16) not Involving a Firepot or a Gasoline Container by Year**

| Product | Incidents | Injury Victims | Hospitalized Injury Victims[4] | Deaths |
|---|---|---|---|---|
| 2010 | 1 | 0 | 0 | 1 |
| 2011 | 6 | 5 | 1(2) | 1 |
| 2012 | 1 | 1 | 1 | 0 |
| 2013 | 1 | 0 | 0 | 0 |
| 2014 | 0 | 0 | 0 | 0 |
| 2015 | 1 | 1 | 0(1) | 1 |
| 2016 | 2 | 2 | 2 | 0 |
| **Total** | **12** | **9** | **4(3)** | **3** |

[4] Inside the parentheses are the numbers of injury victims who sought medical treatment, but it is not known if they were hospitalized. For example, of the nine injury victims, there were a total of four to seven victims who were hospitalized.