demonstrations, give the same surrogate utility lighter back to each child who did not successfully operate the surrogate utility lighter in the first 5 minutes by placing the utility lighter in the child's hand. Say "Okay, now you try to make the noise with your lighter(s) - keep trying until I tell you to stop." If any child successfully operates the surrogate utility lighter during this period, the surrogate utility lighter shall be taken from that child and the child shall not be asked to try to operate the lighter again. If the other child has not yet successfully operated the surrogate utility lighter, the tester shall ask the successful child to remain until the other child is finished. *Note:* Utility lighters having an on/off switch shall have the switch returned to the position the child left it at the first 5-minute test period before returning the lighter to the child.

(5) At the end of the second 5-minute test period, take the surrogate utility lighter from any child who has not successfully operated it.

(6) After the test is over, ask the children to stand next to you. Look at the children's faces and say: "These are special lighters that don't make fire. Real lighters can burn you. Will you both promise me that if you find a real lighter you won't touch it and that you'll tell a grownup right away?" Wait for an affirmative response from each child; then thank the children for helping.

(7) Escort the children out of the room used for testing.

(8) After a child has participated in the testing of a surrogate utility lighter, and on the same day, provide written notice of that fact to the child's parent or guardian. This notification may be in the form of a letter provided to the school to be given to a parent or guardian of each child. The notification shall state that the child participated, shall ask the parent or guardian to warn the child not to play with matches or lighters, and shall remind the parent or guardian to keep all lighters and matches, whether child-resistant or not, out of the reach of children. For children who operated the surrogate utility lighter, the notification shall state that the child was able to operate the child-resistant utility lighter. For children who do not defeat the child-resistant feature, the notification shall state that, although the child did not defeat the child-resistant feature, the child may be able to do so in the future.

(g) *Data collection and recording*. Except for recording the times required for the children to activate the signal, recording of data should be avoided while the children are trying to operate the utility lighters, so that the tester's full attention is on the children during the test period. If actual testing is videotaped, the camera shall be stationary and shall be operated remotely in order to avoid distracting the children. Any photographs shall be taken after actual testing and shall simulate actual test procedure(s) (for example, the

demonstration). The following data shall be collected and recorded for each child in the 100-child test panel:

(1) Sex (male or female).

(2) Date of birth (month, day, year).

(3) Age (in months, to the nearest month).

(4) The number of the utility lighter tested by that child.

(5) Date of participation in the test (month, day, year).

(6) Location where the test was given (city, state, and the name of the site).

(7) The name of the tester who conducted the test.

(8) The elapsed time at which the child achieved any operation of the surrogate signal in the first 5-minute test period.

(9) The elapsed time at which the child achieved any operation of the surrogate signal in the second 5-minute test period.

(10) For a single pair of children from each 100-child test panel, photograph(s) or video tape to show how the utility lighter was held in the tester's hand, and the orientation of the tester's body and hand to the children, during the demonstration.

(h) *Evaluation of test results and acceptance criterion.* To determine whether a surrogate utility lighter resists operation by at least 85 percent of the children, sequential panels of 100 children each, up to a maximum of 2 panels, shall be tested as prescribed below.

(1) If no more than 10 children in the first 100-child test panel successfully operated the surrogate utility lighter, the utility lighter represented by the surrogate utility lighter shall be considered to be resistant to successful operation by at least 85 percent of the child test panel, and no further testing is conducted. If 11 through 18 children in the first 100-child test panel successfully operate the surrogate utility lighter, the test results are inconclusive, and the surrogate utility lighter shall be tested with a second 100-child test panel in accordance with this § 1212.4. If 19 or more of the children in the first 100-child test panel successfully operated the surrogate utility lighter, the lighter represented by the surrogate shall be considered not resistant to successful operation by at least 85 percent of the child test panel, and no further testing is conducted.

(2) If additional testing of the surrogate utility lighter is required by § 1212.4(h)(1) above, conduct the test specified by this § 1212.4 using a second 100-child test panel and record the results. If a total of no more than 30 of the children in the combined first and second 100-child test panels successfully operated the surrogate utility lighter, the utility lighter represented by the surrogate utility lighter shall be considered resistant to successful operation by at least 85 percent of the child test panel, and no further testing is performed. If a total of 31 or more children in the combined first and second 100-child

test panels successfully operate the surrogate utility lighter, the utility lighter represented by the surrogate shall be considered not resistant to successful operation by 85 percent of the child test panel, and no further testing is conducted.

Thus, for the first panel of 100 children, the surrogate passes if there are 0-10 successful operations by the children; the surrogate fails if there are 19 or greater successful operations; and testing is continued if there are 11-18 successes. If testing is continued with a second panel of children, the surrogate passes if the combined total of the successful operations of the two panels is 30 or less, and it fails if there are 31 or more.

§ 1212.5 Findings.

Section 9(f) of the Consumer Product Safety Act (15 U.S.C. 2058(f)) requires the Commission to make findings concerning the following topics and to include the findings in the rule.

(a) *The degree and nature of the risk of injury the rule is designed to eliminate or reduce*. The standard is designed to reduce the risk of death and injury from accidental fires started by children playing with utility lighters. The CPSC's staff has identified 158 fires that occurred between January 1988 and April 15, 1998, that were started by children under age 5 playing with utility lighters. These fires resulted in a total of 23 deaths

and 58 injuries. Fire-related injuries include thermal burns -- many of high severity -- as well as anoxia and other, less serious injuries. The annual cost of such fires to the public is estimated to average about $32.7 million per year (average of 1995-1997). Because these data are from known fires rather than national estimates, the extent of the total problem may be greater. Fires started by children under age 5 are those which the standard would most effectively reduce.

(b) *The approximate number of consumer products, or types or classes thereof, subject to the rule.* The standard covers certain flame-producing devices, commonly known as utility lighters, that are defined in § 1212.2(b) of this Part 1212. Utility lighters may use any fuel and may be refillable or nonrefillable. Over 20 million utility lighters are expected to be sold to consumers in the U.S. during 1998. Utility lighters manufactured after [insert date that is 1 year after publication of a final rule] will be required to meet child-resistance requirements.

(c) *The need of the public for the consumer products subject to the rule, and the probable effect of the rule on the utility, cost, or availability of such products to meet such need.* Consumers use utility lighters primarily to ignite items such as candles, fuel for fireplaces, charcoal or gas-fired grills, camp fires, camp stoves, lanterns, or fuel-fired appliances or devices or their pilot lights. The following products are not utility lighters: devices, intended primarily for igniting smoking

materials, that are within the definition of "lighter" in the Safety Standard for Cigarette Lighters (16 CFR 1210.2(c)); devices that contain more than 10 oz. of fuel; or devices intended, or marketed, primarily for activities such as soldering, brazing, or welding. The standard's requirements should ensure that lighters not be operable by most children under 52 months of age.

There will be several types of costs associated with the rule. Manufacturers would have to devote some resources to the development or modification of technology to produce child-resistant utility lighters. Before being marketed, the lighters must be tested and certified to the new standard. It is also possible that manufacturing child-resistant lighters may require more labor or material than non-child-resistant lighters.

Manufacturers will have to modify their existing utility lighters to comply with the rule. There are several methods by which manufacturers might comply. One method may require the user to operate two mechanisms simultaneously. Another may require a switch or lever that prevents the operation of the lighter when in the "off" position. This would be similar to the locks on some current models, except that they would automatically reset between uses. A third method may simply require an amount of force to operate the lighter that could be achieved by most adults but not by most children.

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 utility 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 has introduced a child-resistant utility lighter. However, because that company did not previously manufacture a non-child-resistant lighter, it

was unable to estimate the incremental cost of developing and manufacturing child-resistant utility lighters.

Assuming that there are 15 manufacturers and that each invests an average of $2 million to develop and market complying lighters, the total industry 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.[17] For a manufacturer with a large market share (i.e., selling several million units or more a year) the cost per unit of the development costs 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.

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

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[17]If 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.

materials may also be needed to produce the child-resistant mechanism. While CPSC 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.

Utility 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 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 $12,000 per lighter model. Producing surrogate lighters and issuing and maintaining records may add another $5,000 to $6,000 per lighter model. Administrative expenses associated with the compliance and related activities are difficult to quantify, since many such activities associated with the 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 $400,000

annually, industry wide.[18] On average, these costs are expected to add less than $0.02 per unit to the cost of producing utility lighters ($400,000/20 million units).

Utility lighters are sold in countries other than the United States. Some manufacturers may develop lighters that meet the requirements of the rule for distribution in the United States, but continue to distribute the current, non-child-resistant models in other countries. Thus, some manufacturers may incur the incremental costs associated with producing multiple lines of similar products. These costs could include extra administrative costs required to maintain different lines and the incremental costs of producing different lines of similar products, such as using different molds or different assembly steps. These costs would, however, be mitigated if similar or identical standards were adopted by other countries.

In total, the rule will likely increase the cost of manufacturing utility lighters by about $0.40 per unit.

At the present time, one manufacturer has about 90 percent of the market for utility lighters. The other manufacturers, importers, and private labelers divide up the remaining 10

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[18]Assuming 15 manufacturers with 1 utility lighter model each and an average of $20,000 for certification, testing, and administrative costs per lighter the total costs would be $300,000. Thus the $400,000 estimate allows for higher than expected costs. Although the estimate assumes that these costs are incurred annually, in fact, these costs are likely to be lower in subsequent years.

percent of the market. Thus, there is already a very high degree of concentration in the market. Even so, at least two manufacturers have already entered the market with models that are believed to meet the requirements of the rule and at least one other firm is believed to be actively developing a child-resistant lighter. Therefore, the rule is not expected to have any significant impact on competition. Moreover, other firms are expected to enter the market for utility lighters, and thereby increase competition, as the market expands. Firms that market child-resistant utility lighters before the standard's effective date may gain an initial competitive advantage. However, any differential impact is likely to be slight and short-lived. Other manufacturers can be expected to have child-resistant utility lighters developed and ready to market before or soon after the rule goes into effect.

Impact on consumers. Aside from increased safety, the 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 utility lighters. Second, the utility derived from child-resistant lighters may be decreased if complying lighters are less easy to operate.

Assuming a 100 percent markup over the incremental cost to manufacturers (estimated at $0.40/unit), the rule may be expected to increase the retail price of utility lighters by $0.80 per unit.

The utility that consumers receive from utility 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 matches. However, as with child-resistant cigarette lighters, the increased difficulty of operating child-resistant utility lighters is expected to be slight. 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 as those applicable to utility 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 are non-child-resistant utility 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. 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 utility lighters.

As previously stated, the total societal costs of fires known to have been started during 1995 through 1997 by children under age 5 playing with, or otherwise attempting to operate, utility lighters was approximately $98.1 million. This is probably an underestimate, since it only includes the cases of

which CPSC is aware. During the same period, an estimated 54 million utility lighters were sold and available for use. The societal costs of the fires started by young children attempting to operate utility lighters is, therefore, about $1.82 per lighter ($98.1 million/54 million lighters). The rule is expected to reduce this cost by 75 to 84 percent. Therefore, the expected societal benefit of the rule in terms of reduced fires, deaths, injuries, and property damage is expected to be $1.37 to $1.53 per complying lighter sold.

As discussed above, the rule may increase the cost of manufacturing utility lighters by $0.40 and may increase the retail prices by as much as $0.80. Therefore, assuming that sales of utility lighters remain the same, the net benefit (benefits minus costs) of the rule to consumers is expected to be at least $0.57 per unit ($1.37 - $0.80). Based on 1998 sales of approximately 20 million units per year, the rule would result in an annual net benefit to consumers as high as $11.4 million (20 million x $0.57) annually. If sales of utility lighters continue to increase at current rates (5 to 10 percent annually), the annual net benefit will also increase by a similar percentage.

If, however, sales of utility lighters fall, the net benefits to consumers would be somewhat less. The reduced sales would result in higher per-unit costs, since amortization of the research and development costs, described earlier, would be spread over fewer units. Furthermore, there would be some

reduction in consumer surplus associated with the use of utility lighters.[19] Consumer surplus would be reduced by an amount equal to the difference in the utility that consumers would have received from the utility lighters that will not be purchased due to the price increase and the utility that consumers receive from the substitute products.

The actual level of benefits observed could be higher if some utility lighters are stored with the on/off switch in the "on" position. If a significant number of consumers commonly store utility lighters with the switch on, the effective level of child resistance of utility lighters currently in use may be lower than indicated by CPSC's baseline testing. This would increase the effectiveness of the rule and the value of the net benefits.

(d) *Any means of achieving the objective of the order while minimizing adverse effects on competition or disruption or dislocation of manufacturing and other commercial practices consistent with the public health and safety.* The performance requirements of this Part 1212 are based on the Commission's Safety Standard for Cigarette Lighters, 16 CFR Part 1210. In developing that standard, the Commission considered the potential effects on competition and business practices of various aspects

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[19]Consumer surplus is a concept that refers to the difference between what consumers pay for a product and the maximum price they might be willing to pay; it represents a benefit for which the consumer does not actually pay.

of the standard, and incorporated some burden-reducing elements into the standard.

One possible alternative to this mandatory standard would be for the Commission to rely on voluntary conformance to the requirements of the standard to provide safety to consumers. The expected level of conformance to a voluntary standard is uncertain, however. Although some of the largest firms may market some child-resistant utility lighters that conform to these requirements, most firms (possibly including some of the largest) probably would not. Even under generous assumptions about the level of voluntary conformance, net benefits to consumers would be substantially lower under this alternative than under the standard. Thus, the Commission finds that reliance on voluntary conformance to the provisions of this Part 1212 would not adequately reduce the unreasonable risk associated with utility lighters.

(e) *The rule (including its effective date) is reasonably necessary to eliminate or reduce an unreasonable risk*. The Commission's hazard data and regulatory analysis demonstrate that utility lighters covered by the standard pose an unreasonable risk of death and injury to consumers. The Commission considered a number of alternatives to address this risk, and believes that the standard strikes the most reasonable balance between risk reduction benefits and potential costs. Further, the amount of time before the standard becomes effective (one year after

publication of the final rule) will provide manufacturers and importers of most products adequate time to design, produce, and market safer utility lighters. Thus, the Commission finds that the standard and its effective date are reasonably necessary to reduce the risk of fire-related death and injury associated with young children playing with utility lighters.

(f) *The benefits expected from the rule bear a reasonable relationship to its costs.* The standard will substantially reduce the number of fire-related deaths, injuries, and property damage associated with young children playing with utility lighters. The cost of these accidents, which is estimated to be about $32.7 million annually, will also be greatly reduced. The rule is expected to reduce this societal cost by 75-84 percent, or by $24.0-27.4 million. The estimated annual costs to the public are about $16 million. Expected annual net benefits would therefore be $11.4 million. Thus, the Commission finds that a reasonable relationship exists between potential benefits and potential costs of the standard.

(g) *The rule imposes the least burdensome requirement which prevents or adequately reduces the risk of injury for which the rule is being promulgated.* The Commission incorporated a number of features from the cigarette lighter standard, 16 CFR Part 1210, in order to minimize the potential burden of the rule on industry and consumers. The Commission also considered alternatives involving different performance and test

requirements and different definitions determining the scope of coverage among products. The other alternatives considered generally would be more burdensome to industry and would have higher costs to consumers. Some less burdensome alternatives would have lowered the risk-reduction benefits to consumers; none has been identified that would have higher expected net benefits than the standard.

A less stringent acceptance criterion of 80 percent (rather than the standard's 85 percent) might slightly reduce costs to industry and consumers. The safety benefits of this alternative, however, would likely be reduced disproportionately to the potential reduction in costs. A higher (90 percent) acceptance criterion was also considered. This higher performance level may not be commercially or technically feasible for many firms, however. The Commission believes that this more stringent alternative would have substantial adverse effects on manufacturing and competition, and would increase costs disproportionate to benefits. The Commission believes that the requirement that complying utility lighters not be operable by at least 85 percent of children in prescribed tests strikes a reasonable balance between improved safety for a substantial majority of young children and other potential fire victims and the potential for adverse competitive effects and manufacturing disruption.

The standard will become effective 12 months from its date of publication in the FEDERAL REGISTER. The Commission also considered an effective date of 6 months after the date of issuance of the final rule. While most utility lighters sold in the U.S. could probably be made child-resistant within 6 months, the supply of some imported utility lighters would be disrupted. The 12-month period in the standard would minimize this potential effect, and would allow more time for firms to design, produce, and import complying utility lighters. The Commission estimates that there would be no significant adverse impact on the overall supply of utility lighters for the U.S. market.

(h) *The promulgation of the rule is in the public interest.* As required by the CPSA and the Regulatory Flexibility Act, the Commission considered the potential benefits and costs of the standard and various alternatives. While certain alternatives to the final rule are estimated to have net benefits to consumers, the adopted rule maximizes these net benefits. Thus, the Commission finds that the standard is in the public interest.

DRAFT

Subpart B--Certification Requirements

§ 1212.11 General.

Section 14(a) of the Consumer Product Safety Act (CPSA), 15 U.S.C. 2063(a), requires every manufacturer, private labeler, or importer of a product that is subject to a consumer product safety standard and that is distributed in commerce to issue a certificate that such product conforms to the applicable standard and to base that certificate upon a test of each item or upon a reasonable testing program. The purpose of this subpart B of part 1212 is to establish requirements that manufacturers, importers, and private labelers must follow to certify that their products comply with the Safety Standard for Utility Lighters. This Subpart B describes the minimum features of a reasonable testing program and includes requirements for labeling, recordkeeping, and reporting pursuant to sections 14, 16(b), 17(g), and 27(e) of the CPSA, 15 U.S.C. 2063, 2065(b), 2066(g), and 2076(e).

§ 1212.12 Certificate of compliance.

(a) *General requirements.* (1) *Manufacturers (including importers).* Manufacturers of any utility lighter subject to the standard must issue the certificate of compliance required by section 14(a) of the CPSA, 15 U.S.C. 2063(a), and this subpart B, based on a reasonable testing program or a test of each product, as required by §§ 1212.13, 1212.14, and 1212.16. Manufacturers must also label each utility lighter subject to the standard as required by paragraph (c) of this section and keep the records and make the reports required by §§ 1212.15 and 1212.17. For purposes of this requirement, an importer of utility lighters shall be considered the "manufacturer."

(2) *Private labelers.* Because private labelers necessarily obtain their products from a manufacturer or importer that is already required to issue the certificate, private labelers are not required to issue a certificate. However, private labelers must ensure that the utility lighters are labeled in accordance with paragraph (c) of this section and that any certificate of compliance that is supplied with each shipping unit of utility lighters in accordance with paragraph (b) of this section is

supplied to any distributor or retailer who receives the product from the private labeler.

(3) *Testing on behalf of importers*. If the required testing has been performed by or for a foreign manufacturer of a product, an importer may rely on such tests to support the certificate of compliance, provided that (i) the importer is a resident of the United States or has a resident agent in the United States and (ii) the records are in English and the records and the surrogate utility lighters tested are kept in the United States and can be provided to the Commission within 48 hours (§ 1212.17(a)) or, in the case of production records, can be provided to the Commission within 7 calendar days in accordance with § 1212.17(a)(3). The importer is responsible for ensuring that

(i) the foreign manufacturer's records show that all testing used to support the certificate of compliance has been performed properly (§§ 1212.14-1212.16),

(ii) the records provide a reasonable assurance that all utility lighters imported comply with the standard (§ 1212.13(b)(1)),

(iii) the records exist in English (§ 1212.17(a)),

(iv) the importer knows where the required records and utility lighters are located and that records required to be located in the United States are located there,

(v) arrangements have been made so that any records required to be kept in the United States will be provided to the Commission within 48 hours of a request and any records not kept in the United States will be provided to the Commission within 7 calendar days (§ 1212.17(a)), and

(vi) the information required by § 1212.17(b) to be provided to the Commission's Office of Compliance has been provided.

(b) *Certificate of compliance*. A certificate of compliance must accompany each shipping unit of the product (for example, a case), or otherwise be furnished to any distributor or retailer to whom the product is sold or delivered by the manufacturer, private labeler, or importer. The certificate shall state:

(1) That the product "complies with the Consumer Product Safety Standard for Utility lighters (16 CFR 1212)",

(2) The name and address of the manufacturer or importer issuing the certificate or of the private labeler, and

(3) The date(s) of manufacture and, if different from the address in paragraph (b)(2) of this section, the address of the place of manufacture.

(c) *Labeling*. The manufacturer or importer must label each utility lighter with the following information, which may be in code.

(1) An identification of the period of time, not to exceed 31 days, during which the utility lighter was manufactured.

(2) An identification of the manufacturer of the utility lighter, unless the utility lighter bears a private label. If the utility lighter bears a private label, it shall bear a code mark or other label that will permit the seller of the utility lighter to identify the manufacturer to the purchaser upon request.

§ 1212.13 Certification tests.

(a) *General.* As explained in § 1212.11 of this subpart, certificates of compliance required by section 14(a) of the CPSA, 15 U.S.C. 2063(a), must be based on a reasonable testing program.

(b) *Reasonable testing programs.*

(1) *Requirements.* (i) A reasonable testing program for utility lighters is one that demonstrates with a high degree of assurance that all utility lighters manufactured for sale or distributed in commerce will meet the requirements of the standard, including the requirements of § 1212.3. Manufacturers and importers shall determine the types and frequency of testing for their own reasonable testing programs. A reasonable testing program should be sufficiently stringent that it will detect any variations in production or performance during the production interval that would cause any utility lighters to fail to meet the requirements of the standard.

(ii) All reasonable testing programs shall include (1) qualification tests, which must be performed on surrogates of each model of utility lighter produced, or to be produced, to demonstrate that the product is capable of passing the tests prescribed by the standard (see § 1212.14) and (2) production tests, which must be performed during appropriate production intervals as long as the product is being manufactured (see § 1212.16).

(iii) Corrective action and/or additional testing must be performed whenever certification tests of samples of the product give results that do not provide a high degree of assurance that all utility lighters manufactured during the applicable production interval will pass the tests of the standard.

(2) *Testing by third parties*. At the option of the manufacturer or importer, some or all of the testing of each utility lighter or utility lighter surrogate may be performed by a commercial testing laboratory or other third party. However, the manufacturer or importer must ensure that all certification testing has been properly performed with passing results and that all records of such tests are maintained in accordance with § 1212.17 of this subpart.

§ 1212.14 Qualification testing.

(a) *Testing*. Before any manufacturer or importer of utility lighters distributes utility lighters in commerce in the United States, surrogate utility lighters of each model shall be tested in accordance with § 1212.4, above, to ensure that all such utility lighters comply with the standard. However, if a manufacturer has tested one model of utility lighter, and then wishes to distribute another model of utility lighter that differs from the first model only by differences that would not have an adverse effect on child resistance, the second model need not be tested in accordance with § 1212.4.

(b) *Product modifications*. If any changes are made to a product after initial qualification testing that could adversely affect the ability of the product to meet the requirements of the standard, additional qualification tests must be made on surrogates for the changed product before the changed utility lighters are distributed in commerce.

(c) *Requalification*. If a manufacturer or importer chooses to requalify a utility lighter design after it has been in production, this may be done by following the testing procedures at § 1212.4.

§ 1212.15 Specifications.

(a) *Requirement*. Before any utility lighters that are subject to the standard are distributed in commerce, the manufacturer or importer shall ensure that the surrogate utility lighters used for qualification testing under § 1212.14 are described in a written product specification. (Section 1212.4(c) requires that six surrogate utility lighters be used for testing each 100-child panel.)

(b) *Contents of specification*. The product specification shall include the following information:

(1) A complete description of the utility lighter, including size, shape, weight, fuel, fuel capacity, ignition mechanism, and child-resistant features.

(2) A detailed description of all dimensions, force requirements, or other features that could affect the child-resistance of the utility lighter, including the manufacturer's tolerances for each such dimension or force requirement.

(3) Any further information, including, but not limited to, model names or numbers, necessary to adequately describe the utility lighters and any child-resistant features.

§ 1212.16 Production testing.

(a) *General*. Manufacturers and importers shall test samples of utility lighters subject to the standard as they are manufactured, to demonstrate that the utility lighters meet the specifications, required under § 1212.15, of the surrogate that has been shown by qualification testing to meet the requirements of the standard.

(b) *Types and frequency of testing*. Manufacturers, private labelers, and importers shall determine the types of tests for production testing. Each production test shall be conducted at a production interval short enough to provide a high degree of assurance that, if the samples selected for testing pass the production tests, all other utility lighters produced during the interval will meet the standard.

(c) *Test failure*. (1) *Sale of utility lighters*. If any test yields results which indicate that any utility lighters manufactured during the production interval may not meet the standard, production and distribution in commerce of utility lighters that may not comply with the standard must cease until it is determined that the lighters meet the standard or until

corrective action is taken. (It may be necessary to modify the utility lighters or perform additional tests to ensure that only complying utility lighters are distributed in commerce. Utility lighters from other production intervals having test results showing that utility lighters from that interval comply with the standard could be produced and distributed unless there was some reason to believe that they might not comply with the standard.)

(2) *Corrective actions.* When any production test fails to provide a high degree of assurance that all utility lighters comply with the standard, corrective action must be taken. Corrective action may include changes in the manufacturing process, the assembly process, the equipment used to manufacture the product, or the product's materials or design. The corrective action must provide a high degree of assurance that all utility lighters produced after the corrective action will comply with the standard. If the corrective action changes the product from the surrogate used for qualification testing in a manner that could adversely affect its child-resistance, the utility lighter must undergo new qualification tests in accordance with § 1212.14, above.

§ 1212.17 Recordkeeping and reporting.

(a) Every manufacturer and importer of lighters subject to the standard shall maintain the following records in English on paper, microfiche, or similar media and make such records available to any designated officer or employee of the Commission in accordance with section 16(b) of the Consumer Product Safety Act, 15 U.S.C. 2065(b). Such records must also be kept in the United States and provided to the Commission within 48 hours of receipt of a request from any employee of the Commission, except as provided in subsection (3) below. Legible copies of original records may be used to comply with these requirements.

(1) Records of qualification testing, including a description of the tests, photograph(s) or a video tape for a single pair of children from each 100-child test panel to show how the lighter was held in the tester's hand, and the orientation of the tester's body and hand to the children, during the demonstration, the dates of the tests, the data required by § 1212.4(d), the actual surrogate lighters tested, and the results of the tests, including video tape records, if any. These records shall be kept for a period of 3 years after the production of the particular model to which such tests relate has ceased. If requalification tests are undertaken in accordance with § 1212.14(c) above, the original qualification test results may be discarded 3 years after the requalification testing, and

the requalification test results and surrogates, and the other information required in this subsection for qualifications tests, shall be kept in lieu thereof.

(2) Records of procedures used for production testing required by this subpart B, including a description of the types of tests conducted (in sufficient detail that they may be replicated), the production interval selected, the sampling scheme, and the pass/reject criterion. These records shall be kept for a period of 3 years after production of the lighter has ceased.

(3) Records of production testing, including the test results, the date and location of testing, and records of corrective actions taken, which in turn includes the specific actions taken to improve the design or manufacture or to correct any noncomplying lighter, the date the actions were taken, the test result or failure that triggered the actions, and the additional actions taken to ensure that the corrective action had the intended effect. These records shall be kept for a period of 3 years following the date of testing. Records of production testing results may be kept on paper, microfiche, computer tape, or other retrievable media. Where records are kept on computer tape or other retrievable media, however, the records shall be made available to the Commission on paper copies upon request. A manufacturer or importer of a lighter that is not manufactured in the United States may maintain the production records required by

this paragraph (a)(3) outside the United States, but shall make such records available to the Commission in the United States within 1 week of a request from a Commission employee for access to those records under section 16(b) of the CPSA, 15 U.S.C. 2065(b).

(4) Records of specifications required under § 1212.15 shall be kept for 3 years after production of each lighter model has ceased.

(b) *Reporting*. At least 30 days before it first imports or distributes in commerce any model of lighter subject to the standard, every manufacturer and importer must provide a written report to the Office of Compliance, Consumer Product Safety Commission, 4330 East-West Highway, Room 610, Bethesda, Maryland 20814-4408. Such report shall include:

(1) The name, address, and principal place of business of the manufacturer or importer,

(2) a detailed description of the lighter model and the child-resistant feature(s) used in that model,

(3) a description of the qualification testing, including a description of the surrogate lighters tested (including a description of the point in the operation at which the surrogate will signal operation—*e.g.*, the distance by which a trigger must be moved), the specification of the surrogate lighter required by § 1212.15, a summary of the results of all such tests, the dates

the tests were performed, the location(s) of such tests, and the identity of the organization that conducted the tests,

(4) an identification of the place or places that the lighters were or will be manufactured,

(5) the location(s) where the records required to be maintained by paragraph (a) above are kept, and

(6) a prototype or production unit of that lighter model.

(c) *Confidentiality*. Persons who believe that any information required to be submitted or made available to the Commission is trade secret or otherwise confidential shall request that the information be considered exempt from disclosure by the Commission, in accordance with 16 CFR 1015.18. Requests for confidentiality of records provided to the Commission will be handled in accordance with section 6(a)(2) of the CPSA, 15 U.S.C. 2055(a)(2), the Freedom of Information Act as amended, 5 U.S.C. 552, and the Commission's regulations under that act, 16 CFR 1015.

§ 1212.18 Refusal of Importation

(a) *For noncompliance with reporting and recordkeeping requirements*. The Commission has determined that compliance with the recordkeeping and reporting requirements of this subpart is necessary to ensure that lighters comply with this part 1212. Therefore, pursuant to section 17(g) of the CPSA, 15 U.S.C.

2066(g), the Commission may refuse to permit importation of any lighters with respect to which the manufacturer or importer has not complied with the recordkeeping and reporting requirements of this subpart. Since the records are required to demonstrate that production lighters comply with the specifications for the surrogate, the Commission may refuse importation of lighters if production lighters do not comply with the specifications required by this subpart, or if any other recordkeeping or reporting requirement in this part is violated.

(b) *For noncompliance with this standard or for lack of a certification certificate*. As provided in section 17(a) of the CPSA, 15 U.S.C. 2066(a), products subject to this standard shall be refused admission into the customs territory of the United States if, among other reasons, the product either fails to comply with this standard or is not accompanied by the certificate required by this standard.

Subpart C -- Stockpiling

§ 1212.20 Stockpiling.

(a) *Definition*. "Stockpiling" means to manufacture or import a product that is subject to a consumer product safety rule between the date of issuance of the rule and its effective date

at a rate which is significantly greater than the rate at which such product was produced or imported during a base period.

(b) *Base Period.* For purposes of this rule, "base period" means the most recent calendar year prior to [insert date of publication of a final rule in the FEDERAL REGISTER].

(c) *Prohibited act.* Manufacturers and importers of utility lighters shall not manufacture or import such lighters that do not comply with the requirements of this part between the date of publication of the final rule in the FEDERAL REGISTER and the date that is 365 days after publication of the final rule in the FEDERAL REGISTER, at a rate that is greater than the rate of production or importation during the base period plus 20 per cent of that rate.

(d) *Reporting and recordkeeping requirements.* All firms and persons who make or import utility lighters, after the date of publication of this rule, that do not meet the requirements of this standard, shall supply the Commission's Office of Compliance with:

(1) Supporting information to establish the number of utility lighters made or imported during the base period. This information shall be submitted within 30 days of publication of any final rule.

(2) Supporting information to establish the number of lighters made or imported during the year following publication

of the final rule. This information shall be submitted within 10 days after the lighters are shipped.

(3) Supporting information shall be sufficient to identify the manufacturer or importer, the party to which the lighters were sold, the destination of the lighters, and shall include copies of relevant invoices and importation documents.

Dated: _____, 1998.

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Sadye E. Dunn, Secretary

Consumer Product Safety Commission

TAB B

United States
CONSUMER PRODUCT SAFETY COMMISSION
Washington, D.C. 20207

MEMORANDUM

JUL 14 1998

To :Barbara Jacobson
Project Manager, Multi-purpose Lighters

Through :Warren Prunella, AED, Economic Analysis

From :Robert Franklin
Economist

Subject :Preliminary Regulatory Analysis of Multi-purpose Lighters

Attached is a Preliminary Regulatory Analysis of the draft rule, recommended by the staff, requiring multi-purpose lighters be child resistant.

Multi-Purpose Lighters:
Preliminary Regulatory Analysis

Robert Franklin
Directorate for Economic Analysis
U.S. Consumer Product Safety Commission
July 1998

Executive Summary

Multi-purpose lighters are commonly used to light charcoal and gas grills, pilot lights, camping stoves, candles and similar objects. Most use butane as a fuel source, which is ignited by a piezo crystal. Typically, multi-purpose lighters have a nozzle 4 to 8 inches in length that makes it easier to reach some objects.

As of 1998, an estimated 20 million multi-purpose lighters are being sold annually. Sales have been increasing at a rate of 5 to 10 percent annually. There may be as many as 15 manufacturers and as many more firms that import or privately label multi-purpose lighters. The number of firms is increasing as the market expands. The largest manufacturer has an estimated 90 percent of the market.

The retail prices of multi-purpose lighters have fallen significantly over the last couple of years. Retail prices start at less than $2.50 and most are less than $8.00. However, some more expensive models retail for as much as $40.00. Most are not refillable, although the higher priced models (which account for a very small share of the market) are refillable. There is at least one model currently on the market that is child-resistant as defined in the Safety Standard for Cigarette Lighters. At least one other company is believed to be actively developing a child-resistant model.

Based on available data from 1995 through 1997, the societal costs of fires (deaths, injuries and property damage) resulting from children under the age of 5 operating multi-purpose lighters averaged about $32.7 million annually or about $1.82 for each multi-purpose lighter in use. A rule is expected to reduce such fires by 75 to 84 percent, resulting in a benefit (reduction of societal costs) of $1.37 to $1.53 for each child-resistant multi-purpose lighter sold.

Manufacturers would incur costs to comply with the requirements of the proposed rule. The costs of designing, testing, retooling, and producing child-resistant multi-purpose lighters is expected to be about $0.40 per unit. The retail prices of multi-purpose lighter may increase by about $0.80 per unit as a result of a rule.

Assuming sales of 20 million multi-purpose lighters annually, the net benefit to consumers will be about $11.4 million. This amount would increase if sales of multi-purpose lighters increase. There are several alternatives the Commission could consider, including taking no action, relying on a voluntary standard, establishing labeling requirements, broadening the scope, and narrowing the scope. However, none of these alternatives would be expected to increase the net benefits or increase the level of consumer safety.

Introduction

The U.S. Consumer Product Safety Commission (CPSC) is considering a rule that addresses the risk of residential fires started by children under the age of 5 years playing with multi-purpose lighters. A multi-purpose lighter is a hand-held, portable device with a fuel source that is commonly used to ignite another fuel or other object, such as gas and charcoal grills, stoves, fireplaces, pilot lights, camping stoves, range burners, and candles, among other things. The proposed rule does not cover matches or lighters intended primarily to ignite tobacco products, which are subject to the Safety Standard for Cigarette Lighters, 16 CFR 1210. The proposed rule also would not apply to products marketed primarily for use in soldering, brazing, welding, other repair work, or to products not intended for household use.

The CPSC is aware of 117 fires caused by children under age 5 playing with multi-purpose lighters that occurred in the three-year period from 1995 to 1997.[1] These fires resulted in 17 deaths and 46 injuries (See Table 1). Because these are only the known fires, the actual number of incidents is likely to be higher.

The CPSC initiated this rulemaking proceeding after it was petitioned in February 1996, to amend the safety standard for cigarette lighters (codified at 16 CFR 1210) to include the Scripto Aim 'n Flame disposable butane lighter within the scope of that standard. The Commission published an Advance Notice of Proposed Rulemaking on January 16, 1997. The proposed rule recommended by the staff would cover the Scripto Aim 'n Flame as well as other multi-purpose lighters.

The proposed rule is published under the authority of the Consumer Product Safety Act ("CPSA"), 15 U.S.C. 2051-2084. This report provides (1) a summary of the requirements of the proposed rule (2) background product and market information and (3) a discussion of the likely benefits and costs of the proposed rule and reasonable alternatives to the proposed rule.

In addition to the requirements of the CPSA, the Commission is required by the Regulatory Flexibility Act of 1980 (RFA) to address and give particular attention to the economic effects of the proposed rule on small entities. The RFA requires that an agency publish an initial regulatory flexibility analysis if the agency does not certify that the proposed rule will not have a significant economic impact on a substantial number of small entities.

The Commission is required by the National Environmental Policy Act of 1969 (NEPA) to consider potential environmental impacts of any proposed rule. This report also contains a preliminary environmental impact review.

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[1]The analysis is limited to this 3 year period because the data available for earlier years is less complete.

Requirements of the Proposed Rule

The proposed rule addresses the risk of death and injury caused by children under the age of 5 playing with multi-purpose lighters. Manufacturers or importers of products meeting the definition of "multi-purpose lighters" would have to certify that their products comply with the rule and provide evidence of a reasonable testing program to support the certification. The proposed rule would contain a protocol that provides specific minimum requirements and features of a testing program that establish that multi-purpose lighters are child-resistant. The proposed rule also establishes certain minimum record keeping and reporting obligations for manufacturers, importers, and distributors. The proposed effective date of the rule is one year after the date of publication of a final rule in the Federal Register. All multi-purpose lighters manufactured in the U.S. or imported after that date will have to comply with the requirements of the rule.

The test protocol is intended to determine the percentage of children in a specified age range that could be expected to be able operate the lighter. The protocol requires that modified, non-fuel-containing surrogates be used in the tests in place of production lighters. These surrogates must operate in the same manner as production lighters. If a child succeeds in operating the surrogate a visual or audible signal is produced. If at least 85 percent of the children in the test panel are unable to operate the surrogate lighter, the production lighter is considered to comply with the requirements.

Product and Market Information

The Product

One feature that typically distinguishes multi-purpose lighters from other types of lighters used around the home, such as cigarette lighters, is an extended nozzle from which the flame is emitted. The nozzle is typically four to eight inches in length, but in some cases may be 18 inches or more. Some higher-priced models have flexible nozzles that can be bent to reach difficult places. Most multi-purpose lighters use butane fuel. While some multi-purpose lighters are refillable, the models that are dominant in the market are not refillable.

The lighter is operated by applying pressure to a trigger, button, or sliding mechanism. This action releases the butane fuel and activates a spark at the end of the nozzle that ignites the fuel. Because the fuel must travel from the reservoir, usually located in the handle, to the end of the nozzle, the spark is sometimes activated before the fuel reaches the end of the nozzle. When this happens the fuel will not be ignited. This often occurs when the user attempts to operate the lighter too rapidly. The user of a multi-purpose lighter often must make several attempts before successfully producing a flame. This problem is less common in other types of lighters, such as cigarette lighters, since the fuel reservoir is much closer to the spark. Some higher-priced multi-purpose lighters overcome this problem by using a battery that causes a spark to be continuously generated, ensuring the fuel will be ignited.

Multi-purpose lighters can be used for a variety of purposes around the home. Common uses include lighting charcoal or gas grills, camping stoves and lanterns, pilot lights on gas appliances, and gas range burners. Multi-purpose lighters are also used for lighting candles, fires in wood or gas fireplaces as well as other uses. Industry sources state that the general shape and length of multi-purpose lighters make them less suitable for lighting tobacco products.

Sales and Useful Product Life

Multi-purpose lighters were introduced by Scripto-Tokai in 1985. According to Scripto-Tokai, one million units were sold the first year. 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 or more 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 multiple purpose lighter depends on the frequency with, and purpose for, which it is used. If a typical multi-purpose lighter contains enough fuel for an average of 1,000 lights[2], a multi-purpose lighter that is used several times a day would be expected to 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 for 2 or more years. The useful life of a multi-purpose lighter may also be limited if its operating mechanisms break or wear out before the usable fuel is exhausted, or if the lighter is lost. While as many as 20 million lighters were 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.

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[2]What 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 first have to be lit, the gas for the grill turned on, and then the gas would have to build up to the level where it is ignited.

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

Manufacturers

Although the precise number is unknown, industry sources estimate that there may be as many as 15 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 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 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. The high-end lighters probably have less than one percent of the market for multi-purpose lighters.

BIC Corporation recently introduced a multi-purpose lighter that they report to be child-resistant. 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. Since BIC is a major manufacturer of cigarette lighters with a national distribution network already established, its entry into the market for multi-purpose lighters may absorb a significant share of the market from other manufacturers. At the same time, BIC's promotion of its product nationally may increase the total size of the market for multi-purpose lighters. Therefore, even though the market share of some manufacturers may be reduced by BIC's entry into the market, the effect on each manufacturer's total sales of multi-purpose lighters is less certain since the market for multi-purpose lighters is likely to grow.

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

Substitutes for Multi-purpose Lighters

Several products are reasonable substitutes for multi-purpose lighters. Indeed, these substitutes are probably used by more households than use multi-purpose lighters. The most likely and versatile substitute for multi-purpose lighters are probably ordinary box or book matches. 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 matches

(either book or box matches). Cigarette lighters can also be used for many of the purposes for which multi-purpose lighters are used.

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 box matches is estimated to be less than 0.3 cents.[5] Other types of matches, such as book matches, cost less per light. The cost per light of cigarette lighters is about 0.1 cents.

Regulatory Analysis

Potential Benefits of the Proposed Rule

The proposed rule is intended to reduce fires resulting from young children playing with multi-purpose lighters. The benefits to society of the proposed rule are the expected reduction in fires and 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 who are 5 years of age and over, since some portion of these children may not be able to operate a child-resistant multi-purpose lighter.

From 1995 through 1997, the Commission is aware of 117 fires started by children under age 5 years playing with multi-purpose lighters. These incidents, which are summarized in Table 1 below, resulted in 17 deaths, 46 injuries, and substantial property damage. The analysis is limited to this 3-year period because the data available for other years is less complete. If we assume 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 $85 million. Of the 46 non-fatal 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 non-hospitalized burn injury was estimated to be $15,000.[6] These estimates include medical treatment, lost income, and pain and suffering. Using these estimates, the total cost of known injuries from Table 1 is approximately $11.3 million (12 x $898,000 plus 34 x $15,000). The property damage associated with cigarette lighter fires from childplay was estimated to be an

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[4]If 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.

[5]Based on retail prices observed in the Washington, DC area; 750 box matches typically sold for $2.05 or $0.0027 each.

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

average of $15,000 per incident. Assuming the incidents with multi-purpose lighters are similar to the those resulting from cigarette lighters, the total property damage associated with the incidents in Table 1 is estimated to be at least $1.8 million ($15,000 x 117 fires).

Table 1. Fire Losses Resulting from Children Under 5 Operating Multi-Purpose Lighters

Year	1995	1996	1997	Total
Fires	16	54	47	117
Deaths	5	8	4	17
Injuries	8	30	8	46

The total societal cost of the known incidents for the three years, including the costs associated with deaths, injuries, and property damage is about $98.1 million. This averages to about $32.7 million per year. It is important to note that these cost estimates are based only on the incidents reported to CPSC, not on national fire loss estimates. There are likely to be other incidents of which CPSC is not aware. Therefore, the $32.7 million figure is probably an underestimate of the average annual societal cost of fires that occurred between 1995 and 1997.

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 provided 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 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.[7] Assuming that this reduces the number of fires started with multi-purpose lighters by children under the age of 5 by the same percentage, the societal costs of the fires will be reduced. For example, during the 1995 through 1997 time frame, societal costs would have been reduced by $24.5 million to $27.5 million annually had all multi-purpose lighters been child-resistant, based only on the fire incident data collected by the Commission. The actual annual savings are expected to be

[7]For 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].

higher because there are likely to be incidents that have occurred of which the CPSC is unaware.

The expected benefits of the proposed rule will be even higher if manufacturers achieve a child resistance level greater than 85 percent to ensure that their designs will achieve at least the minimum level of child resistance required by the proposed rule. 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 previously estimated.

Potential Costs of the Proposed Rule

There will be several types of costs associated with the proposed rule. Manufacturers will have to devote some resources to the development or modification of technology to produce child-resistant multi-purpose lighters. Before being marketed the lighters must be tested and certified to the new standard. It is also possible that 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.

Manufacturing Costs

Manufacturers will have to modify their products to comply with the proposed rule. In general, costs that would be incurred by the manufacturers 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 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 provided firm estimates of these costs. One major manufacturer, BIC, has introduced a child-resistant multi-purpose lighter. However, because BIC previously did not manufacture a non-child-resistant lighter, they were 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 as little as $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 costs could be as high 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.[8] If, however, it is assumed that there are 15 manufacturers and that each invests an average of $2 million to develop market complying lighters, the total industry 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.[9] For a manufacturer with a large market share (i.e., selling several million units or more a year), the cost per unit of the development costs 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.

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 we were unable to get reliable

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[8]This estimate is similar to the estimate used in evaluating the cigarette lighter standard.

[9]If 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 period approximately 230 million lighters would be sold. $30 million/230 million = $0.13/unit.

estimates, some industry sources indicated that they believed that these costs would be relatively low, probably less than $0.25 per unit.

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 for 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 building surrogates and 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.[10] On average, these costs are expected to add about $0.02 per unit to the cost of producing multi-purpose lighters ($450,000/20 million units).

Multi-purpose lighters are sold in countries other than the United States. Some manufacturers may develop lighters that meet the requirements of the proposed rule for distribution in the United States, but continue to distribute the current, non-child-resistant models in other countries. Thus, some manufacturers may incur the incremental costs associated with producing multiple lines of similar products. These costs could include extra administrative costs required to maintain different lines and the incremental costs of producing different lines of similar products, such as using different molds or different assembly steps. These costs would, however, be mitigated if similar or identical standards were adopted by other countries.

Some manufacturers of small, portable, butane torches, sometimes called micro-torches, may incur costs as a result of the proposed rule. If the marketing of these products is such that one would conclude that their primary use was the same as a multi-purpose lighter, they would likely fall within the scope of this rule and would have to be child-resistant. On the other hand, if one would conclude that their primary use was for other purposes, such as soldering, they would not fall under the scope of this rule. Based on the retail prices of these products and the outlets through which they have been observed selling, we believe that most are not being sold as direct substitutes for multi-purpose lighters. However, some manufacturers may change product labels or marketing material and not list such uses as lighting grills or camp fires. Because the proposed rule will apply only to products introduced

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[10]If we assume 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 these costs are incurred annually, in fact, these costs are likely to be lower in subsequent years.

into commerce one year after the publication of a final rule, the cost of changing the labels and/or marketing material is expected to be slight.

In total, the proposed rule will likely increase the cost of manufacturing multi-purpose lighters by about $0.40 per unit.[11] This estimate is in the range provided by the Lighter Association in response to the ANPR, of $0.25 to $0.75 per unit. Furthermore, based on conversations with some manufacturers, the high end estimates provided by the Lighter Association may have been based on the erroneous assumption that the proposed rule would contain additional provisions that are not in the proposed rule, such as requirements covering the reliability of achieving ignition. Therefore, the middle and low end of the estimates provided by the Lighter Association are probably more reasonable.

The proposed rule contains anti-stockpiling provisions, authorized by section 9(g)(2) of the CPSA, to prohibit excessive production or importation of noncomplying lighters during the 12-month period between the publication date and the effective date of the proposed rule. The provision would limit the production or importation of non-complying products to 120 percent of the amount produced or imported in the most recent calendar year before the issuance of the final rule. While the anti-stockpiling provision should have little impact on the market as a whole, it may, however, have an adverse impact on small importers or manufacturers that were just entering the market for multi-purpose lighters. Such firms may have had low sales volume in their first year or two of operation and thus their base volume would be low. In the absence of the anti-stockpiling provisions, they may have been able to increase their sales volume by a greater proportion than would be allowed under the anti-stockpiling provision.

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, at least one manufacturer has already entered the market with models that would meet the requirements of the proposed rule and at least one other firm is believed to be actively developing a child-resistant lighter. Therefore, the proposed rule is not expected to have any significant impact on competition. Moreover, other firms are expected to enter the market for multi-purpose lighters, and thereby increase competition, as the market expands.

With the exception of BIC, which manufacturers its multi-purpose lighters in South Carolina, and one smaller manufacturer, most multi-purpose lighters are imported. To the

[11]This 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.

extent that BIC has developed a child-resistant multi-purpose lighter before other manufacturers have, they may benefit from the proposed rule. However, any differential impact is likely to be slight and short-lived. Based on the experience with child-resistant cigarette lighters, an effective date 12 months after the publication of a final rule should give manufacturers sufficient time to develop child-resistant multi-purpose lighters. Therefore, other manufacturers are expected to have child-resistant multi-purpose lighters developed and ready to market before the effective date of the final rule. Some may enter the market with child-resistant models earlier.

Impact on Small Business

The Commission gives special consideration to the potential impact of its rules on small businesses. There may be about 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, some number of the other firms may be considered to be small businesses. It is possible that 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, most 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 the smaller importers and private labelers sales. Therefore, even if a small importer or private labeler stopped importing or distributing its own line multi-purpose lighters, it is not likely to suffer a significant adverse effect.

The staff examined the information available on 24 firms that were identified as being manufacturers, importers, or private labelers of multi-purpose lighters. Of these, 13 could be considered to be small businesses. Of the 13 small businesses, one is believed to manufacture its own lighters and 9 are believed to be importers. Sufficient information was not available on the other three firms to make these determinations.

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, it is also possible that utility derived from child-resistant lighters may be decreased if complying lighters are more difficult to operate.

The increased cost of manufacturing multi-purpose lighters will, for the most part, ultimately be borne by consumers. Generally, the increased cost of production will be passed

on to the consumer in the form of higher prices. 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. If the actual incremental cost of manufacturing is lower, the impact on consumers could be lower. If the cost increase is $0.25/unit, then assuming a 100 percent markup at retail, the recommended rule may increase retail prices by about $0.50. However, some manufacturers may be unable to pass all of the incremental costs directly to the consumers. This may be especially true in the case of the up-front research and development costs. In these cases the costs may be indirectly borne by consumers in such forms as generally higher prices on the range of products produced by the manufacturer, or in the form of reduced earnings on investments in the company.

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 has happened with child-resistant cigarette lighters, we expect that manufacturers will be able to develop child-resistant multi-purpose lighters that are only slightly more difficult to operate than the non-child-resistant lighters. Therefore, the number of consumers who stop using multi-purpose lighters because the child-resistant mechanisms is expected to be small. Moreover, even if some consumers do switch to other products, the risk of fire is not expected to increase significantly. Most cigarette lighters must already meet the same child-resistance standard being proposed for multi-purpose lighters. Although consumers that switch to using matches (as opposed to using child-resistant cigarette or multi-purpose lighters) may increase the risk of child play fires somewhat, matches are probably inherently more child-resistant than non-child-resistant multi-purpose lighters. Previously, the staff determined that non-child-resistant cigarette lighters were 1.4 times as likely as matches to be involved in childplay fires and 3.9 times as likely to be involved in a childplay death.[12] 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.

Estimated Net Benefits of the Proposed Rule

As previously stated, between 1995 and 1997 the total societal costs of fires known to have been started by young children playing with multi-purpose lighters was approximately $98.1 million. This is probably an underestimate, since it only includes the cases of which the staff is aware. Thus, the actual societal costs during those years was likely higher. During the same time period, an estimated 54 million multi-purpose lighters were sold and available for use. The societal costs of the fires started by young children attempting to operate multi-purpose lighters is, therefore, about $1.82 per lighter ($98.1 million/54 million lighters). The

[12]Smith, 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).

proposed rule is expected to reduce this cost by 75 to 84 percent. Therefore, the expected societal benefit of the proposed rule in terms of reduced fires, deaths, injuries, and property damage is expected to be $1.37 to $1.53 per complying lighter sold.

As discussed above, 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. Therefore, if we assume that sales of multi-purpose lighters remain the same, the net benefit to consumers of the proposed rule is expected to be at least $0.57 per unit ($1.37 - $0.80). Based on current sales of approximately 20 million units per year the proposed rule would result in an annual net benefit to consumers of at least $11.4 million (20 million x $0.57) annually. If sales of multi-purpose lighters continue to increase at current rates (5 to 10 percent annually), the annual net benefit will also increase by a similar percentage.

If, however, sales of multi-purpose fall, the net benefits to consumers would be somewhat less. The reduced sales would result in higher per-unit costs, since amortization of the research and development costs, described earlier, would have to be spread over fewer units. Furthermore, there would be some reduction in *consumer surplus* associated with the use of multi-purpose lighters.[13] Consumer surplus would be reduced by an amount equal to the difference in the utility that consumers would have received from the multi-purpose lighters that will not be purchased due to the price increase and the utility that consumers receive from the substitute products.

If the costs to manufacture multi-purpose lighters that complied with the proposed rule were significantly higher than estimated, the net benefits would be reduced. Assuming a 100-percent markup over manufacturing costs, the manufacturer's costs attributed to the proposed rule would have to be as high as $0.68 to $0.76 per unit (as opposed to the $.040 per unit estimated earlier) before the expected net benefits to consumers would be eliminated.[14]

The actual level of benefits observed could be higher if some multi-purpose lighters are stored with the ON/OFF switch in the "ON" position. CPSC tested the child resistance of 7 different, non-child-resistant lighters. The models tested were found to have a baseline child-resistance ranging from 4 percent to 41 percent. The expected effectiveness of the rule would thus be 75 percent to 84 percent. However, CPSC tests were conducted with the switches in the "OFF" position. In other words, the test subjects first had to turn the switch to the "ON" position before they could operate the surrogates. It is possible that the baseline child resistance would have been lower had the test been conducted with the switch initially

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[13]Consumer surplus is a concept that refers to the difference between what consumers pay for a product and the maximum price they might be willing to pay; it represents a benefit for which the consumer does not actually pay.

[14]A 100 percent markup on a cost of $0.68 would increase retail prices by about $1.36/unit; approximately the low end per unit benefit estimate. A 100 percent markup on a cost of $0.76 would increase retail prices by about $1.52; approximately the high end per unit benefit estimate.

set to the "ON" position. If a significant number of consumers commonly store multi-purpose lighters with the switch in the ON position, the effective level of child resistance of multi-purpose lighters currently in use may be lower than indicated by CPSC's baseline testing. This would have the impact of increasing the effectiveness of the rule and the value of the net benefits.

Alternatives to the Proposed Rule

There are several significant alternatives to the proposed rule. These alternatives include not taking any action, having only labeling requirements, deferring to voluntary standards, and varying the scope of the rule.

No Action

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 is issued, some manufacturers may 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 it would be substantially less than 100 percent. Perhaps only 2 or 3 firms would offer such products. If child-resistant lighters captured 20 percent of the market then (assuming sales of 20 million units) the annual benefits would be approximately $5.5 million ($1.37 x 4 million), compared to costs of $3.2 million ($0.80 x 4 million). This would result in net benefits of approximately $2.3 million annually. Under more optimistic assumptions, if the child-resistant lighters captured 80 percent of the market the benefits to society would be approximately $21.9 million (1.37 x 16 million) annually compared to costs of $12.8 million. This would result in net benefits of approximately $9.1 million annually.[15] Under both assumptions, the net benefits are less than the $11.4 million estimated for the proposed rule.[16]

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[15]80 percent of 20 million units is 16 million units. The cost to consumers would be $0.80 x 16 million units or $12.8 million annually. The benefits would be $23 million ($1.28 x 16 million).

[16]The net benefits could be greater if consumers in households where small children were likely to be exposed were more likely to purchase child-resistant models than households where children were unlikely to be exposed. However, the extent to which this would happen is not known.

Rely on a Voluntary Standard

No voluntary standard for the child resistance of multi-purpose lighters exists, and we are not aware of any group developing a voluntary standard for these products. However, the Commission could work with the appropriate standards-setting organizations to establish such a voluntary standard. If most of the current manufacturers agreed to conform to the standard, the costs and benefits could approach those projected under the proposed rule. This assumes, of course, that the voluntary standard is substantially similar to the proposed rule and that conformance with the voluntary standard is very high. However, if the market for multi-purpose lighters is very price competitive, the market share for child-resistant lighters would be uncertain, since their retail price may be higher and the manufacturers will be relying on a non-price product differentiation (child resistance) to sell their product. If some firms did not conform, the expected net benefits (in terms of reduced fires, deaths, and injuries) would be lower than under the mandatory standard. Because many of the products are imports, the conformance to a voluntary standard may be low.

Labeling Requirements

The Commission could chose not to issue a performance standard, but instead opt to require additional warning labels on multi-purpose lighters. However, the Federal Hazardous Substances Act already requires multi-purpose lighters be labeled "Keep out of reach of children." The effectiveness of additional labeling would likely be low.

Broadening the Scope

The Commission could broaden the scope of the rule to include small, portable butane torches, sometimes called micro-torches. Micro-torches share some features with multi-purpose lighters. The base of both products are of similar size, although micro-torches usually do not have the extended nozzle that multi-purpose lighters have. The fuel supply in several models of micro-torches is provided by a butane disposable lighter that is placed inside the base of the torch. However, the flame from a micro-torch is much hotter than the flame from a multi-purpose lighter. The micro-torches emit flames that may be as hot as 2,400°F, about twice the temperature of the flames of most multi-purpose lighters. Micro-torches generally retail for $20 or more.

The staff concluded that micro-torches represent a different product class than multi-purpose lighters. Although micro-torches can be used for some of the same purposes as multi-purpose lighters, they are generally sold for uses such as welding, brazing, soldering, and other repairs. Some are sold with attachments such as soldering irons and flame spreaders. Whereas the most likely substitutes for multi-purpose lighters are cigarette lighters or matches, the most likely substitutes for micro-torches are other types of torches. It is unknown whether child-resistant features would affect the consumer utility from micro-torches. Furthermore, at

this time, the staff is aware of only one incident involving micro-torches involving childplay. Therefore, including these products in the scope of the rule would increase the costs of the proposed rule without evidence that any benefits would accrue to consumers.

Narrowing the Scope

The staff considered exempting the more expensive lighters from the 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 evidence of involvement in childplay fires. However, the CPSC does not have evidence that the more expensive multi-purpose lighters are less likely to be involved in childplay fires than the less expensive models. There is no evidence that the more expensive multi-purpose lighters, those retailing for more than $20, 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 not sufficient 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.

Preliminary Environmental Assessment

Pursuant to the National Environmental Policy Act and in accordance with CPSC's procedures, consideration has been given to the potential environmental effects of the proposed rule. Less than 1 percent of the non-child-resistant multi-purpose lighters that are sold in this country are manufactured domestically. One manufacturer produces lighters domestically, but these lighters are already child-resistant.

The proposed rule is not expected to significantly alter the amount of materials, energy, or waste generated during production of the lighters. Nor is the proposed rule expected to cause manufacturers to shift production to other countries or locations. Molds and other tools used by manufacturers in the production of multi-purpose lighters or their components are periodically replaced. Potentially, the proposed rule may cause some manufacturers to replace the molds and other tools earlier than they would have otherwise. However, an effective date of one year from the publication date of a final rule should allow most manufacturers time to plan and minimize any impact.

The proposed rule does not require any recall of existing non-child-resistant lighters; therefore, there are no disposal issues with regard to the non-child-resistant lighters in use when a final rule becomes effective. The proposed rule, if issued, is not expected to affect the manner in which multi-purpose lighters are packaged for sale, or to affect the amount of butane or other fuel used in the operation of the lighters.

The staff concludes, from the available information, that the proposed rule would not significantly affect raw material usage, air or water quality, manufacturing processes, or disposal practices in a way that would significantly impact the environment.

Conclusion

The proposed rule would have substantial net benefits to consumers. Under conservative estimates of the costs and benefits, the net benefit is expected to be approximately $0.57 per lighter sold. At current levels of sales, this would result in annual net benefits of $11.4 million, which should increase as sales of multi-purpose lighters increase. 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 rule, the number of fires started by young children playing with multi-purpose lighters should be at least 75 percent lower than what would be expected in the absence of the proposed rule.

There is at least one model of multi-purpose lighter on the market now that complies with the provisions of 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, there should be no disruption in the supply of multi-purpose lighters.

It is possible that 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. This required investment could be more than $1 million per manufacturer. Some small manufacturers or importers may stop producing multi-purpose lighters for the U.S. market, at least temporarily. However, since the market for multi-purpose lighters is growing, other firms can be expected to enter the market as the market expands. Therefore, any adverse impact on competition in the market would be small and temporary. Any adverse impacts would be further mitigated if similar requirements 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 would significantly increase expected net benefits. In the cases where expected net benefits are unaffected, none of the alternatives would significantly increase the overall level of safety to consumers.

The proposed rule is not expected to have any significant impact on raw material usage, air or water quality, manufacturing processes, or disposal practices in a way that would significantly impact the environment.

Table 2. Summary of Annual Benefits and Costs of Alternatives to Proposed Rule (based on annual sales of 20 million units)

Alternative	Benefits	Costs	Net Benefits
Proposed Rule	$27.4 million	$16 million	$11.4 million
No Action **If CR capture 20%** **If CR capture 80%**	 $5.5 million $21.9 million	 $3.2 million $12.8 million	 $2.3 million $9.1 million
Voluntary Standard (assuming 95 % conformance)	$26.0 million	$15.2 million	$10.8 million
Broadening the Scope	uncertain if any increase in benefits over the proposed rule	costs would be greater than under the proposed rule	net benefits would likely be less than under the proposed rule.
Narrowing the Scope	benefits would likely be lower than under the proposed rule	costs would likely be lower than under the proposed rule	effect on net benefits is uncertain

TAB C

May 8, 1998

Ms. Barbara J. Jacobson
Project Manager
Directorate for Epidemiology and Health Sciences
U.S. Consumer Product Safety Commission
4330 East - West Highway
Bethesda, MD 20814-4408

Re: BIC® SureStart™ Utility Lighter

Dear Ms. Jacobson:

As you are well aware, the BIC SureStart™ child-resistant utility lighter does not fall within the scope of 16 CFR 1210 (Safety Standard for Cigarette Lighters).

However, as a leader in the development of child-resistant lighters, BIC took a proactive role in the design of our first utility lighter, which we launched in March 1998. In line with BIC's proactive approach, the BIC SureStart utility lighter was designed with a child-resistant feature and surrogate utility lighters were tested in strict accordance with the test protocols and requirements set forth in 16 CFR 1210.4. Test results confirm that the BIC SureStart utility lighter is resistant to successful operation by in excess of 85 percent of the child-test panel when tested in the manner prescribed by 16 CFR 1210.4.

Please advise if we can be of further assistance.

Very truly yours,

BIC CORPORATION

Thomas M. Kelleher
Senior Vice President - Administration,
General Counsel and Secretary

TMK\lac

BIC Corporation Milford, Connecticut 06460 Phone 203 783-2000

TAB D

United States
CONSUMER PRODUCT SAFETY COMMISSION
Washington, D.C. 20207

MEMORANDUM

DATE: JUL 9 1998

TO : Barbara Jacobson, EH
Project Manager, Multi-Purpose Lighter Petition

Through: Mary Ann Danello, Ph.D., AED, Directorate for Epidemiology and Health Sciences SA (for MAD)

FROM : Linda E. Smith, EHHA LES

SUBJECT: Fire Incidents Involving Multi-Purpose Lighters

This memorandum provides data on fires caused by children playing with multi-purpose, utility, lighters. These data are provided in support of the staff evaluation of a child-resistant standard for multi-purpose lighters.

Background

The Safety Standard for Cigarette Lighters required child-resistant features for cigarette lighters manufactured or imported after July 12, 1994. This standard is expected to be effective in reducing cigarette lighter fires started by young children, primarily those under age five.

In 1995, the most recent year for which national fire loss estimates are available, there were an estimated 8,200 residential structure fires caused by children, of all ages, playing with lighters (Table 1). These fires resulted in 180 deaths and 1,220 injuries in 1995. Fire and injury estimates were lower for 1995 than for any of the four preceding years. Death estimates tend to fluctuate year-to-year due to their smaller numbers. Compared to 1994, when the Standard went into effect, 1995 data indicated that there was a greater reduction in child play lighter fires than in residential structure fires overall, reductions of 23 and 6 percent respectively. This could be the first indication of a reduction attributable to the lighter standard. However, other factors, such as general fire prevention efforts, also could be involved. Child play fires involving matches also decreased in 1995, a reduction of 15 percent compared to 1994.

Table 1. Estimated Residential Structure Fires, Deaths, and Injuries Caused by Children Playing with Lighters, 1991-1995.

Year	Fires	Deaths	Injuries
1991	8,500	240	1,430
1992	9,300	200	1,530
1993	9,900	170	1,600
1994	10,600	230	1,560
1995	8,200	180	1,220
Total	46,500	1,020	7,340
Mean	9,300	200	1,470

Note: These data include fires started by children under age five and by older children.

Source: Based on data from the National Fire Incident Reporting System, U.S. Fire Administration, and the National Fire Protection Association.[1]

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 U.S. Consumer Product Safety Commission (CPSC) currently is conducting a Cigarette Lighter Evaluation Study that will identify both the age of the child and the lighter type, i.e., cigarette or multi-purpose, involved in child play fires. Data collection for this Study, based on reports from participating fire departments, began in November 1997 and will continue through the fall of 1998. Fire estimates covering the Study period will require 1998 NFIRS data, which are not expected to be available until 2000 due to the time lag involved in local jurisdictions forwarding data to the U.S. Fire Administration.

Methodology

Lacking national fire loss estimates for multi-purpose lighters, CPSC data bases were searched for the time period starting with January 1985 to the present, to identify

[1] Estimates were derived by computing the percentages of NFIRS residential structure fires, deaths and injuries that involved children playing with lighters and multiplying those percentages by the total number of U.S. residential structure fires, deaths, and injuries estimated from the National Fire Protection Association annual survey. Fire estimates were rounded to the nearest hundred. Death and injury estimates were rounded to the nearest ten.

fires caused by children playing with multi-purpose lighters. Data sources included consumer complaints, newspaper clippings, hospital emergency room-treated injuries, fire department reports, and investigation reports. Also included are incidents reported for the Cigarette Lighter Evaluation Study and incidents submitted with public comments on the Multi-Purpose Lighter Advance Notice of Proposed Rulemaking, January 16, 1997.

Results

EHHA identified a total of 220 fires reportedly started by children playing with multi-purpose lighters from January 1988[2] to the present. These fires resulted in a total of 39 deaths and 81 injuries (Table 2). Of these incidents, children under age five ignited 158 fires (76 percent of those where age of the fire starter was known). These 158 fires resulted in 23 deaths and 58 injuries (59 percent and 78 percent of deaths and injuries, respectively, where age of the fire starter was known). Children age five and older ignited 51 fires that resulted in 16 deaths and 16 injuries. An additional 11 fires that resulted in 7 injuries were described as being caused by child play but the ages of the children who ignited the fires were not cited.

These data reflect frequency counts of incidents reported to CPSC. Therefore, they are considered a conservative indication of the extent of the total problem. Multi-purpose lighter fires often are reported as "lighter" fires, then identified as incidents involving multi-purpose lighters only after further investigation.

Table 2. Fires, Deaths, and Injuries Caused by Children Playing with Multi-Purpose Lighters, by Age of the Child Who Ignited the Fire, 1/1/88 - 4/15/98.

Loss Measure	Total	Age (Years) of Fire Starter		
		<5	5+	Unk.
Fires	220	158	51	11
Deaths	39	23	16	--
Injuries	81	58	16	7

Source: Consumer complaints, newspaper clippings, hospital emergency room-treated injuries, fire department reports, and investigation reports.

Since the regulatory action being considered is directed primarily to fires ignited by children under age five, the characteristics associated with the two age groups, fire starters under age five versus age five and older, will be discussed separately.

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[2] No fire incidents involving multi-purpose lighters were identified for the period 1985 - 1987.

A) Fires Caused by Children Under Age Five

Number of Incidents by Year

Among the 158 fires started by children under age five playing with multi-purpose lighters from January 1988 to the present, little change occurred in the annual number of fires until 1995 (Table 3). Part of the increase in 1995 and later years is believed to be related to CPSC's increased efforts to obtain more information on fires caused by children playing with lighters, to monitor the effectiveness of the 1994 Standard. When investigated, some fires were found to involve multi-purpose lighters. However, an increase in sales of multi-purpose lighters also has occurred.[3]

Table 3. Fires, Deaths, and Injuries Caused by Children Under Age Five Playing with Multi-Purpose Lighters, by Year.

Year	Fires	Deaths	Injuries
1988	3	-	-
1989	-	-	-
1990	2	-	1
1991	2	-	-
1992	4	1	1
1993	7	3	4
1994	7	-	-
1995	16	5	8
1996	54	8	30
1997	47	4	8
1998*	16	2	6
Total	**158**	**23**	**58**

* Reports received through April 15, 1998.

Source: Consumer complaints, newspaper clippings, hospital emergency room-treated injuries, fire department reports, and investigation reports.

[3] Robert Franklin, EC, Multi-Purpose Lighters: Preliminary Regulatory Analysis, June 1998.

Fatalities, Injuries, and Property Loss

Nineteen of the 23 fatalities were children under age 15 (Table 4). Sixteen were under age 5; 3 were between the ages of 5 and 14. Eleven of the children who died had started the fires themselves. Five children who died were siblings of the fire starters. Three of the four adults were mothers of the children who started the fires. The four remaining fatalities were mostly other relatives or visitors to the home. One fatality occurred in a home child care setting.

Fourteen of the 58 people who were injured required hospitalization. Several of the 14 were treated for extensive second and third degree burns requiring long-term treatment (Attachment A). One 10-month-old child, burned over 80-90 percent of his body, lost all of his toes and most of his fingers. Most of the non-hospitalized persons who were injured received burns, smoke inhalation, or lacerations for which they were treated and released.

Table 4. Fatalities That Occurred in Multi-Purpose Lighter Fires Caused by a Child Under Age Five, by Age Group and Relationship to the Child Who Ignited the Fire, 1/1/88 - 4/15/98.

Relationship to Fire Starter	Age Group (Years) of Fatalities			
	Total	< 5	5-14	15+
Total	23	16	3	4
Self	11	11	-	-
Sibling	5	4	1	-
Mother	3	-	-	3
Other	4	1	2	1

Source: Consumer complaints, newspaper clippings, hospital emergency room-treated injuries, fire department reports, and investigation reports.

In addition to the fatalities and injuries that occurred, most fires also resulted in property damage. Many reports did not specify the amount of property loss; other reports cited relatively minor property loss. However, 31 of the 158 reports cited property damage of $50,000 or more.

Ages of the Children Who Ignited the Fires

Among the 158 multi-purpose lighter fires started by children under age 5, 129 (82%) of the children were either age 3 or 4 (Table 5). Three children were under age 2, indicating that even some very young children are able to operate these products.

Most reports did not specify the child's age in terms of years and months. Among the 62 fires that involved 4-year-olds, only 15 incidents cited their ages in terms of months. Seven children were ages 4 years and 3 months or younger. Eight children were ages 4 years and 4 months or older.[4]

Table 5. Age Distribution of Children Under Age Five Who Ignited a Fire While Playing with a Multi-Purpose Lighter, 1/1/88 - 4/15/98.

Age (Years) of Fire Starter	Total	< 2	2	3	4	< 5*
Number	158	3	21	67	62	5

* Children were under age five but exact year of age was unreported.

Source: Consumer complaints, newspaper clippings, hospital emergency room-treated injuries, fire department reports, and investigation reports.

Product Brand Names

Review of the 158 fire incidents indicated that a product brand name was reported in 72 incidents. Of these, 66 (92 percent) involved one manufacturer. Each of the other six incidents that contained a reported brand name cited one of five other manufacturers. Several reports cited the color of the product, but gave no information on brand name. Almost half the reports stated only that a multi-purpose lighter was involved.

B. Fires Caused by Children Age Five and Older

Number of Incidents by Year

As among fires caused by younger children, little change in the number of identified child play fires occurred until 1995 (Table 6). Among the 51 fires caused by children age 5 and over, 42 occurred since January 1995. This observed change is

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[4] The test protocol in the Safety Standard for Cigarette Lighters uses panels of children between the ages of 3 years and 6 months through 4 years and 3 months to establish the child resistance of the lighters.

believed, in part, to be related to CPSC's increased efforts to obtain more information about lighter fires.

Table 6. Fires, Deaths, and Injuries Caused by Children Age Five and Older Playing with Multi-Purpose Lighters, by Year.

Year	Fires	Deaths	Injuries
1988	1	-	1
1989	-	-	-
1990	-	-	-
1991	1	-	1
1992	3	1	1
1993	1	-	1
1994	3	3	4
1995	8	4	2
1996	11	1	-
1997	19	5	5
1998*	4	2	1
Total	**51**	**16**	**16**

*Reports received through April 15, 1998.

Source: Consumer complaints, newspaper clippings, hospital emergency room-treated injuries, fire department reports, and investigation reports.

Fatalities, Injuries, and Property Loss

Eleven of the 16 fatalities in fires caused by this age group were children; 5 were under age 5, and 6 were between the ages of 5 and 14 (Table 7). Five fatalities were the children who caused the fire. The remaining fatalities were other family members, when the relationship to the fire starter was reported.

Table 7. Fatalities That Occurred in Multi-Purpose Lighter Fires Caused by a Child Age Five or Older, by Age Group and Relationship to the Child Who Ignited the Fire, 1/1/88 - 4/15/98.

Total	Age Group (Years) of Fatalities				
	Total	< 5	5-14	15+	Unk
	16	5	6	3	2

Source: Consumer complaints, newspaper clippings, hospital emergency room-treated injuries, fire department reports, and investigation reports.

Among the 16 reported injuries, at least five involved burns serious enough to be hospitalized. Eight fires resulted in property damage of $50,000 or more. Many reports did not indicate amount of property loss.

Ages of the Children Who Started the Fires

Among the 51 children age five and older who ignited a multi-purpose lighter fire, more than half (31) were age five or six (Table 8). The oldest age reported was 14. There is no uniform definition in the fire community of the maximum age at which a child can cause a child play fire. However, a child play fire is commonly defined as a situation involving a child playing, without knowledge that fire can do damage.

Table 8. Age Distribution of Children Age Five and Older Who Ignited a Fire While Playing with a Multi-Purpose Lighter, 1/1/88-4/14/98.

Age (Years) of Fire Starter	Total	5	6	7	8	9	10+
Number	51	19	12	7	4	1	8

Source: Consumer complaints, newspaper clippings, hospital emergency room-treated injuries, fire department reports, and investigation reports.

Summary

CPSC data indicate that children playing with multi-purpose lighters have caused a minimum of 220 fires that resulted in 39 deaths and 81 injuries, from 1988 to the present. Of these, children under age five caused 158 fires that resulted in 23 deaths and 58 injuries. Sixteen of the 23 fatalities were children under age 5. The regulatory action being considered is directed to younger fire starters, those under age

5. These data are considered a conservative indication of the extent of the hazard due to the nature of the incident identification process discussed earlier.

A distinctive characteristic of these fires is the severity of the injuries. Among the fires caused by children under age five, three children received burns over 70% or more of their bodies, burns that will require extensive long-term treatment. Several others received burns that were less extensive, but serious enough to require hospitalization.

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 five who died in home fires annually between 1991 and 1995, were in fires started by a child playing, usually with lighters or matches.[5] The data presented in this memorandum indicate that children playing with multi-purpose lighters have become a part of this problem.

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[5] John R. Hall, Jr., "Patterns of Fire Casualties in Home Fires by Age and Sex, 1991-1995," National Fire Protection Association, January 1998, p. 14.

Attachment A. Description of Hospitalized Injuries in Fires Caused by Children Under Age Five Playing with Multi-Purpose Lighters

No.	Date	Age of Victim	Injury/Treatment Description
1	3/5/92	2 yrs	Burns to back & upper right thigh. Hospitalized, seen later for treatment of scarring.
2	1/22/95	12 mos	Hospitalized 1 month for 2nd & 3rd degree burns to arms, chin, chest. Will require skin grafts about age 15.
3	1/27/95	2 yrs	10 days in hospital.
4	4/4/96	15 mos	3rd deg burns to 70% of body. Will need several surgeries & skin grafts.
5	5/26/96	18 mos	3rd deg. burns to 70% of body.
6	6/13/96	49 yrs	Burns to 10% of body.
7	6/14/96	4 yrs	3rd deg. burn to 50% of upper body.
8	11/9/96	3 yrs	2nd deg. burn to 50% of back, also burns to arm & hand.
9	12/21/96	4 mos	2nd & 3rd deg. burns to hand & arm. Lost tips of 2 fingers.
10	12/24/96	18 yrs	Lacerations & burns.
11	1/6/97	6 yrs	2nd deg burns, knee to armpit.
12	1/16/97	adult	Burns to arms & smoke inhalation.
13	1/20/97	10 mos	Burns to 80-90% of body. Lost all fingers & thumb on one hand, 2 fingers & thumb on other hand. Lost all toes on both feet and one ear. Bones growing through skin.
14	1/16/98	4 yrs	Hospitalized several days for smoke inhalation.

Source: CPSC Investigation Reports