UNION CARBIDE CALIDRIA ASBESTOS

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PLAINTIFF'S EXHIBIT

UC-5249

Leon -

Please notify your customers & send Copies of this report.

T.

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Aftex - Tom Smith
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From The Desk Of

TOM NORRIS

done 1-25-78

PLAINTIFF'S EXHIBIT 18 4-23-98 Gripp

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DEC 29 1977
H & C SAN FRANCISCO

December 22, 1977

Mr. Leon Persson
Harrisons & Crosfield
6285 Christie Ave
Emeryville, Ca 94608

Dear Mr. Persson

Because of the extensive publicity and since we have attempted to keep many of you directly informed, you should not be surprised that the Consumer Product Safety Commission has finally published their ban on "Consumer Patching Compounds Containing Respirable, Free-Form Asbestos". A copy of the Federal Register notice, dated December 15, 1977, is enclosed for your information and file.

To assist you in understanding the extent and effect of the CPSC action, we call your attention to the following items:

1. The CPSC ban covers only consumer products and does not cover industrial products or products (including consumer products) for export. For more details on the use of asbestos in industrial products, please see paragraph 2 below and on the use of asbestos in products for export, please see paragraph 3 below.

2. The ban only applies to "consumer patching compounds" which contain "intentionally added asbestos" from which "respirable free-form asbestos fibers" can become airborne under reasonably foreseeable conditions of use.

   In the ban, a "consumer" product is defined very broadly as follows:

   > 1304.1(c) "Only consumer products are subject to this regulation. Patching compounds which are consumer products include those which a consumer can purchase. Merely labeling a patching compound for industrial use would not exclude such articles from the ban. If the sale or use of the product by consumers is facilitated, it is subject to the ban. Patching compounds which are labeled as, marketed, and sold solely for industrial use in non-consumer environments are not subject to the ban. In addition to those products which can be sold directly to consumers, the ban applies to patching compounds containing respirable free-form asbestos which are used in residences, schools, hospitals, public buildings or other areas where consumers have customary access."

"Intentionally added asbestos" is specified in 1304.3(f) as asbestos which is:

> "(1) added deliberately as an ingredient intended to impart specific characteristics; or, (2) contained in the final product as the result of knowingly using a raw material containing asbestos. Whenever a manufacturer finds out that the finished product contains asbestos, the manufacturer will be considered as knowingly using a raw material containing asbestos, unless the manufacturer takes steps to reduce the asbestos to the maximum extent feasible."

Banned consumer products which are mentioned specifically as containing respirable, free-form asbestos fiber include drywall spackling compounds and tape joint compounds (commonly known as joint cement or tape joint mud). The ban does not cover caulks, sealants, and similar materials which are not available in a dry form and which are not ordinarily sanded.

3. The ban shall not apply to any consumer product if (1) it can be shown that such product is manufactured, sold, or held for sale for export from the United States (or that such product was imported for export), unless such consumer product is in fact distributed in commerce for use in the United States, and (2) such consumer product when distributed in commerce, or any container in which it is enclosed when so distributed, bears a stamp or label stating that such consumer product is intended for export; except that this chapter shall apply to any consumer product manufactured for sale, offered for sale, or sold for shipment to any installation of the United States located outside of the United States."

4. After January 16, 1978, the banned products cannot be manufactured or shipped from the manufacturer's facility.

5. After June 12, 1978, the banned products cannot be sold or used, regardless of the date of manufacture.

Union Carbide Corporation and others have spent considerable amounts of time, effort and money in an unsuccessful attempt to oppose or modify the CPSC action. We do not believe that the ban was justified by the evidence presented and we have presented oral and written testimony in support of our beliefs. A copy of our most recent letter is enclosed.

Although subsequent action may be taken, there is little possibility that the CPSC will make any beneficial changes, at least not in the near future.

We appreciate your past business and look forward to continuing to supply you with asbestos if you make compounds for industrial use or export.

Let us know if you have any questions, or if we can be of any assistance.

Very truly yours,

John L. Myers

John L. Myers
Marketing Manager

UNION CARBIDE CORPORATION
METALS DIVISION
P.O. BOX 579 · 4625 ROYAL AVE., NIAGARA FALLS, NEW YORK 14302

December 14, 1977

Individual letters sent to:

The Honorable S. John Byington, Chairman
Barbara Franklin , Commissioner
R. David Pittle, Commissioner
Consumer Products Safety Commission
1111 - 18th Street, NW
Washington, DC 20207

Although we are aware that the Commission has moved to publish a ban on the consumer use of joint taping compounds containing free-form asbestos, we wish to reiterate for the record our contention that the finding of "unreasonable risk" is not supported by the available evidence and we question whether "due process" was properly applied in this case.

During the Commission's consideration of the ban, the Union Carbide Corporation has provided extensive technical data on the exposure to free-form asbestos fiber during the use of these materials. These data have included:

1. A presentation and analysis of all of the commercial use data available, including data from a number of OSHA compliance inspections.

2. Detailed studies of a large and a small consumer installation of drywall. It should be noted these were the only exposure data presented during the proceedings that bear directly on the ban in question.

The Union Carbide work was checked by two independent laboratories and there is certainly no reason to doubt the levels found in the OSHA compliance inspections. In spite of this, your staff has continued to quote an analysis of risk based on exposures found in one commercial study of only 30-60 minutes duration that was conducted at vaguely defined operating conditions. This latter study showed exposures that were much higher than all of the other results including the OSHA data.

The staff also based its estimate on an assumption of four extensive consumer exposures over the period of a year. While we have no objection to this as a maximum case, provided the appropriate exposure levels are used, risks are also quoted for five years of exposure at the same time. This number of exposures is far beyond that which can be expected for consumers. In view of the statutory requirement for a showing of "unreasonable risk," we feel it is extremely important to draw these points to your attention.

In the installation of drywall, three successive applications of taping compound are made about a day apart. The compound, when dry, may be sanded after the second and third application. On this basis, two extended exposures can occur during the complete finishing, or extensive remodeling, of a full room. The

sponds to finishing two rooms. Although this extent of exposure is not by any means experienced by the entire population of the country, it appears to be a reasonable upper limit for estimation purposes as long as it is recognized as such. The further extension of this to the five years cited would correspond to consumer contact with active finishing operation for about ten (10) rooms. Exposure of this extent is so rare that is is not relevant and should not be used in the estimation of risk.

Let us assume that the four exposures in a year are taken as correct and that Bayard modification of the Enterline model is also accepted. The excess risk estimate of 10 deaths per million over a 40-year period presented by the staff assumes an 8-hour time-weighted average exposure of 10 fibers/cc >5μ. This is based on a test where an unidentified number of professionals conducted pole- and handsanding for about 15 minutes each, mixed an undefined amount of dry compound, and dry swept under unspecified conditions. The handsanding exposure, which is the procedure used by consumers, averaged 5.3 fibers/cc, but much higher levels were present for short periods during mixing and sweeping so the higher level was assumed. The 15-minute exposure level was also assumed to occur over a full eight hours which is far longer than occurs in consumer use. The value of 10 fibers/cc >5μ for eight hours is clearly much too high and, in fact, is not even supported by the handsanding data of the work upon which it is based.

The OSHA compliance inspection data presented to the Commission showed a range of 0.1 to 4 fibers/cc during sanding and 0.6-2.7 fibers/cc during cleanup. Using the highest values found for two hours of sanding and one-half hour of cleanup, which is a reasonable approximation of consumer operations, and a value of 0.5 fibers/cc in the room during the remainder of the day, the eight-hour time-weighted average becomes 1.5 fibers/cc >5μ. The Bayard model predicts a risk of 0.0016 excess deaths over a 40-year period per million persons exposed. If the consumer data for the installation of drywall in a large room are used, the eight-hour time-weighted average is only 0.2 fibers/cc >5μ. The corresponding risk for the finishing of two rooms over a year is something less than 0.0000001 excess deaths per million over a 40-year period.

Application of the values of 0.0016 per million estimated from the OSHA compliance information and the value of less than 0.0000001 per million predicted from the actual consumer exposure data to the present U.S. population of about 250 million persons yields calculated excess deaths of 0.4 and less than 0.00003, respectively, over a 40-year time span. It should be noted particularly that the value of 0.4 is based on the maximum not the average exposure values reported by OSHA, and the assumption that the entire population is exposed at this maximum level during substantial installation of drywall in two rooms. To the extent that these conditions are not met, the risk would be less.

The Consumer Product Safety Act requires a finding of an "unreasonable risk" as a basis for the banning action by the Commission. The following listing of U.S. deaths from various causes is provided for reference:

Type of Accident or Cause	U.S. Deaths*
Bites and Stings	53 (1974)
Lightning	112 (1974)
Suffocation by Food Ingestion	2181 (1974)
Poisoning in the Home	4300 (1975)
Fires in the Home	5100 (1975)
Falls in the Home	8400 (1975)

*From 1976 edition of "Accident Facts" published by the National Safety Council.

As discussed above, the highest excess of risk estimate from the OSHA exposure data was 0.4 asbestos-related deaths over a 40-year period. This is almost 300 times less than the chances of being struck by lightning in a single year and approximately 5,000-20,000 times less than the annual risk from such common consumer hazards as food ingestion, poisoning, fires and falls.

We submit that the risk from consumer exposure to asbestos during joint taping is not an "unreasonable risk" within the meaning of the statute. The evidence available to the Commission contradicts rather than suppors the finding that such a risk exists.

Very truly yours,

Signed by John L. Myers for

H. B. Rhodes, Ph.D.
Technology Manager

3230

J. F. Collins
Vice-President

HBR/rmm

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FEDERAL REGISTER

THURSDAY, DECEMBER 15, 1977

PART III



CONSUMER PRODUCT SAFETY COMMISSION

CONSUMER PATCHING COMPOUNDS AND ARTIFICIAL EMBERIZING MATERIALS (EMBERS AND ASH) CONTAINING RESPIRABLE FREE-FORM ASBESTOS

Banned Hazardous Products

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[6355-01]

Title 16—Commercial Practices

CHAPTER II—CONSUMER PRODUCT SAFETY COMMISSION

SUBCHAPTER B—CONSUMER PRODUCT SAFETY ACT REGULATIONS

PART 1145—REGULATION OF PRODUCTS SUBJECT TO OTHER ACTS UNDER THE CONSUMER PRODUCT SAFETY ACT

Consumer Patching Compounds and Artificial Emberizing Materials (Embers and Ash) Containing Respirable Free-Form Asbestos

AGENCY: Consumer Product Safety Commission.

ACTION: Final rules.

SUMMARY: The Commission issues final rules determining that it is in the public interest to regulate consumer patching compounds and artificial emberizing materials (embers and ash) containing respirable, free-form asbestos, for the purpose of addressing the risk of cancer associated with inhalation of asbestos fibers, under the Consumer Product Safety Act (CPSA) rather than under the Federal Hazardous Substance Act (FHSA). According to the CPSA, a risk of injury that could be eliminated or reduced to a sufficient extent under the FHSA may not be regulated under the CPSA, unless the Commission finds by rule that it is in the public interest to do so.

EFFECTIVE DATES: For consumer patching compounds containing respirable, free-form asbestos, this rule becomes effective on January 16, 1978. For artificial emberizing materials (embers and ash) containing respirable free-form asbestos, this rule becomes effective December 15, 1977.

FOR FURTHER INFORMATION CONTACT:

Charles M. Jacobson, Compliance and Enforcement Regulatory Management Division, Consumer Product Safety Commission, Washington, D.C. 20207, 301-492-6400.

SUPPLEMENTARY INFORMATION:

BACKGROUND

On July 29, 1977, by publication of a notice in the FEDERAL REGISTER (42 FR 38782), the Commission proposed a rule under section 30(d) of the Consumer Product Safety Act (CPSA) (15 U.S.C. 2079(d)) as amended, that it is in the public interest to regulate consumer patching compounds and artificial emberizing materials (embers and ash) containing respirable free-form asbestos under the CPSA rather than under the Federal Hazardous Substances Act (FHSA), (15 U.S.C. 1261-1274). Section 30(d) reads:

> A risk of injury which is associated with a consumer product and which could be eliminated or reduced to a sufficient extent under the Federal Hazardous Substances Act * * may be regulated under the CPSA only if the Commission by rule finds that it is in the public interest to regulate such risk of injury under [the CPSA.]

Also on July 29, 1977, the Commission proposed in the FEDERAL REGISTER (42 FR 38783) a regulation under the CPSA that would declare as banned hazardous products, consumer patching compounds and artificial emberizing materials (embers and ash) containing respirable free-form asbestos.

The Commission's reasons in the proposed section 30(d) rule for proceeding under the CPSA rather than the FHSA are:

1. The rulemaking proceedings for regulation of these products under the FHSA are likely to be lengthy and resource-consuming.

2. Rulemaking proceedings under the CPSA are governed by provisions of the Administrative Procedure Act (5 U.S.C. 553), and are informal and nonadversarial in nature and thus it would be more likely that participation of the public, including consumers, would be forthcoming in rulemaking proceedings under the CPSA.

3. The Commission believes that civil penalty provisions available under the CPSA against persons who knowingly violate the CPSA may provide additional incentive for compliance under the CPSA. The FHSA does not provide the remedy of civil penalties.

COMMENTS

No comments were received by the Commission which deal directly with the proposed section 30(d) rule. In comments on the proposed ban, however, several persons in the marketing chain commented approvingly on the decision to regulate under the CPSA because CPSA does not require repurchase of banned hazardous products by manufacturers, distributors, and retailers. On the other hand, several groups of consumer-oriented interests noted that they would have preferred regulation under FHSA because FHSA provides for such repurchase.

As noted in the proposed section 30(d) rule, the Commission is aware that regulation under CPSA would preclude mandated repurchase of banned hazardous products. However, the CPSA does not preclude voluntary arrangements for repurchase back up the distribution chain. Moreover, the advantages enumerated above, particularly, the advantage of having a final banning regulation in force without having to first provide for lengthy adjudicatory proceedings, appears to the Commission to be more beneficial to consumer health and safety than the refunds consumers would have under FHSA. In the matter of artificial emberizing materials, repurchase under the FHSA would have meant that many persons in the chain of distribution would have handled these materials rather than disposing of them quickly in order to avoid additional exposure.

Accordingly, the Commission finds that for the health and safety of consumers, it is in the public interest to regulate consumer patching compounds and artificial emberizing materials containing respirable free-form asbestos under the CPSA rather than the FHSA. Therefore, pursuant to section 30(d) of the CPSA, Pub. L. 92-573, 86 Stat. 1231, as amended, 90 Stat. 510, 15 U.S.C. 2079(d), the Commission amends Title 16, Chapter II, Subchapter B, by adding new §§ 1145.4 and 1145.5.

§ 1145.4 Consumer patching compounds containing respirable free-form asbestos; risk of cancer associated with inhalation of asbestos fibers.

(a) The Commission finds that it is in the public interest to regulate the risk of cancer associated with inhalation of asbestos fibers from consumer patching compounds containing respirable, free-form asbestos under the Consumer Product Safety Act (CPSA) rather than under the Federal Hazardous Substances Act (FHSA) because of the desirability of avoiding possibly lengthy resource-consuming, inefficient rulemaking proceedings under the FHSA and because of the availability of civil penalties under the CPSA for knowing noncompliance.

(b) Therefore, consumer patching compounds containing respirable free-form asbestos are regulated under CPSA.

§ 1145.5 Emberizing materials (embers and ash) containing respirable free-form asbestos; risk of cancer associated with inhalation of asbestos fibers.

(a) The Commission finds that it is in the public interest to regulate the risk of cancer associated with inhalation of asbestos fibers from artificial emberizing materials (embers and ash) containing respirable free-form asbestos under the Consumer Product Safety Act (CPSA) rather than under the Federal Hazardous Substances Act (FHSA) because of the desirability of avoiding possibly lengthy, resource-consuming, inefficient rulemaking proceedings under the FHSA, and because of the availability of civil penalties under the CPSA for knowing noncompliance.

(b) Therefore, artificial emberizing materials (embers and ash) containing respirable free-form asbestos are regulated under the CPSA.

Effective dates: Section 1145.4 becomes effective January 16, 1978. Section 1145.5 becomes effective December 15, 1977.

(Sec. 30(d); Pub. L. 92-573, 86 Stat. 1231 as amended, 90 Stat. 510 (15 U.S.C. 2079 (d)).)

Dated: December 12, 1977.

SHELDON D. BUTTS,
Assistant Secretary, Consumer Product Safety Commission.

[FR Doc.77-35744 Filed 12-12-77,11:32 am]

[6355-01]

CONSUMER PATCHING COMPOUNDS AND ARTIFICIAL EMBERIZING MATERIALS (EMBERS AND ASH) CONTAINING RESPIRABLE FREE-FORM ASBESTOS

Establishment As Banned Hazardous Products

AGENCY: Consumer Product Safety Commission.

Union Carbide trial exhibit UC-5249: Compilation: Union Carbide Notice to Customer Leon Persson on the CPSC B... Published by AsbestosClaims.Law
ACL Doc 19729 · Page 8 of 19 asbestosclaims.law/library/19729/8

ACTION: Final rules.

SUMMARY: In this document the Commission declares that the following products containing respirable free-form asbestos are banned hazardous products under the Consumer Product Safety Act: (1) Consumer patching compounds used to join or repair interior walls and ceilings (mixing of the product before it is applied, sanding of the product after it is dried, and cleanup after completion of the process, release asbestos fibers that can be inhaled); and (2) artificial emberizing materials (embers and ash) used in fireplaces to simulate live embers and ash (ordinary air currents in the household move asbestos fibers that can be inhaled). The Commission issues this ban in order to reduce or eliminate the unreasonable risk of injury from certain types of cancer that may result from inhaling asbestos fibers released during the use of these products.

EFFECTIVE DATES: (1) For consumer patching compounds containing respirable free-form asbestos, the regulation issued below at section 1304, applies to products manufactured or initially introduced into commerce on January 16, 1978, or after that date. For all other consumer patching compounds containing respirable free-form asbestos, no matter when manufactured or initially introduced into commerce, the regulation at section 1304 applies on June 12, 1978, and after that date. (2) For artificial emberizing materials containing respirable free-form asbestos, the regulation issued below at section 1305 applies to products in commerce on December 15, 1977, or after that date.

FOR FURTHER INFORMATION CONTACT:

Charles M. Jacobson, Consumer Product Safety Commission, Compliance and Enforcement Regulatory Management Division, Washington, D.C. 20207, 301–492–6400.

SUPPLEMENTARY INFORMATION:

Background

On July 29, 1977, by publication of a notice in the FEDERAL REGISTER (42 FR 38783), the Commission proposed rules to declare that consumer patching compounds and artificial emberizing materials (embers and ash) containing respirable free-form asbestos, are banned hazardous products under the Consumer Product Safety Act (CPSA). These rules were proposed because the Commission preliminarily determined that an unreasonable risk of injury of certain types of cancer, such as mesothelioma and lung cancer, is associated with inhalable asbestos found in these products. The information on which the Commission's preliminary determination was based is set forth in the proposal. The data in the proposal are incorporated herein by reference. The bibliography of 50 references cited in the proposal are repeated in this preamble for convenience. Numbers 51 and over refer to additional information considered in issuing this rule.

On July 29, 1977, by publication of a notice in the FEDERAL REGISTER (42 FR 38782), the Commission also proposed a rule finding that it is in the public interest to regulate consumer patching compounds and artificial emberizing materials containing respirable free-form asbestos under the Consumer Product Safety Act (CPSA) rather than under the Federal Hazardous Substances Act (FHSA). Section 30(d) of the CPSA (15 U.S.C. 2079(d)) requires the Commission to make such a finding by rule, before regulating under the CPSA, a risk of injury which could be reduced or eliminated to a sufficient extent under the FHSA. The Commission issues this rule elsewhere in the FEDERAL REGISTER. The data in these proposals are incorporated herein, by reference.

Section 9(a)(2) of the CPSA requires that, in addition to providing an opportunity for making written submissions, the Commission shall provide interested persons with an opportunity to make oral presentations of data, views or arguments relating to proposals to ban. Oral presentations on the bans were heard by the Commission an August 15, 1977. Views on the bans are discussed below under Comments on Proposal.

In order to have sufficient time to review all the responses to the banning proposal, including late responses, on October 4, 1977 (42 FR 53970), the Commission extended until November 28, 1977, the time in which it must either publish a consumer product safety rule or withdraw the proposals to ban. This date was further extended until December 12, 1977, by notice published in the FEDERAL REGISTER on November 29, 1977 (42 FR 60752).

Comments on Proposal

Oral views on the proposal were presented by 7 persons on August 15, 1977 with 3 representing consumer groups and 4 representing manufacturers. In addition, the Commission received 30 written comments which represented 17 manufacturers and 2 distributors; 4 federal agencies; 3 public interest groups; 2 concerned citizens; a supplier of raw materials; and a chemical research and development firm. Among the 10 commenters who expressed support for the ban were 5 manufacturers of patching compounds, 3 federal agencies and 2 public interest groups.

The significant issues raised by the oral and written comments are set forth below.

A. *Scope and definition.* The proposal states that consumer patching compounds are those that are customarily produced or distributed for sale to or for the personal use, consumption or enjoyment of consumers in or around a household or residence, a school, in recreation or otherwise. The Commission considered in the proposal that patching compounds for application in these consumer environments are either distributed for sale to consumers or are for the personal use or enjoyment of consumers. Moreover, information available to the Commission indicated that most patching compounds for commercial/industrial use are distributed in such ways that consumers have access to these products (51) either by purchase or for their use and enjoyment. Therefore, the Commission concluded that these are consumer products subject to the Commission's jurisdiction unless such patching compounds are labeled as, marketed, and sold solely for industrial use.

1. *Patching compounds as consumer products.* (a) Several commenters requested a clearer definition of consumer patching compound and a manufacturer questioned the boundaries of the term "consumer product." The manufacturer states that the definition of consumer patching compounds in the ban has been improperly broadened to include jurisdiction over building materials. He believes that the CPSA permits regulation only of articles used within the home, not the structure of the home itself or the integral parts of the structure. He states that since consumers have access to patching compounds containing respirable free-form asbestos through most marketing channels, these products can be considered consumer products under the CPSA. Thus, he believes that it was inappropriate to cite a recent case, ("U.S.A. v. Anaconda Co., et al.," Misc. No. 77–0024, (D.D.C.) June 15, 1977) which indicates that the presence of a product in a consumer environment can help decide whether that product is a consumer product under the CPSA. Therefore, the commenter urges "the Commission in its final regulation to delete" the paragraph on "Anaconda" case in order to "avoid the creation of an unnecessary conflict • • • within the regulation itself."

In response to this comment, the Commission notes that the paragraph which cites the case in question is not in the proposed regulation but in that part of the preamble which explains the regulation. In the preamble, the Commission cited "Anaconda" not in reliance on the case as a basis for regulation but to show how the case interprets the definition of consumer product at section 3(a)(1) of the CPSA which reads,

> The term "consumer product" means any article, or component part thereof, produced or distributed (i) for sale to a consumer for use in or around a permanent or temporary household or residence, a school, in recreation, or otherwise, or (ii) for the personal use, consumption or enjoyment of a consumer in or around a permanent or temporary household or residence, a school, in recreation, or otherwise;

Although courts have not yet reached a definitive decision on the coverage of the term "consumer product," the Commission believes that the statute and legislative history, by themselves, afford sufficient authority for Commission jurisdiction over the defined product and its use in consumer environments. It appears to the Commission that the definition of consumer patching compound in the proposal falls within section 3(a)(1)

Union Carbide trial exhibit UC-5249: Compilation: Union Carbide Notice to Customer Leon Persson on the CPSC B... Published by AsbestosClaims.Law
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of the CPSA and that the "Anaconda" case underscores the definition.

In order to minimize any confusion, a new subsection (c) has been added to § 1304.1 Scope and Application, to show the coverage permitted by the CPSA. That subsection reads:

(c) Only consumer products are subject to this regulation. Patching compounds which are consumer products are those which a consumer can purchase. Merely labeling a patching compound for industrial use would not exclude such articles from the ban. If the sale or use of the product by consumers is facilitated, it is subject to the ban. Patching compounds which are labeled as, marketed, and sold solely for industrial use in non-consumer environments are not subject to the ban. In addition to those products which can be sold directly to consumers, the ban applies to patching compounds containing respirable free-form asbestos which are used in residences, schools, hospitals, public buildings or other areas where consumers have customary access.

It is clear from this language that use of patching compounds in consumer environments determines their status as consumer products, whether the patching compounds are applied professionally or by consumers. And, although the hazard may be greater for professional users of patching compounds because of their repeated exposure, residual dust from sanding during construction or renovation is also a hazard to consumers who may not apply the patching compounds themselves (38).

(b) A manufacturer who supports the ban states that he would have no way of policing the sale of different size containers. Therefore, although he packages 1-gallon size of patching compound for sale to consumers and a 5-gallon size for commercial-industrial use, he believes the ban should apply to all sizes.

Given the availability of patching compounds to consumers through most marketing channels, the Commission agrees that it would be burdensome for manufacturers and distributors to assure that large sizes of patching compounds, which they claim to be industrial products, are not sold to consumers. Moreover, as noted in the preceding response, merely labeling a patching compound for non-consumer use would not exclude such articles from the ban. Where a manufacturer, distributor or retailer fosters or facilitates the product's sale to or use by consumers, the product is considered a consumer product and is within the scope of this ban. This comment indicates that it may be exceedingly difficult to differentiate a patching compound that is a consumer product from one that might be termed a product for industrial use only. Nevertheless, as stated in section 1304.1(c) Scope and Application, "patching compounds which are labeled as, marketed, and sold solely for industrial use in non-consumer environments are not subject to the ban."

2. *Regulation of patching compounds by OSHA.* A manufacturer of dry-wall joint compounds states that the commercial and professional market for such compounds is already regulated by the Occupational Safety and Health Administration of the Department of Labor (OSHA) and, since the consumer part of his business is small, the ban should not apply to compounds for commercial and industrial use.

As is indicated herein, any patching compound containing respirable free-form asbestos that consumers have access to in consumer environments or may purchase would be subject to the ban. Therefore, such products, although they may be for industrial/commercial use, are also considered to be consumer products.

On the subject of regulation of these products by OSHA, the Commission notes that section 31 of the CPSA provides that the Commission shall have no authority to regulate any risk of injury associated with a consumer product if such risk could be eliminated or reduced to a sufficient extent by actions taken under the Occupational Safety and Health Act of 1970. Under that Act, OSHA has issued regulations which specify the airborne concentrations of asbestos fibers to which any employee may be exposed (29 CFR 1910.93a). However, OSHA regulations apply only to workplaces and not to places where consumers would use the products themselves. Therefore, the Commission considers that actions to regulate this product which can be taken under the Occupational Safety and Health Act of 1970, cannot reduce or eliminate to a sufficient extent the unreasonable risk of injury to consumers that is associated with the product. Accordingly, the Commission regulates this product under the CPSA.

3. *Type of patching compound covered by the ban.* A manufacturer of caulking, sealing, glazing, adhesive and coating products believes the reputation of his product could be adversely affected by the ban. Although the Commission has stated that the banned product presents a hazard because it is mixed, sanded and moved about during cleanup operations, the commenter believes that the definition of the banned product should specifically exclude the above-listed products because they are designed to remain flexible and are, therefore, not generally sanded. Therefore, the commenter requests that the definition be amended to cover only those compounds, "which after drying are required to be or are normally sanded to a smooth finish."

In response to this comment, the Commission notes that the patching compounds subject to the ban are those that contain asbestos which can be inhaled as a result of mixing, sanding and cleanup operations. Therefore, patching materials such as those listed by the commenter which are not sanded after application because they are intended to remain flexible, would be exempt if they are not available in dry, ready-to-mix form. The Commission believes it is clear that only consumer patching compounds containing asbestos which can be inhaled when the product is in dry form or being sanded are subject to the ban and therefore declines in this case to amend the definition of patching compound at § 1304.3(d).

4. *Asbestos terminology for both products.* (a) In discussing the proposed definition of "asbestos," a writer from a chemical research and development center states that "silica" is a chemical compound and as a compound is not a component of asbestos. He suggests that the word "silicon" be used to denote that it is a single element which is present in asbestos.

The Commission concurs that the term "silica" should not be used, but rather it should be "silicates," since asbestos is a generic term used to describe a number of naturally-occurring hydrated mineral silicates. Therefore, the word "silica" is deleted from the definition of asbestos in §§ 1304.3(b) and 1305.3(b) below and the term "hydrated silicates" is substituted therefor.

(b) A public interest group takes issue with the definition of asbestos used in the proposal and urges the Commission to adopt a definition of asbestos proposed by OSHA in 1975. The definition of asbestos used in the Commission proposal is based on the definition used by the Bureau of Mines (56). The commenter believes that the OSHA proposed definition could help resolve disputes over the presence or absence of asbestos in consumer products.

As the commenter pointed out, several federal agencies with responsibilities for regulating asbestos (EPA, FDA, OSHA, CPSC) are working toward a uniform definition of asbestos. At a recent workshop, July 18–20, 1977, at the National Bureau of Standards on asbestos definition and identification problems, it was agreed that there should be a uniform definition of asbestos which would be mineralogically correct as well as reflect health concerns. However, there was clearly a lack of agreement on a definition and an interagency agreement on a definition has not yet been reached.

The definition which the commenter urges the Commission to adopt was proposed by OSHA on October 19, 1975; it has not yet been finalized and is subject to change. The OSHA proposed definition reflects OSHA's concern for the health aspects of asbestos and is based on experimental findings associated with fiber morphology (size and shape). The Bureau of Mines also seeks to encourage uniform definition. Their definition which was used by the Commission is based on mineralogical composition. This has been adopted in final form by that agency.

The Commission has reviewed much of the available data on the characteristics of asbestiform mineral fibers and their nonasbestos counterparts. From these data, it would appear that use of the proposed OSHA definition could also include nonfibrous cleavage fragments and other particulate substances, as well as other mineral fibers within the proposed dimension range that are not asbestos fibers. While the Commission is interested in arriving at an unambiguous uniform definition of asbestos, there is not

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t enough evidence to base a definition of "asbestos" on fiber morphology. Therefore, the Commission believes the proposed definition should not be changed in the final rule. As circumstances warrant, the definition could be amended at a later date.

5. *Asbestos contamination in patching compounds.* Several manufacturers expressed concern that all patching compounds would be subject to the ban rather than only those compounds to which asbestos has been intentionally added. They point out that asbestos is ubiquitous in the environment and that traces of asbestos may be present as a contaminant in other minerals that are mined in areas of serpentine rock. One commenter suggests that the Commission consider permitting patching compounds which contain such naturally occurring contaminants. Other commenters suggest that a percentage of asbestos contamination by weight be permitted. The lowest percentage suggested by one commenter is 1 percent because the Environmental Protection Agency (EPA) permits the presence of 1 percent asbestos by weight in spray-on asbestos insulation and fire proofing.

As noted in the proposal, the Commission is aware that asbestos is present in the environment. Further, the Commission does not wish to ban all consumer patching compounds in which traces of asbestos are present as a contaminant rather than as an intentionally added substance.

The suggestion that the Commission permit contamination of 1 percent by weight, however, appears to be inappropriate for consumer patching compounds because consumers would not be sufficiently protected. One percent by weight could mean a substantial number of small lightweight asbestos fibers, thus presenting a significant exposure to consumers of respirable free-form asbestos. Therefore, the Commission declines at this time to adopt a percentage by weight to define permissible contamination.

Industry experts do not agree as to the amount of asbestos that might be present in products without deliberately added asbestos. Nor is there agreement on the reliability of the techniques used to measure low levels (below 1 percent) of asbestos by weight. The Commission believes, however, that the use of appropriate quality control measures and careful selection of raw materials can serve to minimize contamination from unintentionally added asbestos (see the Commission's economic impact statement on file at the Office of the Secretary). In order to emphasize that only patching compounds with clearly unavoidable traces of asbestos contamination will be permitted, the Commission defines "intentionally-added asbestos" at § 1304.3(*f*) of the rule below to mean asbestos which is

(1) added deliberately as an ingredient intended to impart specific characteristics; or (2) contained in the final product as a result of knowingly using a raw material containing asbestos. Whenever a manufacturer finds out that the finished product contains asbestos, the manufacturer will be considered as knowingly using a raw material containing asbestos unless the manufacturer takes steps to reduce the asbestos to the maximum extent feasible.

Therefore, the ban applies only to consumer patching compounds containing intentionally-added respirable free-form asbestos and will not apply to products having unavoidable trace amounts.

6. *Artificial emberizing materials—exemption from ban.* A manufacturer of electric artificial logs and electric fireplaces states that although the Commission proposed to ban only artificial emberizing materials containing respirable, free-form asbestos, references in the media to artificial logs and artificial fireplaces reflect adversely on his business. He asks, therefore, that his products, which use an artificial ash bed of vermiculite, be exempted from the ban.

As the commenter noted, the Commission ban applies only to emberizing materials containing respirable free-form asbestos and not to any artificial logs or artificial fireplaces with which they may be used. Since the banned product is used with artificial logs, it is understandable that questions are raised as to different kinds of artificial logs. The Commission does not believe it would be appropriate to exempt from the ban all electric logs coated with unidentified substances, or all artificial ash used in electric fireplaces, since some of these articles could include the banned product. However, in order to clarify the matter for consumers as well as producers, the Commission adds a statement to § 1305.3(d), the definition of emberizing materials, which reads, "electric artificial logs and artificial ash beds used in electric fireplaces which do not contain respirable free-form asbestos are not included in this definition."

B. *Effective date.* Six commenters discussed the proposed effective date of the ban of consumer patching compounds which was 30 days after publication of the final rule. Five manufacturers suggested a date later than 30 days after publication. A public interest group suggested that the effective date be the date of publication of the final rule.

(1) One commenter suggested that the Commission consider a series of effective dates for the ban on consumer patching compounds: 30 days for manufacturers, 90 for distributors and 180 days for retailers in order to clear inventories. Several commenters believe that a 30-day effective date might prove burdensome to small manufacturers because of the inventory problem.

The matter of inventories was considered in the July 29, 1977 proposal to ban and further discussed at the public meeting of August 15, 1977. The concern of those involved to clear their existing inventories of consumer patching compounds containing respirable free-form asbestos was considered. Information available to the Commission indicates that manufacturers are now maintaining a relatively small inventory. Distributors report that they maintain a small inventory compared to their sales. Retailers have a much slower-moving inventory (51).

The Commission considered the possible adverse economic impact of a 30-day effective date on inventories of manufacturers, distributors and retailers. The Commission also considered the possible adverse effects of exposing consumers to inhalable asbestos by permitting the manufacture, distribution and sale to consumers of patching compounds until 180 days after publication of a ban. It appears to the Commission that early discontinuance of the manufacture of this product would be necessary in order to stop its continuing proliferation in the market. On the other hand, substantial adverse economic impacts could result from the freezing of distributors' and retailers' inventories at an early effective date. The Commission concludes therefore that the ban should become effective at two different points in time. For manufacturers, the effective date should be close to publication of the rule in order to stop the continuing manufacture of the product. For distributors and retailers, the effective date should be delayed to help ameliorate adverse economic impacts.

Therefore, the Commission declares below at § 1304.4 that consumer patching compounds containing respirable free-form asbestos which have been manufactured or initially introduced into commerce 30 or more days after publication of this rule are banned hazardous products. This means that a banned hazardous product, having been manufactured or initially introduced into commerce, retains its status as a banned hazardous product; thus, its subsequent sale, offering for sale, or distribution in commerce, is prohibited by any person in the chain of distribution. In addition, the Commission declares that all other consumer patching compounds containing respirable free-form asbestos, no matter when manufactured or initially introduced into commerce, are banned hazardous products 180 or more days after publication of this rule. (As stated below in § 1304.4(z) of the rule, initial introduction into commerce of this product occurs when the product is physically shipped from a manufacturer's facility to a distributor, retailer, consumer or to another person for application in a consumer environment.)

In summary, 30 days after publication of this rule, manufacturers will be prohibited from manufacturing or shipping the product to distributors, retailers, consumers, or to others for application in consumer environments. Further, 180 days after publication of this rule, distributors and retailers will be prohibited from selling, offering for sale, or distributing any of the described products, no matter when manufactured or initially introduced into commerce, to distributors, retailers, consumers or to others for application in consumer environments.

(2) The public interest group recommends that the effective date of the ban

on consumer patching compounds containing respirable free-form asbestos be the date of publication of the final rule, it is for artificial emberizing materi-

The Commission proposed that the effective date of the ban on artificial emberizing materials be the date of publication although the Administrative Procedure Act (5 U.S.C. 553) which governs publication of consumer product safety rules, provides that a rule should be published 30 days before its effective date unless the Commission finds good cause to provide otherwise. Unlike patching compounds, where exposure to asbestos fibers is most prevalent during mixing, sanding and cleanup operations, although the fibers may remain suspended for a considerable duration of time, asbestos fibers in emberizing materials can be respired as long as such materials are in the home because they are alway in dry form and ready to be moved about by ordinary household air currents. It appeared to the Commission, therefore, that these emberizing materials should be removed from commerce as quickly as possible and that there is good cause to have the ban effective on the date of publication. To assist persons who already had such materials in their homes, the Commission, on July 21, 1977, issued a press release on the impending ban which included a Consumer Alert advising consumers of the dangers associated with these emberizing materials and issuing instructions for their safe removal.

Economic advice to the Commission indicates, in addition, that no significant adverse economic impacts are anticipated as a result of the immediate effective date for emberizing materials (51). As is indicated in the foregoing discussion, the economic impact of a 30-day and even a 180-day effective date for patching compounds would be significant and therefore it appears that the economic impact of an immediate effective date would be more significant. Since no new information has been presented to show that an earlier effective date should be promulgated, the Commission declines the suggestion of the public interest group. Therefore, the effective date of the regulation on consumer patching compounds containing respirable free-form asbestos is 30 days after publication of this rule as to manufacture and initial introduction into commerce and 180 days after publication as to all other units of the defined product no matter when manufactured or initially introduced in commerce.

C. *Product risks and risk assessment.* Several commenters discussed the Commission's risk assessment for patching compounds and questioned other aspects of the hazard.

(1) A manufacturer suggests that use by the general public or by asbestos workers is not hazardous and that the greatest hazard is to a worker during sanding operations if he also smokes.

The Commission notes that while data from an epidemiological study of asbestos insulation workers indicated there was an increased risk of death from lung cancer among smokers, it also indicated there was also an increased risk of death from other asbestos-related diseases, including asbestosis, among nonsmokers (17). Data also suggest that the high risk of mesothelioma (cancers of the pleura and peritoneum) from asbestos exposure appears to be unrelated to smoking (18, 6).

(2) A distributor of fireplaces and fireplace equipment doubts there is a hazard associated with emberizing materials because the fibers used in emberizing materials are relatively large and fibers which would become airborne would be pulled up the fireplace flue.

While it is true that the large asbestos fiber bundles pose little risk of inhalation, the fiber bundles release individual fibers which in turn, can break logitudinally into microscopic fibrils (57). Fibers could become airborne under normal use, installation, and handling conditions, as well as from room drafts. Once the fibers become airborne, they can remain suspended over long periods of time, eventually settling out on items of furniture, draperies, etc., only to become airborne and available for respiration with use of these items. As long as the free-form asbestos emberizing material remains loose on the fireplace floor, there is a possibility that it could become airborne and thus respired.

(3) A manufacturer states that since Commission data are based on occupational statistics, it is difficult to document the Commission's view, in the proposal that, "for many people the major exposure to inhalable asbestos is in the home."

While it is true that much of the Commission data on asbestos-related disease are based on occupational statistics, a risk assessment was made of consumer exposure to respirable asbestos in patching compounds during mixing, sanding and cleanup operations which estimated the increased risk of lung cancer from such exposure in the home. A report of asbestos in consumer patching compounds indicated that significant levels of respirable free-form asbestos fibers were detected in rooms adjacent to that where the actual patching and sanding operations had occurred so that other household members could be exposed as well as the individual performing the patching job (36). In many areas of the country (nonurban), there appears to be a relatively low background level of asbestos (52). Therefore, exposure in the home to asbestos fibers released from consumer products could represent the major exposure. As noted in the proposal, Dr. Paul Kotin, Johns-Manville, stated in a presentation before the Commission, June 9, 1977, that young children are particularly vulnerable to exposure to carcinogens and clearly their major exposure to inhalable asbestos would be in the home. The Commission therefore feels it is essential to minimize, to the extent possible, exposure to respirable asbestos.

(4) A commenter questions Commission reliance on OSHA's proposed amendment of October 9, 1975 to occupational exposure to asbestos as the basis for the Commission proposal. The commenter believes that portions of the OSHA review of October 1975 are scientifically inaccurate.

The Commission notes that most of the information on hazards associated with inhalation of asbestos is based on occupational exposure. It can be said that the body of scientific literature in the OSHA proposal has already been subjected to public scrutiny. During preperation of the Commission proposal, Commission staff conferred with OSHA. As a result, the Commission proposal deleted references to studies which OSHA termed to be of questionable validity.

As pointed out in the Commission proposal, there had been only one report of consumer exposure to asbestos in the scientific literature prior to the proposal. Based on the data from that study, a Commission assessment was made of the potential increased risk of respiratory cancer associated with use of consumer patching compounds containing asbestos fibers.

The Commission also based its proposal on direct and indirect evidence of asbestos inhalation in non-occupationally exposed individuals, including reports from autopsy findings of asbestos fibers in lung tissues and from epidemiological studies.

(5) In assessing the degree and nature of the risk of injury to consumers from patching compounds, the Commission reviewed experimental data and human experience information. In addition, on the basis of data by Rohl on exposure to asbestos during the use of consumer patching compounds (36), the Commission's Health Sciences staff calculated an assesment of the risk which was described in the proposal. The calculations were based on the application of a theoretical model similar to that described by Enterline and Henderson (11). Several highly technical comments were received in response to the risk assessment. The significant issues raised in these comments are discussed below.

(a) Two commenters questioned the assumption in the risk assessment that exposure to asbestos is cumulative over the lifetime of a person, and whether intermittent exposure over several years has the same effect as if the same exposure had taken place in a single year. In reviewing the literature on asbestos exposure, the Commission finds that asbestos fibers are unlike many chemicals and other materials which the body may metabolize and excrete. Body clearance of asbestos fibers is much less effective. They have been found not only to remain in the body but to accumulate (55). Since the data tend to show that intermittent exposure can lead to cumulative buildup of asbestos fibers, it appears to the Commission that intermittent exposure over several years could have the same hazardous effect as if the total intermittent exposure had taken place within one year.

(b) Two commenters indicated that the hazard from applying patching compounds could differ in different circum-

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stances. They indicate that persons of differing skills may release different amounts of inhalable asbestos into the air. Although these differences occur, a consumer would likely release more asbestos into the air because he or she may be less skilled in the process than a professional applicator. The Commission recognizes as these commenters point out that some products have a smaller percentage of asbestos than those which were used for exposure data in the Commission risk assessment. For example, one commenter submitted asbestos exposure data from a study he conducted using a compound that contained a smaller amount of asbestos. Based on this commenter's exposure data, another risk assessment was conducted. The results suggest that use of a patching compound containing less asbestos may reduce but does not eliminate an excess of deaths due to exposure to asbestos in patching compounds. The range is from 1 death per million persons exposed for the projected five years exposure using one model and up to 226 lifetime excess cancer respiratory deaths per million persons exposed during another model (53). It should be noted here that while asbestos levels may vary, they do not change the fact that there is no known level below which inhalable asbestos may be considered safe.

(c) Another commenter says that using a premixed compound reduces the consumer's exposure to asbestos. The commenter also thought that the Commission's estimate of consumer exposure was too high. The Commission's risk assessment analysis did take into consideration the exposure during the mixing of a patching compound. While exposure to asbestos fibers would be negligible during slight stirring of a premixed compound, the exposure during the sanding and cleaning operations involved would be the same as for the dry compound. Consequently, the risk assessment values would not be significantly reduced. As for the four-day, eight-hour exposure being too high an estimate, no data were submitted to substantiate that contention. As stated in the proposal, therefore, it appears to the Commission that although the exposure may be high, it is a reasonably foreseeable exposure.

D. *Substitutes for asbestos.* The July 29, 1977 proposal notes that substitutes for asbestos are already being used in patching compounds. One of the most common substitutes is attapulgite, a fibrous clay. Other substitutes of a fibrous nature are wollastonite, kaolinite, sepiolite and bentonite. Several comments express concern that materials used as substitutes for asbestos may also pose hazards.

The Commission shares this concern. Substitutes for asbestos have been under consideration for only a short time. Little data are available on which to evaluate the safety of substitute materials. Experimental findings of Stanton (58) indicate that many mineral fibers (in addition to asbestos) of small respirable dimentions are biologically active under experimental conditions.

According to correspondence dated July 26, 1977 from Dr. Paul Kotin of the Johns-Manville Co. with environmental consultant Barry Castleman, a Johns-Manville study is under way to assess the potential inhalation hazard of certain naturally-occurring or man-made mineral fibers such as ceramic fibers. Ceramic fibers are a potential substitute for artificial emberizing materials.

Human exposure data to substitutes are extremely limited. Occupational exposure data to certain clay mineral fibers which are proposed asbestos substitutes are scheduled to be presented at a Symposium on Occupational Exposure to Fibrous and Particulate Dust and their Extension into the Environment, in December 1977. These data are expected to indicate the extent of exposure, rather than human experience findings on results of such exposure. Data on the results of human exposure to asbestos substitutes will not, in all likelihood, be available in the near future.

(1) A commenter suggests that substitutes, since they would be fibrous, would present a risk.

In assessing asbestos substitutes, data available to the Commission indicates that a number of substances may be used which are not fibrous such as calcium carbonite, clay, resins and mica. For the fibrous clay minerals which may be used as asbestos substitutes such as wollastonite, kaolinite, sepiolite and bentonite, the Commission is aware that there is a lack of conclusive data on the hazard potential associated with these minerals. Additional study is needed to evaluate the risk of inhalation exposure to such small mineral fibers. Nevertheless, the Commission believes that the known risk from inhalable asbestos requires the banning of these products at this time.

(2) A comment questions a statement in the proposal that fibrous glass could be considered a substitute for chrysotile in emberizing materials.

The Commission concurs with this comment; it is currently unaware of any manufacturers or distributors who use or know of the use of fibrous glass for this purpose. In addition, from a technical viewpoint, glass fibers are not similar in size and shape to chrysotile. Unlike the rod-like glass fibers, chrysotile tends to be curved, or be of curly fibers or fiber bundles, comprised of extremely small-diamatered fibrils. However, glass fibers are similar—at least in shape—to some of the amphibole asbestos minerals. The diameter of most fibrous glass is reportedly greater than 3–5 microns and considered too large to be respirable. However, glass fibers are not of uniform dimensions and a small percentage may be of respirable size. Additional study is needed to assess the pathologic effects of inhaled fibers, including fibrous glass.

E. *Economic considerations.* Six commenters expressed concern that the ban would have an adverse economic impact on the industry. Five of the six are manufacturers who commented on patching compounds. The sixth is a distributor of gas fireplace logs.

One patching compound manufacturer claimed that some firms in that industry will go out of business should the ban be promulgated. As noted below, our studies indicate that some small producers may not have the technical capability to reformulate their products satisfactorily or may be unable to obtain necessary raw materials by the effective date of the ban. Thus, some may cease production temporarily, until such reformulation is achieved. Some of the large manufacturers have indicated a willingness to license their asbestos-free formulations (or parts of them) to smaller firms.

Two commenters discussed potential cost effects of the ban on patching compounds other than those relating to the product itself. One patching compound producer estimated at 60 percent the increased "workload" associated with the professional application of non-asbestos formulations because of different performance characteristics. The Commission has investigated the potential increase in direct labor costs associated with existing asbestos and non-asbestos formulations; it estimates an initial 10 to 25 percent average increase as a result of switching from the former to the latter. Other costs may accrue to professional users of the product should different application tools be needed or should some jobs have to be redone to the relatively poor shrink- and crack-resistance of some non-asbestos formulations. These increased costs are expected to diminish over time a formulations improve and as applicators become more accustomed to using non-asbestos formulations.

One company which may be adversely affected by the proposed ban reports that attapulgite, one of the prime substitutes for asbestos in patching compounds, is in "limited supply" and that some small manufacturers may have difficulty in obtaining that material. Other industry sources have reported this same problem. The larger patching compound producers, who already have asbestos-free formulations on the market, are not expected to have as much difficulty in obtaining substitute materials.

Two manufacturers discussed the ban's potential adverse effect on the utility of the product. One expressed a belief that non-asbestos formulations are inferior in performance to asbestos formulations. Another reinforced that belief, reporting that the absence of asbestos formulations may prompt workmen to add their own asbestos to the product to help prevent cracking when wall joints are covered. However, the addition of asbestos would be tantamount to manufacture of the banned product and would thus be prohibited. It appears that at least some existing non-asbestos formulations may be less desirable, from a performance standpoint, to professional contractors; most consumer applicators are not ex-

pected to perceive a significant difference in the product's performance.

As is indicated in the proposal, the Commission is aware that economic impacts of varying degrees will occur as result of the ban on inhalable asbestos taining patching compounds and ...berizing materials containing respirable free-form asbestos. Also, the Commission is aware that technology for producing asbestos-free patching-compound formulations is becoming more generally available. The economic impact will tend to be reduced over time as non-asbestos formulation technology becomes more widespread and as existing recent formulations are improved by manufacturers. The nature and extent of the effects on the industries are discussed in the Environmental and Economic Assessments now on file in the Office of the Secretary and were considered by the Commission during this rulemaking process.

F. Other comments. (1) Several commenters suggested that the Commission should investigate other products containing asbestos in order to determine the existence of possible hazards.

In the proposal, the Commission noted that information on other products containing inhalable asbestos would continue to be developed in order to determine whether further regulation is necessary. Accordingly, the staff has begun to develop plans for collecting such information.

(2) One commenter suggested that the Commission issue a rule that would prohibit stockpiling of the banned products.

Section 9(d)(2) of the CPSA provides that the Commission may, by notice and comment rulemaking, prohibit a manufacturer from stockpiling a product for which a consumer product safety rule has been promulgated. In this case, the ban on consumer patching compounds covers the manufacture and initial introduction of products into commerce 30 days after promulgation; the ban on artificial emberizing materials covers products in commerce on the date of promulgation. Therefore, in practical effect, there would not be time for manufacturers to stockpile; nor would there be time prior to these effective dates for notice and comment rulemaking.

(3) A commenter expressed concern that the banned products be kept out of international commerce.

The Commission notes that this comment is directed not to the proposed rule but to its enforcement. If this matter should become a problem it would be considered in the context of enforcement.

(4) Several comments suggested editorial changes in the proposal. These suggestions were considered and, where appropriate, have been included herein.

Description of the Ban

The banned products. Parts 1304 and 1305 declare, respectively, that consumer patching compounds and artificial emberizing materials (embers and ash) containing respirable free-form asbestos are banned hazardous products under section 8 of the Consumer Product Safety Act.

Scope and application. The rules apply to the named consumer products that are customarily produced or distributed for sale to or for the personal use, consumption or enjoyment of consumers in or around a household or residence, a school, in recreation or otherwise. In addition to those products which can be sold directly to consumers, the ban applies to the named consumer products which are used and enjoyed by consumers, such as those used in residences, schools, hospitals, public buildings or other areas where consumers have customary access, whether the patching compounds are applied professionally or by consumers. Only consumer products are subject to this regulation. Patching compounds which are consumer products include those which a consumer can purchase. Merely labeling a patching compound for industrial use would not exclude such articles from the ban. If the sale or use of the product to consumers is facilitated, it is subject to the ban. Patching compounds which are labeled as, marketed, and sold solely for industrial use in non-consumer environments are not subject to the ban. The ban applies to patching compounds containing intentionally-added respirable free-form asbestos sold directly to consumers and to those which are used in residences, schools, hospitals, public buildings or other areas where consumers have customary access.

Effective dates. (1) The rule at Part 1304 below applies to consumer patching compounds containing respirable free-form asbestos that are manufactured or initially introduced into commerce on January 16, 1978, or after that date. For all other consumer patching compounds containing respirable free-form asbestos, no matter when manufactured or initially introduced into commerce the rule at Part 1304 applies on June 12, 1978, and after that date. This means that 30 days after publication of this rule, manufacturers are prohibited from manufacturing or shipping the product to distributors, retailers, consumers or to others for application in consumer environments. Further, 180 days after publication of this rule, distributors and retailers will be prohibited from selling, offering for sale or distributing in commerce the described products, no matter when manufactured or initially introduced into commerce, to distributors, retailers, and users.

(2) The rule at Part 1305 below applies to artificial emberising materials (embers and ash) containing respirable free-form asbestos that are in commerce on December 15, 1977, or after that date. This prohibition applies to products in inventory as well as to those manufactured on or after the effective date.

The Administrative Procedure Act (5 U.S.C. 553) which governs the matter of effective date for banning rules under the CPSA, provides that a rule should be published 30 days before its effective date unless the Commission provides otherwise for good cause found and published with the rule.

As described in the discussion above on effective date, the Commission is concerned that ordinary household air currents in homes that contain artificial emberizing materials, can cause continuing exposure of consumers to the respirable free-form asbestos in artificial embers and ash. It appears to the Commission, therefore, that these products should be removed from commerce as expeditiously as possible in order to avoid having additional numbers of consumers unwittingly purchase these materials. The Commission finds there is good cause to issue the rule on artificial emberizing materials effective on the date of publication.

Findings

1. *CPSA Section 8.* Section 8 (1) and (2) of the CPSA require that, before issuing a consumer product safety rule declaring a product to be a banned hazardous product, the Commission must find (1) that the product presents an unreasonable risk of injury and (2) that no feasible safety standard can adequately protect the public from the unreasonable risk of injury associated with the product.

(a) *Unreasonable risk of injury.* The regulations are intended to reduce or eliminate the unreasonable risk of injury to the public from cancers such as lung cancer and mesothelioma. The risk is associated with asbestos fibers which are not tightly bound into or encapsulated in the composition of a product. The health risk occurs when asbestos fibers become airborne such as by mixing, sanding, or cleanup operations when using patching compounds, or by the effect of ordinary household air currents on artificial emberizing materials in fireplaces. Tests show that certain malignancies are related to asbestiform minerals; these can arise 20 or more years after occupational exposure. However, also reported are malignancies from indirect, non-occupational exposure. In a recent case, the court recognized a study on asbestos exposure cited by the Environmental Protection Agency at 40 FR 48295, showing "new biological evidence supporting the significance of single, short-term exposures * * * One-day inhalation exposures in animal experiments have produced an increase in the incidence of mesothelioma." *National Association of Demolition Contractors v. Environmental Protection Agency*, Civ. Nos. 74-1545, 75-2078, D.C. Cir., October 13, 1977.

The information on which the Commission made the determination of unreasonable risk consists primarily of data on exposure of industrial workers to respirable free-form asbestos. Information on exposure of the public to inhalable asbestos in individual consumer products is limited. However, as is evident from the extensive bibliography included herein there is general scientific

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and medical agreement that there is no known threshold level below which it is safe for people to be exposed to respirable free-form asbestos.

As noted in the proposal, inhalable asbestos in the household from consumer patching compounds and artificial emberizing materials presents a great risk due to the presence in the household of persons, such as children, who may be particularly vulnerable to carcinogens. Because of the long latency period, exposure to inhalable asbestos in the home can be life shortening for children. The Commission notes that consumers are exposed to asbestos from sources other than the banned products. However, consumers who are exposed to asbestos fibers from patching compounds and artificial embers and ash receive additional doses of asbestos and can be assumed to face a greater risk than persons not so exposed, and a greater cumulative risk than if no asbestos were present in the general environment.

In determining that the risk of cancers is unreasonable, the Commission concludes that the degree and nature of the risk of injury and the probability that the risk will result in harm outweighs the rules' effect on the products' utility, cost and availability to the consumer.

(b) *No feasible safety standard.* The Commission is not aware of a technically feasible procedure for removing the hazards of cancer from respirable free-form asbestos in the named products. The Commission believes that not all patching compounds present an unreasonable risk of injury to the public, only patching compounds containing respirable free-form asbestos. The hazard associated with this product is caused by the free form in which the asbestos appears. A safe level of exposure to free-form asbestos is not known. Therefore, it does not appear that a standard for patching compounds containing respirable free-form asbestos is feasible.

The product artificial emberizing materials for fireplaces, containing respirable free-form asbestos is used only in dry form. Thus individual asbestos fibers are never bound together. If the asbestos fibers were coated by another material to bind the fibers, it would no longer be the same product and would not give the desired decorative effect. In considering the dry character of the product and the fact that a safe level of exposure to respirable free-form asbestos is not known, it does not appear that a standard for artificial emberizing materials containing respirable free-form asbestos is feasible.

The Commission believes that no standard can render the defined products non-hazardous and concludes that only banning these products can adequately protect the public from unreasonable risks of injury associated with them.

2. *CPSA Section 9(b).* Section 9(b) of the CPSA, 15 U.S.C. 2058(b), as amended, requires the Commission to consider and take into account in the promulgation of a rule the special needs of elderly and handicapped persons to determine the extent to which such persons may be adversely affected by such rule. The Commission has considered these needs and has determined that no adverse effect on elderly or handicapped persons will result from this regulation. It is in the best interest of the entire public, including the elderly and handicapped, that these hazards be reduced.

3. *CPSA Section 9(c).* Section 9(c) of the CPSA requires that prior to promulgating a consumer product safety rule the Commission shall consider and shall make appropriate findings for inclusion in such a rule as to: (1) The degree and nature of the risk of injury the rule is designed to eliminate or reduce; (2) the approximate number of consumer products, or types or classes thereof, subject to such rule; (3) the need of the public for the consumer products subject to such rule, and the probable effect of such rule upon the utility, cost, or availability of such products to meet such need; (4) any means of achieving the effect 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; (5) that the rule is reasonably necessary to eliminate or reduce an unreasonable risk associated with such product; and (6) that the promulgation of the rule is in the public interest (15 U.S.C. 2058(c)).

The findings required by Section 9(c) of the act have been described generally in the preamble and are incorporated in §§ 1304.5 and 13.05.5 of the rules below.

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Conclusion

Upon considering the published proposal, the oral and written responses to the proposal and other relevant material, the Commission bans consumer patching compounds and artificial emberizing materials (embers and ash) as set forth below.

Accordingly, pursuant to provisions of the Consumer Product Safety Act (sections 8 and 9, 86 Stat. 1215–17, as amended, 90 Stat. 506, 15 U.S.C. 2057, 2058), new Parts 1304 and 1305 are added to Title 16, Chapter II, Subchapter B, as follows:

PART 1304—BAN OF CONSUMER PATCHING COMPOUNDS CONTAINING RESPIRABLE FREEFORM ASBESTOS

Sec.

1304.1 Scope and application.
1304.2 Purpose.
1304.3 Definitions.
1304.4 Consumer patching compounds as banned hazardous products.
1304.5 Findings.

Authority: Sections 8, 9, 86 Stat. 1215–1217, as amended 90 Stat. 506, 15 U.S.C. 2057, 2058.

§ 1304.1 Scope and application.

(a) In this Part 1304 the Consumer Product Safety Commission declares that consumer patching compounds containing intentionally-added respirable free-form asbestos in such a manner that the asbestos fibers can become airborne under reasonably foreseeable conditions of use, are banned hazardous products under sections 8 and 9 of the Consumer Product Safety Act (CPSA) (15 U.S.C. 2057 and 2058). This ban applies to patching compounds which are (1) used to cover, seal or mask cracks, joints, holes and similar openings in the trim, walls, ceiling, etc. of building interiors, which after drying are sanded to a smooth finish and (2) are produced and distributed for sale to or for the personal use, consumption or enjoyment of a consumer in or around a permanent or temporary household or residence, a school, in recreation or otherwise.

(b) The Commission has found that (1) these patching compounds are being or will be distributed in commerce; (2) that they present an unreasonable risk of injury; and (3) that no feasible consumer product safety standard under the CPSA would adequately protect the public from the unreasonable risk of injury associated with these products. This rule applies to the banned hazardous products defined in section 1304.3 and described further in section 1304.4.

(c) Only consumer products are subject to this regulation. Patching compounds which are consumer products include those which a consumer can purchase. Merely labeling a patching compound for industrial use would not exclude such articles from the ban. If the sale or use of the product by consumers is facilitated, it is subject to the ban. Patching compounds which are labeled as, marketed, and sold solely for industrial use in non-consumer environments are not subject to the ban. In addition to those products which can be sold directly to consumers, the ban applies to patching compounds containing respirable free-form asbestos which are used in residences, schools, hospitals, public buildings or other areas where consumers have customary access.

§ 1304.2 Purpose.

The purpose of this rule is to ban consumer patching compounds containing intentionally added respirable, free-form asbestos. These products present an unreasonable risk of injury due to inhalation of fibers which increase the risk of developing cancer, including lung cancer and mesothelioma, diseases which have been demonstrated to be caused by exposure to asbestos fibers.

§ 1304.3 Definitions.

(a) The definitions in section 3 of the Consumer Product Safety Act (15 U.S.C. 2052) apply to this Part 1304.

(b) "Asbestos" means a group of mineral fibers composed of hydrated silicates, oxygen, hydrogen, and other elements such as sodium, iron, magnesium, and calcium in diverse combinations and are: Amosite, chrysotile, crocidolite, anthophyllite asbestos, actinolite asbestos, and tremolite asbestos.

(c) "Free-form asbestos" is that which is not bound, or otherwise "locked-in" to a product by resins or other bonding agents, or which can readily become airborne with any reasonably foreseeable use.

(d) "Patching compounds" are mixtures of talc, pigments, clays, casein, ground marble, mica or other similar materials and a binding material such as asbestos which are sold in a dry form ready to be mixed with water, or such combinations in ready-mix paste form.

(e) "Consumer patching compounds" are those that are customarily produced or distributed for sale to or for the personal use, consumption or enjoyment of consumers in or around a permanent or temporary household or residence, a school, in recreation or otherwise. The Commission considers that patching compounds for application in these consumer environments are either distributed for sale to or are for the personal use or enjoyment of consumers.

(f) "Intentionally-added asbestos" is asbestos which is (1) added deliberately as an ingredient intended to impart specific characteristics; or, (2) contained in the final product as the result of knowingly using a raw material containing asbestos. Whenever a manufacturer finds out that the finished product contains asbestos, the manufacturer will be considered as knowingly using a raw material containing asbestos, unless the manufacturer takes steps to reduce the asbestos to the maximum extent feasible.

(g) "Initial introduction into commerce" occurs when the manufacturer ships a product covered by this regulation from a facility of the manufacturer to a distributor, retailer, or user.

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§ 1304.4 Consumer patching compounds as banned hazardous products.

On the basis that airborne asbestos fibers present the hazards of cancer, including lung cancer and mesothelioma to the public, consumer patching compounds containing intentionally-added, respirable free-form asbestos, which have been manufactured or initially introduced into commerce after January 16, 1978, are banned hazardous products. In addition, all other consumer patching compounds containing intentionally-added, respirable free-form asbestos, no matter when manufactured or initially introduced into commerce, are banned hazardous products after June 11, 1978.

§ 1304.5 Findings.

(a) *The degree and nature of the risk of injury.* The Commission finds that the risk of injury which this regulation is designed to eliminate or reduce is from cancer, including lung cancer and mesothelioma. In assessing the degree and nature of the risk of injury to consumers, the Commission has reviewed experimental data and human experience information. The Commission noted that in the scientific literature, there is general agreement that there is no known threshold level below which exposure to respirable free-form asbestos would be considered safe. Further on the basis of such scientific opinion, it appears to the Commission that children are particularly vulnerable to carcinogens because of their longer potential lifetime and their rapid rate of growth. In areas of the country where asbestos may not be prevalent in the environment, the major risk of exposure for children and others may occur in the household. In areas of the country where more asbestos fibers are present in the environment, the public is exposed to additional risks from the presence of asbestos fibers in households and other consumer environments, the Commission concluded on the basis of these factors that consumer patching compounds containing respirable free-form asbestos present an unreasonable risk of injury to the public. In addition, a risk assessment was made. For purposes of this assessment, the Commission considered the use of patching compounds by the consumer, for six hours a day four times a year, to be a high yet reasonably foreseeable exposure. The increased risk of death from respiratory cancer induced by this exposure is estimated at between 10 and 2,000 per million. For five years of exposure at these levels, the risk increases geometrically and is estimated at between 1,000 and 12,000 per million. The lower estimate of 10 per million is closer to the actual risk for a one-year exposure. Nevertheless, in view of the seriousness of the injury and the cumulative effects of asbestos exposure, even this minimum figure represents an unacceptable risk. The Commission believes that reducing exposure to respirable free-form asbestos in the home represents a substantial decrease in risk to consumers, since, for many people, the major exposure to inhalable asbestos is in the home.

(b) *Products subject to the ban.* Consumer patching compounds as defined in § 1034.3 (d), (e), (f) include such products as drywall spackling compounds and tape joint compounds (commonly known as "joint cement" or "tape joint mud"). The Commission estimates annual shipments of patching compounds subject to the ban at approximately 30–50 million "units," or individual packages, of various sizes from 0.5 to 25 pounds (dry) or 0.5 to 5 gallons (wet). The Commission believes that about half the patching compounds sold in 1977, and intended for sale to or use or enjoyment by consumers, were formulated with asbestos. Many others containing significant levels of asbestos contamination will also be affected by the ban.

(c) *Need of the public for the products and effects of the rule on their utility, cost and availability.* Patching compounds, though used primarily by commercial construction workers, are also used by consumers, and are used for the patching and sealing of cracks and joints in and around the household and in other consumer environments either by consumers or professional applicators. The compounds are used to cover areas on gypsum drywall which might otherwise be aesthetically undesirable or which might lead to structural damage, energy loss or lower property value. The asbestos in these compounds acts as a structural reinforcing agent which helps to reduce cracking and shrinkage of the compound over time, and which renders the compound more pliable or "workable" upon application.

(1) *Utility.* The elimination of asbestos from these products may result in the increased use or new development of substitutes which have similar properties to those of asbestos, or which impart similar qualities to the product. In current reformulations, asbestos is replaced by a combination of substances, of which the most common is attapulgite, a fibrous clay. Some non-asbestos formulations are reportedly not as effective as those containing asbestos in controlling shrinkage and cracking over time. The workability of some compounds may be diminished as well. This may adversely affect the utility derived from the product by consumers, and by professional contractors until such time as improved formulations are developed and available to end-users.

(2) *Cost.* Asbestos-free patching compound formulations may require more time to use. This would tend to increase the direct labor costs of residential and other construction and renovation. The expected increase is between 10 and 25 percent. The Commission estimates that the annual labor cost of drywall finishing in these consumer environments is on the order of $1 billion. The use of non-asbestos patching compound formulations in all applications may increase this cost by $50–$125 million, assuming that roughly half the current labor costs (i.e., that portion now associated with the use of asbestos formulations) are affected by the 10–25 percent increase. The burden of this cost is expected to fall directly on owners of existing homes who may engage in some renovation, and on purchasers of newly-renovated or newly-constructed homes. These increased costs are expected to diminish over time as formulations improve and as applicators become more accustomed to using non-asbestos formulations. The use of asbestos substitutes may also lead to cost increases in the manufacture of patching compounds. The Commission estimates this cost, which may vary widely from firm to firm, at an average of 5–15 percent. This is made up primarily of increased costs of raw materials and of formulation research and development. It is expected that the price of many patching compounds may rise as a result. Producers, distributors, and retailers of patching compounds may also have to incur costs associated with the disposal of products in inventory. The Commission estimates that the wholesale value of manufacturers' and distributors' inventories at the time the ban becomes effective will be approximately $15 million. These costs may be reflected in the prices charged for asbestos-free patching compound formulations, and in the prices of other drywall and paint products. It appears that, because of competitive pressure from asbestos-containing compounds, producers of asbestos-free formulations have not yet passed on to purchasers their increased costs. If the increased production costs of asbestos-free formulations can be passed on completely as a result of the ban, the total annual price effect for the year following the issuance of the ban may be $10–$50 million. The magnitude of this effect may be reduced significantly in successive years following the issuance of the ban as producers' development costs are amortized, as raw materials become more widely available, and as price competition is strengthened because of market pressure and economies of scale associated with production.

(3) *Availability.* The supply of asbestos substitutes, particularly attapulgite clay and relatively uncontaminated talc, for use in the manufacture of patching compounds may be insufficient to meet the short-run demand which is expected to be stimulated by the promulgation of the ban. Further, many small producers probably lack the technical capability to reformulate their products, and may be forced to cease production, at least until formulations of satisfactory cost and performance are developed. This may affect some professional contractors. In the short run, consumers may be indirectly affected by delays in drywall finishing and building completion.

(d) *Any means of achieving the objective of the ban while minimizing adverse effects on competition or disruption or dislocation of manufacturing and other commercial practices consistent with the public health and safety.* The adverse effects of the ban on patching compounds containing asbestos is reduced by

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limiting the ban to intentionally added asbestos. Other alternatives such as limiting the scope of the ban only to products purchased and used by consumers or to issuing a ban with a later effective date, were considered by the Commission. However, none was found that would cause less disruption or dislocation of manufacturing and other commerical practices, consistent with public health and safety.

Conclusion. The Commission finds that this rule, including its effective date is reasonably necessary to eliminate or reduce the unreasonable risk of injury from cancers such as lung cancer and mesothelioma that are associated with the banned products described herein, that no feasible consumer product safety standard under the Consumer Product Safety Act can adequately protect the public from this risk, and that promulgation of this rule is in the public interest.

PART 1305—BAN OF ARTIFICIAL EMBERIZING MATERIALS (ASH AND EMBERS) —CONTAINING RESPIRABLE FREE-FORM ASBESTOS

Sec.
1305.1 Scope and application.
1305.2 Purpose.
1305.3 Definitions.
1305.4 Artificial fireplace ash and embers as banned hazardous products.
1305.5 Findings.

AUTHORITY: Secs. 8, 9, 30(d), Pub. L. 89-573, as amended, Pub. L. 94-284; 86 Stat. 1215-17, as amended, 90 Stat. 506 (15 U.S.C. 2057, 2058).

§ 1305.1 Scope and application.

In this Part 1305 the Consumer Product Safety Commission declares that artificial emberizing materials (ash and embers) containing respirable free-form asbestos generally packaged in an emberizing kit for use in fireplaces, and designed for use in such a manner that the asbestos fibers can become airborne under reasonably foreseeable conditions of use are banned hazardous products under sections 8 and 9 of the Consumer Product Safety Act (CPSA). (15 U.S.C. 2057 and 2058). This ban applies to artificial emberizing materials available in separate kits or with artificial fireplace logs for use in fireplaces and sprinkled or coated by consumers on the artificial logs to simulate live embers and ashes and give a glowing appearance when subjected to high temperatures. Bags of material containing asbestos that are sold separately to be sprinkled on and under artificial logs to simulate burning and glowing ashes also come within the scope of this ban.

§ 1305.2 Purpose.

The purpose of this rule is to ban artificial emberizing materials containing respirable free-form asbestos. These products present an unreasonable risk of injury due to inhalation of fibers which increase the risk of developing cancers such as lung cancer and mesothelioma, diseases which have been demonstrated to be caused by exposure to asbestos fibers.

§ 1305.3 Definitions.

(a) The definitions in section 3 of the Consumer Product Safety Act (15 U.S.C. 2052) apply to this Part 1305.

(b) "Asbestos" means a group of mineral fibers composed of hydrated silicates, oxygen, hydrogen and other elements such as sodium, iron, magnesium and calcium in diverse combinations and are: Amosite, chrysotile, crocidolite, anthophyllite asbestos, actinolite asbestos, and tremolite asbestos.

(c) "Free-form asbestos" is that which is not bound, woven, or otherwise "locked-in" to a product by resins or other bonding agents, or those from which fibers can readily become airborne with any reasonably foreseeable use.

(d) "Emberizing materials" means an asbestos-containing material generally packed in an "emberizing" kit to be placed under artificial logs in gas-burning fireplace systems or in artificial fireplaces for decorative purposes. The product is also glued to artificial logs, either at a factory or by a consumer using an emberizing kit. (Synthetic logs manufactured of cellulosic products which are consumed by flames are not included in this definition. Electric artificial logs and artificial ash beds used in electric fireplaces, which do not contain respirable free-form asbestos are not included in this definition.)

§ 1305.4 Artificial fireplace ash and embers as banned hazardous products.

On the basis that airborne asbestos fibers present the hazards of cancer such as lung cancer and mesothelioma to the public, artificial fireplace ash and embers containing respirable free-form asbestos are banned hazardous products.

§ 1305.5 Findings.

(a) *The degree and nature of the risk of injury.* The Commission finds that the risk of injury which this regulation is designed to eliminate or reduce is from cancer, including lung cancer and mesothelioma. Measurements are not available of the amounts of asbestos in the air from asbestos-containing emberizing materials in homes. However, it appears that the amount of airborne asbestos in such homes would increase when air currents in the home are created by downdrafts from a fireplace chimney or other activities that stir air in any room. Since emberizing materials may contain up to 50 percent asbestos, which if not permanently bound into artificial fireplace logs would be in respirable form, the risk associated with emberizing materials is considerable, especially since it continues to exist 24 hours a day.

(b) *Products subject to the ban.* Artificial emberizing materials are decorative simulated ashes or embers, used in certain gas-burning fireplace systems, which glow to give the appearance of real burning embers. The material is sprinkled on or glued to gas logs, or sprinkled on fireplace floors.

(c) *Need of the public for the products and effects of the rule on their utility, cost, and availability.* Artificial fireplace emberizing material serves a strictly decorative purpose and does not materially affect the actual performance of the fireplace gas system in terms of its ability to provide heat. A certain degree of aesthetic desirability exists, however, since the product "system" itself (the gas log, ashes, and embers) is intended to simulate burning wooden logs. Gas logs may be sold with artificial emberizing material attached at the factory (the log commonly referred to as being "frosted"), or with the "embers" in a separate kit, often mixed with simulated "ashes." Virtually all gas logs are either frosted or packaged with an emberizing kit; however, the majority of gas logs produced in 1977 were packaged with non-asbestos-containing emberizing kits. The Commission estimates annual sales of artificial gas logs at approximately 100,000 units. Some 25,000–30,000 of these would be subject to the ban. Approximately 100,000 gas logs frosted or treated by consumers with asbestos are estimated to be in existence. The Commission believes that the majority of gas logs are sold with emberizing kits; this gives the consumer a choice as to whether or not to use the artificial embers and ashes.

(1) *Utility.* Manufacturers of artificial gas log emberizing material are currently using four substitutes for asbestos in their products: vermiculite, rock wool, mica, and a synthetic fiber. None of the four is claimed to be as aesthetically effective as asbestos. Thus, the utility derived by consumers from some gas-burning fireplace systems may be adversely affected.

(2) *Cost.* No effect on the overall price level of gas logs is anticipated as a result of the ban. The average price of emberizing kits may rise somewhat; the Commission estimates the total price effect of the ban on consumers at under $25,000.

(3) *Availability.* The Commission believes that all producers of artificial emberizing material will have eliminated asbestos from their products by the time the ban becomes effective. No significant impact on the availability of asbestos substitutes to producers nor on the availability of gas logs or emberizing kits to retail dealers and consumers is expected as a result of the ban.

(d) *Any means of achieving the objective of the ban while minimizing adverse effects on competition or disruption or dislocation of manufacturing and other commercial practices consistent with the public health and safety.* The Commission believes that there will be minimal disruption to the market for artificial emberizing materials as a consequence of the ban and that no further reduction in adverse effects is feasible.

Conclusion. The Commission finds that this rule, including its effective date, is

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reasonably necessary to eliminate or reduce the unreasonable risk of injury from cancers such as lung cancer and mesothelioma that are associated with the banned products described herein, that no feasible consumer product safety standard under the Consumer Product Safety Act can adequately protect the public from this risk, and that promulgation of this rule is in the public interest.

Effective Dates: Part 1304 becomes effective January 16, 1978.

Part 1305 becomes effective December 15, 1977.

Dated: December 12, 1977.

SHELDON D. BUTTS,
Assistant Secretary, Consumer Product Safety Commission.

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