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departments, consumers, newspapers, and the CPSC's National Electronic Injury Surveillance System ("NEISS"). The number of fires reported each year increased sharply beginning in 1995. Part of the increase is believed to be due to CPSC's increased efforts to obtain more information on fires caused by children playing with cigarette lighters, to monitor the effectiveness of the 1994 standard. Because these data are actual incidents rather than national estimates, the extent of the total problem may be greater.

National Fire Incident Reporting System ("NFIRS") data, upon which national fire loss estimates are based, do not specify the age of the child who started the fire or the type of lighter involved. The staff is currently conducting a study to evaluate the effectiveness of the Safety Standard for Cigarette Lighters. Data collection, based on reports from participating fire departments, began in November 1997 and will continue through the fall of 1998. The results of the Cigarette Lighter Evaluation Study will provide information about the age of the child who started the fire and the lighter type, *i.e.*, cigarette or utility.

The 1998 NFIRS data covering the study period are not expected to be available until 2000, due to the time lag involved in local jurisdictions forwarding data to

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the U.S. Fire Administration. At that time, the Commission will be able to apply the results of the Cigarette Lighter Evaluation Study to the NFIRS-based data in order to provide national estimates of incidents involving multi-purpose lighters.

In the 178 incidents started by children under 5, the brand name of the lighter involved was reported in 86 incidents. Of these, 77 (90 percent) involved one manufacturer, which has about a 90 percent share of the market. There were five other brands identified in the remaining six incidents.

The high proportion of deaths of children under age 5, and the severity of the injuries, illustrate the hazard associated with children playing with multi-purpose lighters. Nationally, 39 percent of the estimated 780 children under age 5 who died in home fires annually between 1991 and 1995 were in fires started by a child playing, usually with lighters or matches. The data reported by the staff indicate that children playing with multi-purpose lighters have become a part of this problem.

C. Baseline Testing

To establish the level of child resistance of multi-purpose lighters that are currently on the market, CPSC contractors conducted "baseline" testing of surrogates of

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5 different models of multi-purpose lighters, using the test protocol for cigarette lighters (at 16 CFR section 1210.4). As far as child-resistance performance is concerned, the cigarette lighter protocol is essentially identical to the protocol proposed below for multi-purpose lighters. Three of the multi-purpose lighters tested have triggers, one has a pushbutton, and one has a squeeze handle. All of the lighters, except the model with the squeeze handle, have an on/off switch that must be in the "on," or unlocked, position to operate the lighter.

The lighters tested were not designed to be child resistant. The Commission used the results of the baseline testing to calculate the potential benefits of mandatory requirements for multi-purpose lighters, as discussed in the Preliminary Regulatory Analysis at Section G of this notice.

The test protocol that was used for the baseline testing requires panels of 100-200 children to determine the child resistance of lighters. The test is conducted with pairs of children using surrogate lighters. A surrogate lighter has no fuel, and produces a signal instead of a flame when the lighter is operated. Staff engineers designed and built the battery-operated surrogate lighters used for the baseline testing. After

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these lighters turned the switch "on" and pulled the trigger. After the demonstration, the testers returned the lighters to the children with the switch in the same position the children left them at the end of the first 5-minute test period. In the sixth test, Model D was retested with the lighters' switch in the "on" position. Almost 90 percent of the children were able to operate the lighters in this test. In the seventh test, the lighters did not have an on/off switch. Over 95 percent of the children were able to operate this lighter.

Table 4 summarizes the results of the baseline testing. For a frame of reference, the standard for cigarette lighters requires a minimum child resistance of 85 percent. The child resistance of the lighters tested with the on/off switch in the "off" position ranged from 24 to 41 percent. Therefore, none of the lighters met the requirements of the cigarette lighter standard.

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Table 4-BASELINE TEST RESULTS		
Lighter	Successful Operations	Child resistance
TEST 1 Model A - Trigger without surrogate system	63/100	37%
TEST 2 Model A - Trigger	66/100	34%
TEST 3 Model B - Pushbutton	63/100	37%
TEST 4 Model C - Trigger	76/100	24%
TEST 5 Model D - Trigger	59/100	41%
TEST 6 Model D - Trigger switch unlocked ("on")	88/100	12%
TEST 7 Model E - Squeeze Handle(no on/off switch)	96/100	4%

D. The Proposed Standard

Scope. As noted previously, the products subject to the draft proposed standard are multi-purpose lighters, also referred to as grill lighters, fireplace lighters, utility lighters, micro-torches, or gas matches. These

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are hand-held, flame-producing devices that operate on fuel and are used by consumers to ignite candles, fuel for fireplaces, charcoal or gas-fired grills, campfires, camp stoves, lanterns, or fuel-fired appliances. The definition of multi-purpose lighters excludes matches, lighters intended primarily for igniting smoking materials, and devices with more than 10 oz. of fuel.

Requirements. Most of the provisions of the proposed standard are essentially the same as the Safety Standard for Cigarette Lighters, including a required child resistance of 85 percent. The test protocol for evaluating the child resistance of lighters is also the same, although there are some wording changes for clarification of original intent.

In contrast to the Safety Standard for Cigarette Lighters, the proposed rule covers all refillable and nonrefillable multi-purpose lighters regardless of their cost. The baseline testing showed that 63 out of 100 children were able to operate a seemingly unwieldy \$40.00 lighter with a very long handle and an 18-inch flexible nozzle.

Some industry members expressed concern that the additional time required to activate a child-resistant mechanism could increase the risk of flash-back from accumulated gas where the lighter did not light on the

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first attempt. As discussed in more detail later in this notice, the Commission does not know how the potential for flash-back would be affected by child-resistant mechanisms and solicits information on this issue. To minimize or eliminate any additional risk, however, the proposed rule specifies that a multi-purpose lighter must allow multiple operations of the ignition mechanism (with fuel flow) without further operation of the child-resistant mechanism, unless the lighter requires only one motion to both (i) overcome the child-resistant mechanism and (ii) ignite the fuel. The Commission could reconsider this requirement if additional information indicates that any additional risk of flashback is not significant, that allowing multiple activations after operation of the child-resistant mechanism would cause an additional risk of child-play fires, or that the cost of this requirement is excessive.

Some multi-purpose lighters allow the lighter to remain lit after it is released by the user. This can allow hands-free operation during operations such as soldering. The Commission is interested in information from the public and affected industry on the need for a hands-free feature and on any additional risk of child-play fires that such a feature might bring to child-resistant lighters. The proposed rule allows a lighter to

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remain lit after being released by the user under certain circumstances.

To address the child-resistance issue with respect to lighters that have this hands-free feature, the Commission is proposing two requirements that are not in the cigarette lighter standard. The first new requirement (§ 1212.3(b)(2)) will help prevent the dangerous situation where a child who operates the child-resistant mechanism and lights the lighter could create a flame that would not go out when the lighter is released, even if it is dropped. The proposed rule specifies that, after the lighter is lit, an additional manual operation must be performed to activate the feature that allows the lighter to burn without being held by the user. This will prevent multi-purpose lighters from being lit when the hands-free feature is engaged.

The second new requirement is that a lighter that remains lit after it is released need not return automatically to the child-resistant condition when it is released. It must automatically reset, however, when or before the user lets go of the lighter after turning off the flame. This allows hands-free operation but requires that, by the time the lighter is released, either without or after hands-free operation, the child-resistant mechanism will have reset automatically.

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The draft standard has recordkeeping and reporting requirements that will allow the Commission to ensure that lighters comply. The draft standard also requires manufacturers and importers to provide a certificate of compliance to any distributor or retailer to whom the lighters are delivered. Anti-stockpiling provisions are designed to prevent the importation or manufacture of excessive numbers of noncomplying lighters between publication of the final rule and the effective date. The definition of base period for the anti-stockpiling provisions has been changed to "the most recent calendar year" rather than "any 1-year period during the 5-year period" prior to publication of the final rule. This change from the Safety Standard for Cigarette Lighters was recommended by the Technical Task Group of ASTM F1502. The U.S. Customs Service keeps its records by calendar year, and it is more practical for the Commission to obtain data on imports for the most recent year. The Technical Task Group also suggested that importers be required to provide the Commission with documentation of importation numbers for both the baseline period and the anti-stockpiling period. These

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requirements will assist the Commission in enforcing the anti-stockpiling provisions.

E. Statutory Authority for This Proceeding

Three of the statutes administered by the Commission have at least some relevance to the risk posed by non-child-resistant multi-purpose lighters. These are the Consumer Product Safety Act ("CPSA"), 15 U.S.C. 2051-2084; the Poison Prevention Packaging Act ("PPPA"), 15 U.S.C. 1471-1476; and the Federal Hazardous Substances Act ("FHSA"), 15 U.S.C. 1261-1278. The Commission has decided to use the authority of the CPSA to issue the proposed standard for the child resistance of multi-purpose lighters. A full explanation of the Commission's reasons for that decision is published in this issue of the FEDERAL REGISTER in a notice, under Section 30(d) of the CPSA, that proposes a rule determining that it is in the public interest to regulate this risk under the CPSA, rather than the FHSA or the PPPA. 15 U.S.C. 2079(d).

The procedure prescribed by the CPSA is as follows. The Commission first must issue an ANPR as provided in section 9(a) of the CPSA. 15 U.S.C. 2058(a). This was done by publishing the FEDERAL REGISTER notice of January 16, 1997. If the Commission decides to continue rulemaking proceeding after considering responses to the ANPR, the Commission must then publish the text of the

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proposed rule, along with a preliminary regulatory analysis, in accordance with section 9(c) of the CPSA. 15 U.S.C. 2058(c). This FEDERAL REGISTER notice constitutes the notice of proposed rulemaking. If the Commission then wishes to issue a final rule, it must publish the text of the final rule and a final regulatory analysis that includes the elements stated in section 9(f)(2) of the CPSA. 15 U.S.C. 2058(f)(2). And before issuing a final regulation, the Commission must make certain statutory findings concerning voluntary standards, the relationship of the costs and benefits of the rule, and the burden imposed by the regulation. CPSC § 9(f)(3), 15 U.S.C. 2058(f)(3). Preliminary findings are contained in this proposed rule.

Comments should be mailed, preferably in five copies, to the Office of the Secretary, Consumer Product Safety Commission, Washington, D.C. 20207-0001, or delivered to the Office of the Secretary, Consumer Product Safety Commission, Room 502, 4330 East-West Highway, Bethesda, Maryland 20814; telephone (301) 504-0800. Comments may also be filed by telefacsimile to (301) 504-0127 or by email to cpsc-os@cpsc.gov. Comments should be captioned "NPR for Multi-purpose lighters." All

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comments and submissions should be received no later than [insert date that is 75 days from publication].

F. Market Information

The Product. Most multi-purpose lighters are sold at retail for \$2.50 to \$8 each. Other multi-purpose lighters have additional features, such as refillable fuel chambers, flexible extended nozzles, and spark mechanisms powered by replaceable batteries. These lighters can retail for about \$20 or more. The type of multi-purpose lighter known as "micro-torches" also have applications in soldering, hobbies, and crafts.

Manufacturers. Although the precise number is unknown, industry sources estimate that there may be as many as 20 manufacturers of multi-purpose lighters and as many more importers and private labelers. Some manufacturers supply more than one importer or private labeler. The number of firms participating in the market is expected to increase as sales increase. Three manufacturers are members of the Lighter Association, a trade association representing manufacturers of cigarette lighters. The Lighter Association estimates that its members have more than 95 percent of the market for multi-purpose lighters in the United States. The manufacturer with the largest market share is Scripto-Tokai Corporation. Industry sources indicate that

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Scripto-Tokai may have 90 percent of the market. Other major manufacturers include Swedish Match (Cricket® brand), BIC, and Flamagas.

Retail prices for multi-purpose lighters generally start at less than \$2.50, and most retail for less than \$8.00. However, some high-end multi-purpose lighters retail for \$20 to \$40 or more. These are generally refillable lighters with battery powered ignition systems that ensure a more reliable ignition. Micro-torches have been observed retailing for as little as \$12, but they more frequently retail for from about \$20 to more than \$100. The high-end and micro-torch lighters combined may have less than three percent of the market for multi-purpose lighters.

BIC Corporation recently introduced a multi-purpose lighter that is believed to meet the requirements of the proposed rule. BIC expected that its multi-purpose lighter would sell for between \$3.99 and \$4.99, but its observed retail prices have been as low as \$3.49 and as high as \$5.49.

BIC Corporation manufactures its multi-purpose lighter at a facility in South Carolina. Only one other manufacturer, Donel, is known to produce multi-purpose lighters domestically. Scripto-Tokai imports its lighters from Mexico. Flamagas (Clipper brand) lighters are

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produced in Spain. Most other lighters are manufactured in Asian countries, such as the Philippines, Taiwan, Korea, and China.

Another manufacturer is marketing a multi-purpose lighter for about \$25 that has features designed to be child resistant, but this lighter has not been tested according to the protocol in the Safety Standard for Cigarette Lighters, 16 CFR 1210.

Sales and useful product life. The most common type of multi-purpose lighters was introduced by Scripto-Tokai in 1985. According to Scripto-Tokai, it sold one million units the first year. Micro-torches, representing a small portion of the annual unit sales of multi-purpose lighters, were also introduced around 1985. Sales of multi-purpose lighters have been increasing rapidly since their introduction. An estimated 16 million units were sold in 1995, and an estimated 20 million units are expected to be sold in 1998. Industry sources expect sales to increase at the rate of 5 to 10 percent annually over the next several years. More than 100 million multi-purpose lighters have been sold since 1985.

The useful life of a multi-purpose lighter depends on the frequency and purpose for which it is used. If a typical multi-purpose lighter contains enough fuel for an

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average of 1,000 lights², a multi-purpose lighter that is used several times a day would last less than one year. On the other hand, a lighter that is used less than once a day, or only seasonally, could be expected to be used much longer. While about 20 million lighters were reportedly sold in 1997, a study based on a panel of 20,000 households indicated that fewer than 8 million U.S. households purchased multi-purpose lighters between October 1996 and October 1997.³ This suggests that most multi-purpose lighters have a useful life of less than one year, and/or that a large proportion of households that have multi-purpose lighters use more than one lighter over the course of a year. The useful life of the more expensive models, however, can be substantially longer, since they are refillable and not designed to be disposable. Therefore, these lighters can be expected to have useful lives of several years. Thus, although the unit sales of these products account for a very small

²What constitutes an "average" light is less certain than with cigarette lighters, where the average time to light a cigarette is fairly predictable. While using a multi-purpose lighter to light a candle may require little time (and fuel), lighting a gas grill may require more time. The multi-purpose lighter would have to be lit and the gas turned on, and then the gas would have to build up to an ignitable level.

³Information Resources Inc. study. Results provided by BIC Corporation.

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portion of the annual sales of multi-purpose lighters, they can be expected to account for a larger portion of the products in consumers' hands because they do not have to be replaced as often.

Substitutes for multi-purpose lighters. Several products are reasonable substitutes for multi-purpose lighters. The most common substitute is probably the match. Compared with about 8 million households purchasing multi-purpose lighters in 1997, a 1991 study for the CPSC indicated that more than 60 million households had either book or box matches. Cigarette lighters are also common substitutes for multi-purpose lighters.

Assuming that the typical multi-purpose lighter has enough fuel for 1,000 lights, the consumer cost per light is between 0.25 cents (i.e., one-fourth of one cent) and 0.8 cents.⁴ The consumer cost per light for kitchen matches is estimated to be less than 0.3 cents. Other types of matches, such as book matches, cost less per light. The cost per light of cigarette lighters is about 0.1 cents.

⁴If the retail price of a multi-purpose lighter is \$2.50, then \$2.50/1,000 lights is \$0.0025/light. If the retail price of a multi-purpose lighter is \$8.00, then \$8.00/1,000 lights is \$0.008/light.

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There are also reasonable substitutes for micro-torches when they are used in applications such as soldering. The closest substitutes would likely be non-self-igniting micro-torches. These are functionally identical to self-igniting micro-torches, except that they must be ignited with a match or other external lighter. Electric soldering irons can also be used for many of the same applications. The cost to consumers of these substitutes may be similar to the cost of micro-torches when used in some applications.

G. Preliminary Regulatory Analysis

Potential benefits of the proposed rule. The proposed rule is intended to reduce fires resulting from young children playing with, or otherwise attempting to operate, multi-purpose lighters. The benefits to society of the proposed rule are the expected reduction in fires and in the deaths, injuries, and property damage associated with these fires. While the proposed rule is intended to address such fires caused by children under the age of 5 years, there may also be some reduction in the number of fires started by children over the age of 5 years.

The Commission is aware of 119 fires from 1995 through 1997 that were started by children under age 5 years playing with, or otherwise attempting to operate,

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multi-purpose lighters. These incidents, which are summarized in Table 5 below, resulted in 18 deaths, 48 injuries, and substantial property damage. Assuming a cost of \$5 million for each fatality, an estimate that is consistent with the existing literature, a point estimate of the societal costs of the known fatalities between 1995 and 1997 is approximately \$90 million. Of the 48 nonfatal injuries, 12 involved victims that were hospitalized with burns, some severe. An earlier CPSC study estimated that the average cost of a hospitalized fire burn was \$898,000; the average cost of a nonhospitalized burn injury was estimated to be \$15,000.⁵ These estimates include medical treatment, lost income, and pain and suffering. Using these estimates, the total cost of known injuries from Table 5 is approximately \$11.3 million $[(12 \times \$898,000) + (34 \times \$15,000)]$. The property damage associated with cigarette lighter fires from child play was estimated to be an average of \$15,000 per incident. Assuming the incidents with multi-purpose lighters are similar to those resulting from cigarette lighters, the total property damage associated with the

⁵Ray, Dale R. and William W. Zamula, *Societal Costs of Cigarette Fires*. U. S. Consumer Product Safety Commission, August, 1993.

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incidents in Table 5 is estimated to be at least \$1.8 million (\$15,000 x 117 fires).

Table 5. Fire Losses Resulting from Children Under 5 Operating Multi-purpose lighters

Year	1995	1996	1997	Total
Fires	17	55	47	119
Deaths	6	8	4	18
Injuries	8	32	8	48

The total societal cost of the known incidents for the three years, including the costs associated with deaths, injuries, and property damage, is about \$103 million. This averages about \$34.4 million per year. It is important to note that these cost estimates are based only on the incidents reported to CPSC, not on aggregate fire loss estimates. There likely are other incidents of which CPSC is not aware. If so, the \$34.4 million figure understates the average annual societal cost of child-play multi-purpose lighter fires that occurred between 1995 and 1997.

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The proposed rule is not expected to eliminate all fire incidents involving children under the age of 5. Some children will probably be able to operate multi-purpose lighters that meet the requirements of the rule. Indeed, a multi-purpose lighter will meet the requirements of the proposed rule if no more than 15 percent of the subjects in the test panel can operate the lighter (or the surrogate used in place of the lighter).

On the other hand, some children under the age of 5 cannot operate the "non-child-resistant" multi-purpose lighters currently on the market. CPSC baseline testing indicates that, depending on the model, 4 to 41 percent of test subjects cannot operate non-child-resistant multi-purpose lighters. Therefore, all other things being equal, the proposed rule for multi-purpose lighters is expected to reduce the number of children under the age of 5 that can operate multi-purpose lighters by 75 to 84 percent, depending on the model.⁶ Assuming that this reduces the number of fires started with multi-purpose lighters by children under the age of 5 by the same

⁶For lighters that already have a high baseline child resistance (e.g., could not be operated by 41 percent of the test subjects, the improvement will be 75 percent $[(0.85 - 0.41)/(1.0 - .41) = 0.75]$. For lighters that do not have a high degree of baseline child resistance (e.g., could not be operated by only 4 percent of the test subjects, the improvement will be 84 percent $[(.85 - .04)/(1 - .04) = .84]$.

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percentage, the societal costs of the fires will be reduced. For example, for the period 1995 through 1997, societal costs would have been reduced by at least \$25.7 million to \$28.8 million annually had all multi-purpose lighters been child resistant.

The expected benefits of the proposed rule will be even higher if manufacturers achieve a child-resistance level greater than 85 percent. The experience with cigarette lighters indicates that most manufacturers achieve 90 percent or higher child resistance. If manufacturers of multi-purpose lighters achieve the same level of child resistance, the estimated societal benefits of the proposed rule could be 6 to 11 percent higher than set forth above.

Potential costs of the proposed rule. There would be several types of costs associated with the proposed rule. Manufacturers would have to devote some resources to develop or modify technology to produce child-resistant multi-purpose lighters. Before being marketed, the lighters must be tested and certified to the new standard. Manufacturing child-resistant lighters may require more labor or material than non-child-resistant lighters. Finally, the utility that consumers derive from lighters may be diminished if the new lighters are more difficult to operate.

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Manufacturing costs. Manufacturers will have to modify their existing multi-purpose lighters to comply with the proposed rule. In general, costs that manufacturers would incur in developing, producing, and selling new complying lighters include the following:

- Research and development toward finding the most promising approaches to improving child resistance, including building prototypes and surrogate lighters for preliminary child panel testing;
- Retooling and other production equipment changes required to produce more child-resistant multi-purpose lighters, beyond normal periodic changes made to the plant and equipment;
- Labor and material costs of the additional assembly steps, or modification of assembly steps, in the manufacturing process;
- The additional labeling, recordkeeping, certification, testing, and reporting that will be required for each new model;
- Various administrative costs of compliance, such as legal support and executive time spent at related meetings and activities; and
- Lost revenue if sales are adversely affected.

Industry sources have not been able to provide firm estimates of these costs. One major manufacturer, BIC, has

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introduced a child-resistant multi-purpose lighter. However, because BIC did not manufacture a non-child-resistant lighter, it was unable to estimate the incremental cost of developing and manufacturing child-resistant multi-purpose lighters.

A representative of another manufacturer speculated that the costs of developing, testing, and retooling for production of multi-purpose lighters might be \$1 million, if it is possible to adapt the same technology used to make cigarette lighters child resistant. However, if it were not possible to adapt the cigarette lighter technology, the commenter said that costs could be as much as \$5 million. Another manufacturer expected these costs to be significantly less than \$1 million.

Although it is conceivable that some manufacturers will spend as much as \$5 million to develop and retool to produce child-resistant multi-purpose lighters, especially if they have to make several attempts before they come up with acceptable designs, the investment in research and development by most manufacturers will likely be closer to \$1 million.⁷ If, however, it is assumed that there are 15 manufacturers and that each invests an average of \$2 million to develop and market complying lighters, the total industry

⁷This estimate is similar to the estimate used in evaluating the cigarette lighter standard.

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cost for research, development, retooling, and compliance testing would be approximately \$30 million. If amortized over a period of 10 years, and assuming a modest 3 percent sales growth each year, the average of these costs would be about \$0.13 per unit.⁶ For a manufacturer with a large market share (i.e., selling several million units or more a year), the cost per unit for the development could be lower than the estimated \$0.13 per unit, even at the high end of the estimates. On the other hand, for manufacturers with a small market share, the per-unit development costs would be greater. Some manufacturers with small market shares may even drop out of the market (at least temporarily) or delay entering the market.

The costs per unit to develop and retool to produce child-resistant designs may be higher for micro-torches, since these costs would be amortized over a significantly lower production volume. The number of micro-torches sold annually is not known. One industry source estimated that sales of micro-torches are at least in the "tens of

⁶If 20 million lighters are sold in the first year (approximately the current annual sales volume) and sales increase at the rate of 3 percent a year (industry sources indicate that they have been growing at 5 to 10 percent annually), then over a 10-year period approximately 230 million lighters would be sold. \$30 million/230 million = \$0.13/unit.

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thousands." Another stated that industry sales were in "thousands rather than millions."

Another factor that may increase the development costs for micro-torches over the costs for other multi-purpose lighters is the fact that some micro-torches can be set to allow "hands-free" operation. Therefore, some manufacturers may have to develop modifications in child-resistance technologies to work with this feature. Alternatively, manufacturers could eliminate the self-igniting features from micro-torches intended for hands-free operation, thus removing the micro-torch from the definition of multi-purpose lighter. Although this option would not likely impose a substantial cost on manufacturers, it could reduce the convenience and utility of multi-purpose lighters for some users.

In addition to the research, development, retooling, and testing costs, material and labor costs are likely to increase. For example, additional labor will be required to add the child-resistant mechanism to the lighter during assembly. Additional materials may also be needed to produce the child-resistant mechanism. While the CPSC staff was unable to obtain reliable estimates, some industry sources indicated that they believed that these costs would be relatively low, probably less than \$0.25 per unit.

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Multi-purpose lighters will also be required to have a label that identifies the manufacturer and the approximate date of manufacture. However, virtually all products are already labeled in some way. Since the requirement in the proposed rule allows substantial flexibility to the manufacturer in terms of things such as color, size, and location, this requirement is not expected to increase the costs significantly.

Certification and testing costs include costs of producing surrogate lighters, conducting child panel tests, and issuing and maintaining records for each model. The largest component of these costs is believed to be conducting child-panel tests, which, based on CPSC experience, may cost about \$25,000 per lighter model. Administrative expenses associated with the compliance and related activities are difficult to quantify, since many such activities associated with the proposed rule would probably be carried out anyway and the marginal impact of the recommended rule is probably slight. Overall, certification, testing, and administrative costs are expected to cost less than \$450,000 annually, industry wide.⁹ On average, these costs are expected to add about

⁹Assuming 15 manufacturers with 1 multi-purpose lighter model each and an average of \$30,000 for certification, testing, and administrative costs per lighter, the total costs would be \$450,000. Although the estimate assumes that

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\$0.02 per unit to the per-unit cost of producing multi-purpose lighters (\$450,000 for 20 million units).

In total, the proposed rule will likely increase the cost of manufacturing multi-purpose lighters by about \$0.40 per unit.¹⁰ The proposed rule will likely increase the cost of manufacturing micro-torch lighters by a greater amount than for other multi-purpose lighters. However the available information is insufficient to provide a reliable estimate of the increase in cost for micro-torch lighters.

The proposed rule contains anti-stockpiling provisions, authorized by section 9(g)(2) of the CPSA (15 U.S.C. 2058(g)(2)), to prohibit excessive production or importation of noncomplying lighters during the 12-month period between the final rule's publication date and its effective date. The provision limits the production or importation of noncomplying products to 120 percent of the amount produced or imported in the most recent calendar year before the publication date of the rule. Although the anti-stockpiling provision may, in the short term, prevent some companies from increasing their sales volume as quickly as they could

these costs are incurred annually, in fact, these costs are likely to be lower in subsequent years.

¹⁰This estimate is based on the following estimates: \$0.13/unit for research, development and retooling; \$.25/unit for labor and materials; and \$.02/unit for certification, testing and administrative costs.

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otherwise, the Commission believes the provision should have little impact on the market as a whole.

Effects on competition and international trade. At the present time, one manufacturer has about 90 percent of the market for multi-purpose lighters. The other manufacturers, importers, and private labelers divide up the remaining 10 percent of the market, with none of the other manufacturers thought to have more than 2 or 3 percent of the market. Thus, there is already a very high degree of concentration in the market. Even so, one manufacturer has already entered the market with a model that is believed to meet the requirements of the proposed rule, another manufacturer has a model that they claim is child resistant, and at least one other firm is believed to be actively developing a child-resistant lighter. Moreover, other firms are expected to enter the market for multi-purpose lighters, and thereby increase competition, as the market expands. Therefore, the proposed rule is not expected to have any adverse impact on competition.

With the exception of BIC, which manufactures its multi-purpose lighters in South Carolina, and one smaller manufacturer, most multi-purpose lighters are imported. To the extent that BIC has developed a child-resistant multi-purpose lighter before other manufacturers have, it may enjoy at least a short-term competitive benefit from the

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proposed rule, particularly to the extent its competitors are not yet in a position to manufacture child-resistant multi-purpose lighters. However, other manufacturers are expected to have child-resistant multi-purpose lighters ready to market on or before the rule's effective date.

Impact on small business. The Commission gives special consideration to the potential impact of its rules on small businesses. There are more than 30 manufacturers, importers, or private labelers of multi-purpose lighters. The number of firms participating in the market is increasing as the market grows. Although the dominant firms are not small, about half of the other firms may be considered to be small businesses. The cost of developing a product that complies with the proposed rule could cause some of the small importers or private labelers to stop offering multi-purpose lighters, at least temporarily. However, many of the smaller importers and private labelers are not believed to manufacture the lighters themselves, but instead import or distribute the lighters for manufacturers based, for the most part, in other countries. It is the manufacturers that will likely bear most of the costs for development of the child-resistant models. Moreover, multi-purpose lighters probably account for only a small percentage of many of the smaller importers' and private labelers' sales. Therefore, even if a small importer or private labeler stopped

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importing or distributing its own line of multi-purpose lighters, it is not likely to suffer a significant adverse effect if multi-purpose lighters accounted for a small percentage of its total sales. Some small firms that manufacture or import their own proprietary multi-purpose lighters may be more severely impacted. There are at least two small firms that market high-end and micro-torch multi-purpose lighters that market their proprietary designs.

The Commission examined the information available on 30 firms that were identified as being manufacturers, importers, or private labelers of multi-purpose lighters. Of these, 16 have fewer than 100 employees and, thus, are considered to be small businesses according to guidelines established by the Small Business Administration. Of the 16 small businesses, one is known to manufacture its own lighters, and 12 are believed to be importers. Insufficient information was available to make these determinations on the other three firms.

Impact on consumers. Aside from increased safety, the proposed rule is likely to affect consumers in two ways. First, the increased cost for producing the child-resistant models will likely result in higher retail prices for multi-purpose lighters. Second, the utility derived from child-resistant lighters may be decreased if complying lighters are more difficult to operate.

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Consumers ultimately will bear the increased cost of manufacturing multi-purpose lighters. Assuming a typical 100 percent markup over the incremental cost to manufacturers (estimated at \$0.40/unit), the proposed rule may be expected to increase the retail price of multi-purpose lighters by \$0.80 per unit. However, some manufacturers may be unable to pass all of the incremental costs directly to consumers. In these cases, the costs may be indirectly borne by consumers in the form of generally higher prices on the range of other products produced by the manufacturer or in the form of reduced earnings on investments in the company. The retail prices for micro-torch and high-end multi-purpose lighters will probably increase by a greater amount since the manufacturing costs per unit are greater for these lighters.

The utility that consumers receive from multi-purpose lighters may be reduced if the rule makes the lighters more difficult to operate. This could result in some consumers switching to substitute products, such as cigarette lighters or matches. However, as with child-resistant cigarette lighters, the manufacturers should be able to develop lighters that are only slightly, if any, more difficult for adults to operate. Therefore, the number of consumers who stop using multi-purpose lighters because of the child-resistant mechanisms is expected to be small.

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Moreover, even if some consumers do switch to other products, the risk of fire is not expected to increase significantly. Most cigarette lighters (one possible substitute) must already meet the same child-resistant standard being proposed for multi-purpose lighters. Although consumers that switch to matches may increase the risk of child-play fires somewhat, matches seem to be inherently more child resistant than non-child-resistant multi-purpose lighters. Previously, the CPSC determined that non-child-resistant cigarette lighters were 1.4 times as likely as matches to be involved in child-play fires and 3.9 times as likely to be involved in a child-play death.¹¹ Thus, even if some consumers did switch to using matches, the risk of child-play fires would still likely be less than if they continued to use non-child-resistant multi-purpose lighters.

Some manufacturers of micro-torches may respond to a rule requiring all multi-purpose lighters to be child-resistant by no longer offering micro-torches that are self-igniting. Products that are not self-igniting do not present the same risk of child-play fires and are not included within the definition of multi-purpose lighter. In this case, the consumer would have to use an external ignition

¹¹Smith, Linda E., Charles L. Smith, and Dale R. Ray, Lighters and Matches: An Assessment of Risks Associated with Household Ownership and Use," U.S. Consumer Product Safety Commission, Washington, D.C. (June 1991).

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source to light the torch. Although this option may not increase manufacturing costs, it could reduce the convenience and utility of the multi-purpose lighters. Consumers will have to provide external ignition sources, such as matches or other multi-purpose lighters, to ignite the torches.

Estimated net benefits of the proposed rule. As previously stated, the total societal costs of fires known to have been started during 1995 through 1997 by young children playing with, or otherwise attempting to operate, multi-purpose lighters was approximately \$103 million, or approximately \$34.4 million per year. This is probably an underestimate, since it only includes the cases of which CPSC is aware. During the same period, there were an average of an estimated 19.4 million multi-purpose lighters, including micro-torches, were available for use each year.¹² The societal costs of the fires started by young children with multi-purpose lighters are, therefore, about \$1.77 per lighter (\$34.4 million ÷ 19.4 million lighters). The proposed rule is expected to reduce this cost by 75 to 84

¹²The average number of multi-purpose lighters, excluding micro-torches, that were in use was 18 million. This estimate was based on estimated annual sales and an estimated useful life of 1 year. The number of micro-torches available for use was estimated to be about 1.4 million. This estimate is based on less certain data and may be subject to change as more information becomes available.

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percent. Therefore, the expected societal benefit of the proposed rule in terms of reduced fires, deaths, injuries, and property damage is expected to be \$1.33 to \$1.49 per complying lighter sold. Based on the number of multi-purpose lighters now in use (over 20 million), the total societal costs of these fires exceed \$35 million annually.

The computation of the net benefits of the proposed rule depends on the expected number of years that a multi-purpose lighter is available for use. The Commission estimates that the useful life of most multi-purpose lighters, excluding micro-torches, is about one year. Therefore, since the proposed rule may increase the cost of manufacturing multi-purpose lighters by \$0.40 and may increase the retail prices by as much as \$0.80, the net benefit to society of the proposed rule is expected to be at least \$0.53 per unit ($\$1.33 - \0.80). If 20 million units are sold per year, the proposed rule would result in an annual net benefit to consumers would be about \$10.6 million ($20 \text{ million} \times \0.53) each year.

Some multi-purpose lighters have useful lives of greater than one year. Therefore, the gross benefit of the proposed rule per lighter of this type is computed by summing the expected annual net benefit (estimated as \$1.33 per unit above) over the expected life of the lighter. For example, if a multi-purpose lighter, such as a micro-torch,

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had an expected useful life of 10 years, the gross benefit would be \$11.14 per lighter, assuming a discount rate of 4 percent. As stated earlier, the costs/unit for manufacturing these micro-torch type multi-purpose lighters is likely to be higher. Assuming a markup at retail of 100 percent over manufacturing costs and a 10-year product life, if the cost per unit to manufacture child-resistant micro-torches is less than \$5.57/unit, net social benefits would result. However, if the expected useful life of a micro-torch was only 5 years, the gross benefit would be \$6.14/unit. This would suggest positive net benefits if the per-unit manufacturing costs are less than \$3.12 per unit.

The preceding benefit estimates may tend to be low because they are based on the test results for the model of multi-purpose lighter with the highest level of baseline child resistance (41 per cent) for the tests conducted with the switch in the "off," or locked, position. The choice of this test for baseline purposes would tend to lower the benefit estimate in two ways. The child resistance of the other three models tested with the switch in the locked position ranged from 24 percent to 37 percent. Thus, the effective child resistance of currently used multi-purpose lighters likely is somewhat lower than the baseline figure used for the benefit estimates. In addition, essentially all of the children on the test panel were able to operate the

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model with no on/off switch (96 percent) and the model with the switch in the unlocked position (88 percent). This means that, to the extent that adults do not return the switch to the locked position after use, the effective child resistance of multi-purpose lighters in use would be less than that obtained from a test of a lighter in the "off" position. Thus, a child-resistant mechanism could provide a greater benefit than estimated above.

Alternatives to the proposed rule. There are possible alternatives to the proposed rule. These alternatives include not taking any action and relying on voluntary efforts, having only labeling requirements, narrowing the scope of the rule and establishing a different effective date. These alternatives are discussed below.

1. *No action and rely on voluntary efforts.* One alternative is to take no action to reduce the occurrence of fires started by children playing with multi-purpose lighters. If no mandatory rule were issued, some manufacturers might still introduce child-resistant multi-purpose lighters. While these manufacturers can emphasize the safety of their product, they could be at a competitive price disadvantage compared to manufacturers who continue to sell non-child-resistant lighters. Although the portion of the market that would be captured by manufacturers of child-resistant lighters is not known, it is reasonable to assume

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it would be substantially less than 100 percent, especially since many of the products are imported. Perhaps only two or three firms would offer such products. For example, if child-resistant lighters captured 20 percent of the market under this alternative, the annual benefits would be approximately 20 percent of the benefits of a mandatory rule.

Currently, there is no voluntary standard for child-resistant multi-purpose lighters. The Commission could work with appropriate standards-setting organizations to develop such a standard. However, for the reasons stated above, conformance with such a standard is likely to be low.

2. *Labeling requirements.* The Commission could choose not to issue a performance standard, but instead opt to rely on additional warning labels on multi-purpose lighters. However, the FHSA already requires multi-purpose lighters to be labeled "Keep out of reach of children." The effectiveness of additional labeling would likely be low.

3. *Narrowing the scope.* The Commission considered exempting the more expensive lighters (e.g., those retailing for more than \$20) from the proposed rule. This would have been similar to the exemption in the cigarette lighter standard for lighters with a customs value or ex-factory value greater than \$2.00. This was intended to exempt certain luxury cigarette lighters for which there was little

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evidence of involvement in child-play fires. However, the CPSC does not have evidence that the more expensive multi-purpose lighters are less likely to be involved in child-play fires than the less expensive models. There is no evidence that the more expensive multi-purpose lighters are stored or used differently around the home than are the more common and less expensive lighters. Furthermore, baseline testing indicates that some of the expensive lighters are at least as easy for children to operate as less expensive models. Therefore, there is insufficient evidence to conclude that exempting the more expensive multi-purpose lighters from the proposed rule would significantly reduce the costs without significantly reducing the benefits.

The Commission also considered narrowing the scope of the rule by excluding from its coverage products known as micro-torches. The Commission decided against this because micro-torches serve the same function as other types of multi-purpose lighters—to provide consumers with a useful tool for accomplishing a variety of household and recreational tasks requiring a flame—and present the same risk of operation by children. Although some micro-torches have a shorter nozzle or operate at a higher temperature than do other multi-purpose lighters, the similarity of the products in function and risk outweighs any differences and

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warrants inclusion of micro-torches within the definition of multi-purpose lighter.

Multi-purpose lighters and micro-torches share the same features; they are hand-held, lightweight, compact, self-igniting (e.g., by pressing a trigger or button), easy to carry, and convenient to store. Further, the packaging and catalog descriptions for micro-torches promote them for lighting grills, fireplaces, camp fires, camp stoves, and lanterns. In one fire incident, a micro-torch had been used by a consumer to light a furnace pilot light. These are the same types of tasks for which other multi-purpose lighters are promoted and used.

Children also will be attracted to micro-torches in the same ways that they are attracted to other multi-purpose lighters. At age two, children begin true role play and symbolic play, and make use of less realistic objects as props for pretend play.¹³ The Commission's Human Factors staff believes that micro-torches are likely to appeal to and be attractive to children because of their shapes, which, for some pocket-type micro-torches, resemble toy "ray guns" or hose nozzles that children often play with in the summer. Upon seeing them operated, some children will want

¹³Goodson, B.D. & Bronson, M.B. (1985). *Guidelines for Relating Children's Ages to Toy Characteristics* (Contract No. CPSC-85-1089). Prepared for the U.S. Consumer Product Safety Commission, Washington, DC.

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to play with the micro-torches because of a natural curiosity about fire and because they desire to imitate adults in their make-believe play. For children, micro-torches and other types of multi-purpose lighters are the same product perceptually and cognitively, with the same attraction and the same potential hazard.

It also can be expected that children will have access to micro-torches, as well as other multi-purpose lighters. Like other multi-purpose lighters, micro-torches are often used and stored in and around the home, making them accessible to children. The Commission is aware of one case in which a three-year-old boy ignited bedding materials with a micro-torch that had been used for lighting a furnace pilot light. Even if some micro-torches are stored in home tool boxes, tackle boxes, workbenches, or other places where tools are located, the Commission's incident information shows that children obtain multi-purpose lighters from such locations.

Furthermore, micro-torch lighters represent only a small portion of the multi-purpose lighters in use. Micro-torches probably account for less than five percent of the multi-purpose lighters in use and perhaps one percent of unit sales of multi-purpose lighters. Therefore, the fact that the Commission is aware of only one incident involving a multi-purpose lighter may be related to the low number of

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these products in use and not because these products are used more safely around the house. Although the per-unit costs to make torch-type lighters child resistant may be higher than for other multi-purpose lighters, the benefits may also be higher, since torch-type lighters have a longer useful life, which would result in exposure to children over a longer period of time for each lighter.

In sum, micro-torches and other multi-purpose lighters share sufficient similarity of function and risk to be considered as a single product for the purposes of the proposed rule.

4. *Alternate effective date.* The proposed rule incorporates an effective date of 12 months from the date of publication in the Federal Register. However, the Commission could consider shorter or longer effective dates. The 12-month effective date lessens the economic burden of the rule while providing protection to consumers as soon as reasonably possible.

While developing the Cigarette Lighter Safety Standard, the Commission estimated that it would take an average of 12 months to develop, test, retool for production, perform production tests, and manufacture and ship the product.¹⁴ Some manufacturers, especially those that have been

¹⁴CPSC Memorandum dated February 8, 1991, from Dale R. Ray (ECPA) to Barbara Jacobson (HS).

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following the Commission's activities on cigarette lighters and multi-purpose lighters may have already begun work on child-resistant models or can take advantage of their experience with the cigarette lighter standard and be able to manufacture and market child-resistant lighters sooner than 12 months. In fact, at least one model is already on the market.

On the other hand, manufacturers who have not until very recently started following the Commission's activity with regard to this rulemaking procedure may not have begun any development work. Manufacturers of multi-purpose lighters that do not also manufacture cigarette lighters, such as some micro-torch manufacturers, do not have the experience manufacturing child-resistant cigarette lighters. These manufacturers may be adversely affected by an effective date shorter than 12 months.

A 12-month effective date does not mean that no benefits will occur until 1 year after the publication of the rule in the Federal Register. Indeed, one manufacturer already has a child-resistant multi-purpose lighter on the market. Other manufacturers can be expected to introduce their own models as they get them developed. Therefore, the Commission expects that the number of child-resistant multi-purpose lighters on the market to begin increasing prior to the effective date of the rule.

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Conclusion. The proposed rule would have substantial net benefits to consumers. The rule should approach its maximum effectiveness within a couple of years after its effective date, since multi-purpose lighters typically have useful lives of about one year or less. At that time, as a result of the proposed rule, the number of fires started by young children playing with, or otherwise attempting to operate, multi-purpose lighters should be at least 75 percent lower than what would be expected in the absence of a rule.

There is at least one model of multi-purpose lighter on the market now that probably complies with the proposed rule. It is expected that other manufacturers should be able to produce complying multi-purpose lighters before a final rule goes into effect. Therefore, the Commission does not anticipate that the rule will cause any disruption in the supply of multi-purpose lighters.

Some manufacturers, especially those with a small share of the market, may decide not to make the needed investment to develop child-resistant multi-purpose lighters. However, since the market for multi-purpose lighters is growing, other firms can be expected to enter the market as the market expands. Therefore, since a permanent reduction in the number of firms affected by the rule is not expected, any adverse impact on competition in the market would be

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small and temporary. Any adverse impacts would be mitigated even further if the standard in the proposed rule were adopted internationally.

A number of alternatives to the rule exist, including options regarding various aspects of the proposed rule itself. While some of the options may reduce total costs, none of the alternatives would increase the overall level of safety to consumers.

H. Comments on the ANPR

The public comment period on the ANPR closed on March 17, 1997. The Commission received nine written comments, including two received after the comment period closed. Three additional written comments that were received before the ANPR was published, but not addressed previously, are also discussed in this notice. Copies of all written comments are available from the Commission's Office of the Secretary.

The President of the Ohio Chapter of the International Association of Arson Investigators Inc., and the President of the National Association of Pediatric Nurse Associates and Practitioners, Inc., wrote in support of Commission action to require multi-purpose lighters to be child resistant.

Conrad Guthrie of Vinson & Elkins, the petitioner's attorneys, submitted information on four additional

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incidents, involving three deaths. Mark W. Collmer, of McDowell Collmer, L.L.P., submitted information about another incident involving a death.

D. Bruce Kehoe of Wilson, Kehoe & Winingham submitted information about an incident involving a child who is permanently disabled due to severe burns. This law firm also submitted information on 60 incidents reported to them in response to their advertisement requesting information on multi-purpose lighter incidents in the December 1997 issue of *Fire and Arson Magazine*. For a number of these incidents, the submitted information did not state that a multi-purpose lighter was used. In 22 of the 60 incidents, the child who started the fire was reported to have used a multi-purpose lighter and to be under age 5.

Carrie Craig wrote a letter describing her experience when her home burned down after her 3-year-old daughter ignited a couch with a multi-purpose lighter obtained from the fireplace mantle.

Scripto-Tokai Corporation (Scripto) and Swedish Match North America Inc., (Cricket®), importers of multi-purpose lighters, submitted comments regarding incidents. Scripto stated that during the past 12 years it has distributed approximately 100 million multi-purpose lighters and has received only about two dozen reports of children allegedly operating a multi-purpose lighter. Scripto commented that

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most of the incidents did not involve any claim of personal injury. Cricket® reported it has sold several million multi-purpose lighters since 1992 and never had a single report of any child-play incident.

Scripto, Cricket®, and the Lighter Association, Inc., requested that any requirement for child resistance be developed as a separate standard from the Safety Standard for Cigarette Lighters.

A summary of other issues raised by the commenters, and the Commission's responses, are provided below.

Issue: Risk of Injury

The President of the National Association of Pediatric Nurse Associates & Practitioners, Inc., "agrees that multi-purpose lighters which can be operated by children under the age of 5 pose an unreasonably dangerous risk to children and their families."

The Lighter Association, Inc., questions the validity of the Commission's incident data on multi-purpose lighters and whether the incidents resulting in deaths involved a fire started by children under the age of 5.

Scripto states that the data reported in the ANPR (53 fires over 106 months) equates to one child-play fire incident every two months that may have involved a multi-purpose lighter. "Based upon available data, Scripto does not believe that multi-purpose lighters, as a class of

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products, present an unreasonable risk of serious injury or death to consumers under the definitions provided by either the Consumer Product Safety Act or the Federal Hazardous Substances Act." Scripto states that it is unclear why the Commission has selected multi-purpose lighters for possible regulation as opposed to arguably more hazardous fire producing consumer products such as matches, stoves, candles, and heaters, as evidenced in the Commission's report, "1994 Residential Fire Loss Estimates." Scripto states that "there would be a far greater societal benefit in regulating matches than multi-purpose lighters."

Response:

The staff reported 178 fire incidents that were started by children under age 5. The staff did not include incidents in this tabulation where there was a question about the age of the child who started the fire or where there was a question about whether a multi-purpose lighter was involved.

There are no data currently available to compare the per-unit risk associated with multi-purpose lighters with any other flame source. As expected, there are many more child-play incidents involving matches, because of the larger number of these products in use. The per-unit risk for other products may or may not be greater than the per-unit risk for multi-purpose lighters. However, this does not

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preclude Commission action on multi-purpose lighters if the risk of injury and death can be addressed at a reasonable cost.

Issue: Effectiveness of the Cigarette Lighter Standard

The Lighter Association, Inc., states that several of the larger distributors of disposable cigarette lighters began selling child-resistant lighters before the July 12, 1994, effective date of the Safety Standard for Cigarette Lighters. The Association cites an increase in the estimated number of child-play deaths from lighters, from 170 in 1993 to 230 in 1994, as evidence that the Cigarette Lighter Standard has not been effective.

Scripto states that there are no available data to conclude that incorporating child-resistant mechanisms into multi-purpose lighters will reduce the incidence of child-play fires. "Until the Commission has analyzed the accident data for 1995 and 1996, there is no empirical basis to conclude that the Cigarette Lighter Safety Standard has been effective in reducing the number of child play fire incidents."

Cricket® also comments that the Commission should defer a decision about extending the standard to multi-purpose lighters until it is determined whether the cigarette lighter standard has had an impact on the incidence of child-play fires.

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Response:

Fire loss estimates are now available for 1995. These data were not previously available to the commenters. There were an estimated 8,200 residential structure fires caused by children (regardless of age) playing with all types of lighters in 1995, resulting in 180 deaths and 1,220 injuries. Fire and injury estimates are lower for 1995 than for any of the four preceding years. Comparing 1995 to 1994, when the Safety Standard for Cigarette Lighters went into effect, there was a greater percentage reduction in child-play lighter fires than the reduction in residential structure fires overall. This reduction could be the first indication that child-resistant cigarette lighters help prevent child-play fires. However, there was also a reduction in child-play fires started with matches in 1995, indicating that other factors, such as general fire prevention efforts, could also be involved. However, the reduction for child-play lighter fires (23 percent) was greater than the reduction for child-play match fires (6 percent).

The Commission's experience with the Poison Prevention Packaging Act, 15 U.S.C. 1471-1476, provides ample evidence that requiring a product to be child resistant effectively reduces the risk of injury. An article published in the June 5, 1996, Journal of the

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American Medical Association, "The Safety Effects of Child-Resistant Packaging for Oral Prescription Drugs," demonstrates that child-resistant packaging has reduced childhood poisonings from oral prescription drugs for children under age 5 by about 45 percent since 1974, the year these drugs became subject to the packaging requirements. The Commission believes the child-resistant concept used under the PPPA is applicable to requiring child-resistant features on cigarette and multi-purpose lighters.

More accurate information about the effectiveness of the cigarette lighter standard will be available when the Commission completes a lighter study in the year 2000. The results of this special study will identify the specific types of lighters involved in child-play fires (e.g., cigarette lighter or multi-purpose lighter) and will also identify the proportion of fires started by children under 5 years old (the group of children most afforded protection by child resistance).

Despite the current lack of specific information on the effectiveness of the cigarette lighter standard, the Commission concludes that it should proceed with the development of a standard for multi-purpose lighters. The Commission has no reason to conclude that the Safety Standard for Cigarette Lighters is not reasonably effective

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in reducing child-play fires started by children under age 5 with lighters. When the cigarette lighter standard was issued, the Commission estimated that it would eventually prevent about 70 percent of child-play fire deaths with cigarette lighters. Since an even higher percentage reduction is expected from a standard for multi-purpose lighters, the Commission cannot justify risking possibly dozens of lives while waiting for enough time to pass to complete a detailed study of the effectiveness of the cigarette lighter standard.

Issue: False Sense of Security

The Lighter Association, Inc., and Scripto question whether the 1994 fire incident data, showing an increase in child-play fires involving cigarette lighters, indicate that smokers are becoming more careless in storing child-resistant lighters away from children because they assume "child resistant" means "child-proof." The Lighter Association, Inc., states that some distributors began selling child-resistant lighters as early as mid-1992, in advance of the July 1994 effective date. Therefore, it contends, one would not expect the number of child-play deaths to increase 35 percent (from 170 in 1993 to 230 in 1994.)

Response:

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The Commission is unaware of any evidence that the number of child-play deaths associated with cigarette lighters increased in 1994 as a result of smokers becoming more careless in storing child-resistant lighters away from children. The 1994 fire loss estimates are too near the July 1994 effective date of the Safety Standard for Cigarette Lighters to provide a measure of its effectiveness. The 1995 Residential Fire Loss Estimates are now available. Fire and injury losses associated with lighters are lower for 1995 than for any of the 4 preceding years. In 1995, the number of child-play deaths associated with cigarette lighters is down to 180 from the 230 estimated for 1994.

Issue: Attractiveness

The President of the Ohio Chapter of the International Association of Arson Investigators Inc., and the President of the National Association of Pediatric Nurse Associates & Practitioners, Inc., expressed concern that the attractiveness of the design (gun or toy shape) and colorful packaging of multi-purpose lighters would attract children to play with them.

Response:

Multi-purpose lighters do have physical characteristics similar to a gun (barrel, trigger, and in some cases, trigger guard). Most are also functionally similar to a gun since they are activated by pulling a

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trigger mechanism. It seems likely that children might play with these lighters by "shooting" them as they would a toy gun. There are references to a "gun" or "toy-like shape" in a number of the reports of fires associated with multi-purpose lighters. It seems likely that, for some children, the combination of the "toy-like" shape of multi-purpose lighters and the size of the flame could enhance the attractiveness of these lighters as play objects compared with ordinary cigarette lighters or matches. Even without a toy-like appeal, knowledge that the lighter can produce a flame would motivate many children to play with it. This is one reason the Commission is proposing this new rule.

The Commission is not aware of any incidents in which the packaging was influential in attracting children to the lighters.

Issue: Supervision

Scripto comments "that unsupervised young children are vulnerable to an array of environmental and household hazards Unfortunately, a common element among the most serious injuries to young children is a lack of proper adult supervision."

Response:

The Commission agrees that proper adult supervision is very important. However, after reviewing the fire incident reports, the Commission has concluded that the

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children were under reasonable levels of supervision at the time they started the fires. Fires were started while parents or guardians were present in the house.

Furthermore, children of the ages of those involved in the incidents are old enough to engage in play activities in rooms other than where their parents or guardians are present. In fact, child development experts state that at 3 and 4 years of age, children can be given some freedom from direct adult supervision. Thus, it is not realistic to expect parents to directly observe children of these ages during each moment of the day.

Issue: Voluntary Standards, Education, and Labeling as Alternative Means to Address the Hazard

The Lighter Association, Inc., refers to section 7 of the Consumer Product Safety Act (15 U.S.C. 2056), which states that the Commission can issue performance and/or labeling standards in addressing potential risks. The Association states the ANPR ignores voluntary standards, education, and labeling, in favor of a position that product design is the most effective approach to address a hazard.

Cricket® suggests that the Commission consider addressing identified problems with "enhanced public awareness and education programs."

Scripto states, "Whether or not the Commission elects to mandate a child resistancy standard for multi-purpose

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lighters, it must not lose sight of the goal of educating children and parents on fire safety."

Scripto comments, "Clear, effective warnings and labels must be provided with fire sources to adequately inform consumers of the applicable hazards.... such efforts must receive immediate top priority."

Response:

The Commission does not agree that the advance notice of proposed rulemaking ignores education, labeling, and voluntary standards as possible means to address the risk of injury associated with multi-purpose lighters. The ANPR specifically invited interested persons to submit an existing standard, or a statement of intent to modify or develop a voluntary standard, to address the risks of injury and death associated with multi-purpose lighters. The ANPR also solicited comments on other possible means to effectively address the hazard.

At an April 16, 1998, meeting of ASTM Subcommittee F15.02, Safety Standards for Cigarette Lighters, the members voted to support the Commission action to develop a mandatory standard for multi-purpose lighters. Manufacturers whose multi-purpose lighters comprise a major share of the market are members of this subcommittee. The members also voted to form a technical task group for the purpose of providing input to the Commission on the provisions of the

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draft standard. Based on these actions, the CPSC does not expect a voluntary standard to be developed.

The Commission does not believe that warning labels or education alone can effectively address the risks associated with multi-purpose lighters. Multi-purpose lighters have always been subject to labeling requirements under the Federal Hazardous Substances Act. The required statements include: "Keep out of the reach of children." The incidents indicate that many consumers were aware of the danger of lighters and took precautions to keep them out of the reach of their children.

When attempting to keep objects out of reach, caregivers often find a storage place that is up high. However, children learn to conquer height at an early age. At 2 years of age, a child can climb a play gym; at 2½ years of age, a child is quite skillful in climbing. By the time a child is 4 to 5 years of age, the motor abilities have evolved to the point where a child has the coordination and balance of an adult. The motor abilities of children in these age ranges make it very difficult to find a storage place that provides both convenient access for users and safety for young children.

Since most caregivers are fully aware of the dangers of young children playing with lighters, and since children access them in spite of attempts to store them out of reach,

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the Commission concludes that additional or different warning statements would not reduce the incidence of fires. The Commission preliminarily concludes that a child-resistant feature on multi-purpose lighters would be the most effective approach of addressing the hazard.

Issue: Scope

Cricket® urges the Commission to determine whether the child-play problem is related to "issues with a particular product" rather than to all multi-purpose lighters.

Response:

Although the large majority of the reported fire incidents involved one manufacturer, there were also five other brands identified. In addition, the results of the baseline testing of five different models of multi-purpose lighters demonstrate that the majority (59 to 96 percent) of the children on the test panels were able to operate them. This is a range of child resistance of 4 to 41 percent, in contrast to the minimum requirement of 85 percent in the standard proposed below. The baseline results indicate that when the on/off switch is left unlocked, as is expected to be the case in many households, most of the children in the test panel could operate the lighters.

Issue: Requirements for Multi-purpose lighters may Create New Hazards

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Scripto states that there is a concern that requiring the child-resistant mechanism to reset itself automatically after each operation of the ignition mechanism, as required in the cigarette lighter standard, "could create new and serious hazards for the product's users." Scripto states, "It is not uncommon for piezo ignition devices to require more than one attempt to ignite. Environmental factors such as wind, low temperature, altitude or moisture can also affect the consumer's ability to properly ignite the piezo lighter." Scripto states that, because a child-resistant mechanism would further delay ignition, the potential for "flashback explosions or fires" is increased in applications such as igniting a gas grill.

Cricket® states that utility "mechanisms do not light 100% of the time, particularly when used in *outdoor conditions*." They strongly believe that the Commission should analyze the potential for a small fire or explosion as a result of the delays associated with a child-resistant mechanism before proceeding to institute a standard.

The Lighter Association, Inc., comments that "Flashback fire is a very real issue ... If the new regulation reduces risks to children, but increases risks to adults (the ones who are supposed to be using the product!), then the regulation should be rejected."

Response:

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The Commission acknowledges that piezo devices, such as multi-purpose lighters, often require more than one attempt to ignite. This is due, in large part, to the fact that the fuel may not reach the end of the lighter nozzle at the same time the spark is generated. Therefore, the consumer may need to pull the trigger more than once in order to create multiple sparks.

However, the Commission does not agree that child-resistant multi-purpose lighters will create hazardous use conditions. Based on testing using gas barbecue grills, the Commission's Division of Engineering concluded that the risk of flame-up or small explosion for some grills is minimal for short periods of delayed ignition, such as 5-10 seconds. The consumer can avoid this risk altogether by igniting the lighter before turning on the gas.

To further minimize the possibility of creating a hazardous use condition, the draft standard requires that multi-purpose lighters allow multiple operation attempts before letting go of the lighter causes the child-resistant feature to reset. One manufacturer is currently marketing a child-resistant multi-purpose lighter with such a design. This manufacturer has tested the lighter according to the protocol in the Safety Standard for Cigarette Lighters to establish that it is child resistant.

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The Commission is aware of other manufacturers that are working on child-resistant designs that function similarly. With such designs, the lighting efficiency of a child-resistant multi-purpose lighter should be essentially the same as that of the non-child-resistant multi-purpose lighters currently in use.

The Commission is also aware of some multi-purpose lighters that have a feature that can be used to lock the fuel supply open. This allows hands-free operation of the lighter during soldering or similar activities; some consumers find this a useful feature. However, it might be difficult for this type of lighter to comply with a requirement that the child-resistant feature reset when the user puts the lighter down. To retain the potential for hands-free operation, the Commission is specifying that, for lighters that remain lit after being released, the lighter must return automatically to a child-resistant state by the time the user lets go of the lighter after turning off the flame. This scenario is not expected to increase the risk of fires started by children, since the lighter's user would likely turn the lighter off when leaving it for any period of time that would allow access by children.

The Commission is also proposing a requirement to help prevent the dangerous situation where a child who operated the child-resistant mechanism and lit the lighter

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could create a flame that would not go out when the lighter is released, even if it is dropped. The proposed rule specifies that, after the lighter is lit, an additional manual operation must be performed to activate the feature that allows the lighter to burn without being held by the user.

Issue: Consumer Resistance to Child-Resistant Features

Scripto challenges the Commission's position in the ANPR that consumer resistance to a child-resistant feature on multi-purpose lighters will not negate the feature's effectiveness. Scripto states that "many consumers would resist the introduction of child-resistant multi-purpose lighters. Scripto's experience with the tremendous negative reactions to its child-resistant cigarette lighters form a solid basis for this assertion.... Consideration must be given to those populations that may be exposed to potentially greater fire hazards if they were physically unable to successfully operate a child resistant multi-purpose lighter. Such individuals may switch to such less safe 'non-CR' alternatives as long stem matches or a rolled up newspaper...."

The Lighter Association, Inc. states that "contrary to the [CPSC] staff's representations, complaints regarding lighters that comply with the rule continue to come in from every region of the country.... Industry receives thousands

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of complaints every year. Products are being invented every month to override child-resistant lighters."

Response:

Although there were numerous complaints about the safety standard when child-resistant cigarette lighter models first became available in large numbers and non-child-resistant lighters became scarce, the number of complaints from consumers to the Commission has dwindled to almost nothing in 1998. Many of the initial complaints had to do with the difficulty of operating the child-resistant mechanism on the lighter models that were generally available in the marketplace in 1994 and early 1995. These early models usually had a lever or push-in tab to permit the gas release lever to function when the flint wheel was rotated to generate a flame. Later models of child-resistant lighters employ child-resistant features that are integrated into the lighter so that adults can operate the lighters much like they did the non-child-resistant pre-standard roll-and-press lighters.

The proposed rule requires that multi-purpose lighters must not be capable of having its child-resistant mechanism easily deactivated. The Commission interprets this as requiring that the child-resistant mechanism cannot easily be disabled with a common household tool, such as a knife or pliers, and still remain operable.

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In the 4 years since the lighter standard became effective, the Commission became aware of two devices that were designed and promoted for defeating the child-resistant mechanisms on certain brands of disposable child-resistant lighter models. CPSC contacted both of those firms to discourage them from selling these devices. If the Commission obtains information indicating that such devices pose a substantial risk of injury to the public, the Commission could seek corrective actions pursuant to Section 15 of the CPSA, 15 U.S.C. 2064. Furthermore, actions could be brought against persons who disable the child-resistant mechanisms on lighters intended for resale.

The Commission would also expect some consumers to write about their dissatisfaction with child-resistant features on multi-purpose lighters. However, the Commission believes that the level of consumer resistance would not prevent the expected reduction of child-play fires started with multi-purpose lighters. Furthermore, the Commission believes that manufacturers can design child-resistant multi-purpose lighters that offer minimal inconvenience to consumers.

Issue: Enforcement

The Lighter Association, Inc., comments, "The record is full of examples of problems with enforcement of the current child resistancy rule... Importers are devising new

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ways every week to evade the rule. Indeed, Compliance has recently advised industry that it is now reviewing non-child-resistant lighters from Europe and Asia being rerouted to the U.S. for sale. Substantial premiums are paid for non-child-resistant lighters."

The Lighter Association, Inc., states that the Commission's enforcement program is inadequate because of the cost of testing to assure compliance. "If the Commission cannot enforce the existing regulation, it is absurd to extend it to another product line. Ultimately, non-complying imports will take over this product line as well."

Scripto states that it has "been disappointed by the Commission's historical failure to evenly enforce the labeling requirements of the Federal Hazardous Substances Act on other multi-purpose lighter distributors." Additionally, Scripto expresses disappointment that the Commission has not taken action against the "Quick Fix," a device being sold to disable the child-resistant mechanism on cigarette lighters. It suggests that the cigarette lighter standard be amended to prohibit the intentional disarming of lighter safety devices. It also recommends that the Commission take a more proactive enforcement stance to prevent further violations of the Cigarette Lighter Standard. "Before moving forward to implement new regulations, the Commission must be prepared to ensure

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consumers, distributors and manufacturers that any such regulation will be fully enforced, without loopholes and without exception."

Cricket® comments that it has "seen ample anecdotal evidence that disreputable importers have violated, and are continuing to flout, both the stockpiling and substantive requirements of the child-resistancy standard" in spite of information about apparent violations provided to the Commission staff by importers and the Lighter Association.

Cricket® urges the Commission to work for international acceptance of lighter standards to address the enforcement evasion issue.

Response:

While CPSC is aware that some unscrupulous importers and distributors of lighters have taken actions to circumvent the intent and purposes of the standard, their overall numbers have been small, and hardly constitute a large number of schemes to "evade the rule," as alleged in this comment. CPSC and Customs have taken vigorous action against importers and distributors who do not comply with the standard, seizing and refusing entry to millions of noncomplying lighters since July 1994, working with importers to recall millions of lighters that made it into the marketplace before their noncompliance with the standard was discovered, and filing legal actions against firms that

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purposely distributed and sold lighters that had the child-resistant feature intentionally removed or disabled prior to sale to the public.

Finally, CPSC and Customs have seized several small shipments that originated in Europe of popular name brand non-child-resistant disposable cigarette lighters manufactured for the European market that were sent to United States importers as premium items with other products intended for sale in the United States. These lighters invariably were decorated with product logos (e.g., liquor or beer brands, or other consumer product logos). They were included in the shipment by the European exporter as advertising items, not products intended to be sold separately from the main goods in the shipment. Evidence in these cases suggests that in almost every instance, the inclusion of the non-child-resistant lighters in the shipment was done due to ignorance of the standard on the part of the exporter in Europe, not on an intentional attempt to thwart the safety standard. Based on this experience with the cigarette lighter standard, the Commission concludes that the compliance with a multi-purpose lighter standard will be sufficient to produce the benefits discussed above.

Issue: Requirements

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Scripto comments, "The cigarette lighter experience has seen the approval of some mechanisms which are so easy to operate that safety objectives are compromised.... Any device which lends child resistancy to a product must be more inconvenient to use or it will not be effective.... Therefore, definitions must recognize and clarify this fundamental trade-off between safety and convenience."

Response:

The Safety Standard for Cigarette Lighters requires manufacturers to conduct testing to assure that their lighters comply with all of the requirements. The manufacturers are also required to report the results of this testing to CPSC's Office of Compliance and to certify to their distributors or retailers that the lighters comply. If there is any reason to believe that the lighters are not child resistant, the Office of Compliance requests further substantiation from the manufacturer. Additionally, a program is in place at CPSC to conduct enforcement testing of cigarette lighters where warranted.

In regard to Scripto's recommendation that definitions be developed to preclude child-resistant mechanisms that are too easy to operate, the Commission points out that, just like the cigarette lighter standard, the proposed standard for multi-purpose lighters is drafted as a performance standard rather than a design standard. Any

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multi-purpose lighter, however designed, that meets the requirements in the proposed rule would be considered child resistant:

Issue: Market Impact

Swedish Match stated:

The market for the multi-purpose lighters is totally different from the one analyzed by the CPSC in connection with the cigarette lighter standard. As there are fewer competitors, we strongly urge the CPSC to study closely the likely competitive impact of the imposition of a child resistancy requirement on the multi-purpose lighter industry.... Any company would have to consider whether it could absorb successfully the added research, development, and production costs that surely would be associated with the standard and still remain competitive in the market.... Many firms (especially those with a marginal position in the market place) likely will react to the standard by exiting the market, thereby resulting in less competition and higher prices to be borne by the consuming public.

Response:

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The market for multi-purpose lighters is obviously smaller than the market for cigarette lighters, in terms of both the number of units sold annually and the number of manufacturers. It is conceivable that some firms may react to the standard by exiting the market. However, the CPSC does not agree that this will likely have a significant adverse impact on competition.

Currently, the market for multi-purpose lighters already is highly concentrated, with one manufacturer having approximately a 90 percent market share. However, CPSC expects that the degree of competition in the market may increase. One major cigarette lighter manufacturer recently entered the market for multi-purpose lighters with a model that is child resistant. Additionally, the market for multi-purpose lighters is growing at a rate of 5 to 10 percent annually, according to industry sources. As the market expands, more manufacturers may enter and thereby increase the level of competition. Furthermore, multi-purpose lighters face competition from other flame sources, including matches and cigarette lighters. These products are less expensive than multi-purpose lighters and, therefore, limit the amount that manufacturers can increase prices for multi-purpose lighters without significant sales loss, even if there are few manufacturers in the market. Finally, CPSC expects that only manufacturers with a minor presence in the