



ASBESTOS INFORMATION ASSOCIATION

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1 September 1976

Mr. S. John Byington
Chairman
Consumer Product Safety Commission
1750 K Street, N.W.
Washington, D. C. 20036

Re: Petition of Natural Resources Defense
Council, Inc., and the Consumers Union
of U.S.A., Inc., for the Promulgation
of a Rule Declaring Certain Patching
Compounds to be Banned Hazardous
Substances

Dear Chairman Byington:

The Asbestos Information Association/North America, an incorporated, non-profit organization of firms and corporations engaged in the manufacture or processing of asbestos-containing products and in the mining and milling of asbestos fiber, desires to comment on the petition to the Commission submitted July 15, 1976 by the Natural Resources Defense Council, Inc. and the Consumers Union of U.S.A., Inc. The petitioners seek an order by the Commission to ban patching compounds containing asbestos by declaring such compounds to be hazardous products.

Comments contained in the attachment have been prepared following consultation with member companies of the Association and other expert sources of information.

We are pleased to have this opportunity to present our comments and to advise that, if desired, we are prepared to further address this matter with you or members of your staff.

We wish to inform you that Ms. Shacter of the Commission staff has been highly efficient and responsive to her public interest charge in the conduct of business with this Association. We commend to your attention her professionalism and pleasant demeanor.

Sincerely yours,


R. H. Mereness
Executive Director

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Response to Consumer Product Safety Commission
on petition by Natural Resources Defense Council,
Inc. and Consumers Union of U.S.A., Inc. for the
Promulgation of Rule Declaring Certain Patching
Compounds to be Banned Hazardous Substances, dated
July 15, 1976.

30 August 1976

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I INTRODUCTION

On July 15, 1976, a petition was filed by the Natural Resources Defense Council, Inc. (NRDC) and Consumers Union of U.S.A., Inc. with the Consumer Product Safety Commission pursuant to paragraph 2 of the Federal Hazardous Substances Act, 15 U.S.C. paragraph 1261 (1974) requesting that consumer patching compounds containing asbestos be banned as hazardous substances. Patching compounds were indicated to include taping, spackling and joint sealing and joint sealing compounds. The petition alleged that continued use of these compounds "... will result in a significantly higher incidence of cancer (including lung cancer and mesothelioma)" and "that no cautionary label would adequately protect the public from the risk of illness associated with patching compounds."

The Asbestos Information Association/North America is an association of 32 producers of asbestos and asbestos containing products. Members of the Association are directly affected by the petition and wish to enter this response into the record.

II USE OF ASBESTOS IN PATCHING COMPOUNDS

Composition of Drywall Compounds

The petitioners note correctly that the principal use of patching compounds by consumers is in home drywall construction and repair. This discussion therefore will focus on the material generally used for the application, tape-joint compound (TJC).

There are two principal types of join compound. One uses a latex or water-soluble glue as a binder and "sets" by evaporation of the water. The other uses dehydrated gypsum as the binder (and the principal dry ingredient), or gypsum in combination with water soluble binders, and sets by chemical reaction as the gypsum combines with water of hydration. The evaporative type, composed mainly of limestone, lesser amounts of mica and 3-5 percent asbestos plus the binder, controls about 80 percent of the market, and usually is sold in the ready-mixed, wet form. The hydrating type (gypsum-based), with roughly 20 percent of the market, also typically contains asbestos and must, of course, be sold dry and mixed just before use.

Asbestos is added to these compounds for two principal reasons:

1. It imparts properties to the compound (mud) which make it flow easily and smoothly when trowelled on, while still remaining viscous enough to stay in place during the initial stages of hardening.

2. The fibers help to make the mud adhere to the joint and form a reinforcing network that reduces shrinkage and cracking as the mud dries.

The asbestos thus is not an impurity or an incidental ingredient but makes an important contribution to product performance. A great deal of research effort has been devoted during the past five years to the development of asbestos-free joint compounds for use by the construction industry. Several manufacturers claim success in that effort but a majority still consider asbestos an essential element of a quality product.

Although there has been a moderate drop in asbestos use in tape joint compounds, most manufacturers, particularly the large regional companies today either do not have an asbestos-free compound or have it available to supply only if the user demands it.

It is recognized that the commercial and consumer markets may have different product performance requirements. The commercial installer must have a product which can be applied rapidly over extended time periods and which will require a minimum of work-over and refinishing. The home repair craftsman is not under this "production" pressure and could use a product which is more difficult to handle. On the other hand, the consumer-user generally does not have the tools or the skill of the professional and needs all the help he can get from product performance. There should be well documented reasons if he is to be required by law to use less satisfactory materials.

The Size and Character of the Market

The following very approximate calculations serve to illustrate the principal characteristics of the market. In 1975, about 10,000 tons of asbestos were used in the manufacture of tape joint and similar compounds. The amount of asbestos used in each product varies considerably but an average quantity of 3% by weight should be approximately correct. On this basis, total annual production would be on the order of 350,000 tons of compound.

According to petitioners, \$6.9 MM worth of patching compounds were sold in the consumer market in 1975. The average unit was about one quart at a price of \$2.00. Using these figures and assuming that all of this compound contained 3% asbestos, values of 5,390 tons of compound containing 160 tons of asbestos are obtained. Consumer products thus appear to represent somewhat less than 5% of the total usage of patching compounds.

It also is appropriate to examine the significance of the quart of compound cited in the petition as the typical purchase size. A quart of ready-mix compound weighs a little over three pounds and will finish about 45 square feet of drywall. This is less than two of the standard size 4' X 8' gypsum board sheets and appears to be a reasonable quantity for the usual do-it-yourself craftsman.

Most of the packaging and distribution of products to the consumer market is done by one or two of the large building products companies, several larger companies that specialize in the consumer tape joint compound field, and a substantial proportion of the major paint manufacturers who market through their own distribution outlets. The medium to large regional manufacturing companies which have a substantial share of the commercial TJC business generally are not involved. Consumer TJC is distinguishable from commercial TJC in that the consumer product finally passes into and through mass distribution retail outlets.

The question of container size is particularly relevant to the issue raised by the petition. TJC for retail distribution typically is packaged either in a one gallon container of the wet type or in a one pound or five pound package of the dry type. The largest clearly identified consumer product found in our brief survey was a kit containing 18 lbs. of wet compound plus tape which was intended for use in the installation of 250 sq. ft. area, i.e., a small room. Some large retail stores, however, stock limited quantities of commercial 5 gallon pails for the convenience of the smaller commercial contractor. While it is conceivable that a home-craftsman might purchase one of these 5 gallon pails, it would be a rare home repairman who would undertake a complete three room finishing job. Ready-mix compound intended for commercial use, by contrast, universally is packaged either in 5 gallon pails (62.5 lbs.) or in 25 lb. polyethylene bags in cardboard boxes. If these commercial containers are judged to be "... packaged in a form suitable for use in the household" the ban requested by the petitioners will apply, not just to the consumer market (5% of the total), but to the entire market, commercial as well as consumer.

III ASBESTOS EXPOSURE DURING DRYWALL INSTALLATION

The petitioners do not provide any data which show the level of exposure that occurs during use of the compounds at a scale and under conditions likely in consumer use. The only data presented is that of Rohl et al (Reference 7) obtained during a test performed at one location by commercial drywall workers. Materials were handled on a much larger scale than that which must be considered here. Exposures recorded were high, and it is alleged that exposures in consumer use would be similar.

Subsequent to the Rohl et al work, Rhodes and Ingalls (1) conducted a study of asbestos dust levels during sanding at six locations throughout the United States. These tests were run at commercial jobsites selected to represent the range of sanding conditions typically encountered in the construction industry, and samples were collected during routine operations. The results are compared with those cited by Rohl in Figure 1.

When very large differences in dust levels between the two studies became apparent, samples from three locations in the Rhodes and Ingalls Study were counted "blind" by two other laboratories to check the accuracy of the initial calculations. The results of this recount are tabulated below.

INTERLABORATORY COMPARISON
ASBESTOS FIBER COUNTS ;

<u>Sample Source</u>	Airborne Asbestos Fiber Concentration (Fibers/cc longer than 5µm)		
	<u>Base</u>	<u>By Lab A</u>	<u>By Lab B</u>
Location I (Filter #1)	0.4	0.3	0.2
Location I (Filter #2)	0.4	0.0	0.2
Location II (Filter #1)	1.5	1.0	1.6
Location II (Filter #2)	1.3	1.0	0.6
Location III (Filter #1)	0.6	0.0	0.9
Location III (Filter #2)	0.4	0.2	0.2

The author's commentary regarding these differences is shown below:

"Although there is some variation, these are difficult samples to count and the agreement between laboratories is excellent. It is evident that the differences between this survey and that of Nicholson (the Rohl study) are not due to sample analysis. The sanding procedures used to generate dust seem to be the most likely cause. In any case, the Nicholson results do not appear to be typical of the concentrations encountered under most job-site working conditions."

The concentrations described above all were ceiling concentrations obtained during sanding operations. In most cases even commercial operators do not sand for an entire shift so that the 8-hour time weighted average exposure will be considerably less. TWA values for the study cited (1) are shown in the table below:

SUMMARY OF AIRBORNE ASBESTOS
Fiber Concentrations During Drywall Sanding

<u>Location</u>	<u>Ceiling Exposure</u> <u>(Fibers/cc > 5µm)</u>	<u>Exposure Time</u> <u>During Sanding</u> <u>(Hours)</u>	<u>Estimated 8-hour</u> <u>TWA Exposure</u> <u>(Fibers/cc)</u>
New York City, N.Y.	0.4	8.0	0.3
Hialeah, FL	1.0	4.0	0.4
Ft. Lauderdale, FL (Hand)	1.1	1.0	0.1
Detroit, MI	1.3	8.0	0.9
Dallas, TX	1.8	0.5	0.1
Ft. Lauderdale, (Pole)	3.4	3.3	0.6
Niagara Falls, N.Y.	3.6	0.6	0.2

It is our contention that these lower values are much more representative of exposure during commercial operations than those cited by the petitioners. It is also our contention that, because smaller quantities are handled, peak consumer exposures generally will be no greater than the commercial ceiling exposures recorded above. And, since consumers work with tape joint compound infrequently, average or TWA exposures for consumers will be much lower than for commercial operators.

IV THE MEDICAL EVIDENCE

Petitioners cite, in support of their position, a selection of pieces from the medical, scientific and popular literature, some of which items are of questionable value in furthering the regulatory process. Because time does not permit a detailed analysis of each reference cited, we can only offer a few cautionary considerations to be borne in mind when studying the petition:

1. Few epidemiological studies of populations exposed to airborne asbestos fibers offer any definitive or credible evidence of the levels or concentrations of dust which the members of the population may have inhaled.
2. Based upon the recollections of persons familiar with the use of asbestos and asbestos products over the years, it is not valid to assume that past indirect, domestic or neighborhood exposures to airborne asbestos necessarily were either light or intermittent.
3. It can be argued in good faith that the exposures of most, or perhaps all, populations studied to date included a substantial number of high average or massive intermittent exposure to airborne fibers and/or simultaneous exposures to other carcinogens.

Among the references cited by petitioners is the following statement from the October 9, 1975 OSHA Proposed Rulemaking concerning certain occupational exposure to airborne asbestos:

"Because of the variability of individual response to carcinogens and other factors, the concept of a 'no effect' or 'threshold level' may have little real significance on the basis of existing knowledge. While some level, below which exposure to a carcinogen does not cause cancer, may conceivably exist for any one individual, other individuals in the working population may have cancer induced by doses so low as to be effectively zero. (Emphasis added) 72/"

As part of their response to the above noted Rulemaking, the AIA/NA, together with its cooperating companies and trade associations commissioned an outside consultant, Hans Weill, M.D. of Tulane University, to review the literature cited and advise on the significance of any pertinent medical evidence. Dr. Weill's statement is attached for reference. The AIA/NA position statement, taken from its April 9, 1976 response to OSHA is given below. We stand on this position for the present petition.

" SUMMARY OF FINDINGS

The Task Force has reviewed the work of Dr. Weill . . . and . . . has drawn certain conclusions.

Medical Statement

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Although the volume of epidemiological data available for statistical analysis in 1976 is greater than that available in 1972, the conclusions which reasonable may be drawn from those data are not significantly different from conclusions which were, or could have been, drawn in 1972. Then, as now,

qualified experts would conclude that:

1. Asbestos, when inhaled, causes fibrosis (asbestosis).
2. Asbestos, when inhaled, is associated with the development of malignant tumors of the bronchial system and lung and with mesothelioma, (in other words, asbestos is a carcinogen).

Few, if any students of the subject would disagree with the conclusion that there is a dose-response relationship between exposure to airborne asbestos and the development of asbestosis. There is also a substantial body of expert opinion which supports the premise that there is a dose-response relationship between exposure to most, if not all, carcinogens and the development of cancer. There is no reason to believe, from the data available to us, that asbestos is an exception to this generality; although, at this time, no one definitely can say at what exposure level asbestos becomes a cancer hazard to man.

Our view of the literature indicates that no credible epidemiological studies have been published which would suggest an excess of malignant tumors among persons exposed to no more than 2 asbestos fibers per cc of air (TWA), using the prescribed membrane filter test method. This is a fact simply because there have yet been identified for study no populations the exposure experience of which consistently has been as low as 2 fibers. Since all populations studied to date have been exposed to substantially higher concentrations of airborne asbestos, we can conclude only that an excess of all types of asbestos disease is associated with levels of exposure significantly higher than the level currently mandated to become effective on July 1, 1976."

Johns-Manville Corporation, the largest producer of fiber in the western world and the largest manufacturer of asbestos-containing products in the United States, also conducted a detailed medical review and the following conclusions were included in their statement to OSHA. Exhibits B and C from the Johns-Manville response are attached hereto for reference.

From page 4:

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"2. J-M's Review of the Medical References Cited By OSHA"

We have reviewed in considerable detail all of the references cited by OSHA, and conclude from this study that these references totally fail to provide

any sound "new information", as OSHA contends, as a basis or rationale for the Proposal. Specifically, no "new information has been forthcoming on the toxic effects of asbestos," since June, 1972, that justify the substantial modifications being proposed by OSHA. In fact, new information not referred to by OSHA strongly suggest that 2 or perhaps more fibers/cc is not associated with an excess incidence of pulmonary cancer. In addition, we have reviewed all available non-cited relevant scientific publications and data sources, and find that these reinforce our conclusions as to the absence of any scientific basis for the Proposal to to reduce the 8-hour time-weighted average airborne exposure to asbestos from 2 fibers/cc to 0.5 fibers/cc. The results of our detailed review are set forth in Exhibit B attached hereto."

From page 19:

"Our critical review of the carcinogenesis literature through 1975 is attached hereto as Exhibit C. Our review leads us to the following conclusions:

1. A dose must exist below which a carcinogen is ineffective. Chemical carcinogens of every known category, chemical composition, and steric configuration produce more cancers when administered in large doses than smaller ones, and a dose-response curve can be demonstrated for graduated doses.
2. A threshold level exists below which a biological system will not exhibit any adverse effects from exposure to a carcinogenic agent. Chemical carcinogens can be administered at dose levels which yield no cancers in laboratory animal models and, which neither shorten the animal's life span nor result in demonstrable abnormalities in metabolic and physiological capabilities. This is clearly a no-effect (threshold) level.
3. There exists an array of environmental situations in which exposure to chemical carcinogens has failed to result in an increased incidence of cancer. The clear implication is that indeed a sub-threshold level for exposure exists in actuality."

(2)

The following statements made by the National Cancer Institute are also directly relevant to the question:

(2) General Criteria for Assessing the Evidence of Carcinogenicity of Chemical Substances, P. 4.

"B. Criteria in Human Studies

Types of evidence suggesting that an agent is carcinogenic in humans include: neoplastic response directly related to exposure (both duration and dose), incidence and mortality differences related to occupational exposure; incidence and mortality differences between geographic regions related to difference exposures rather than genetic differences and/or altered incidence in migrant populations; time trends in incidence or mortality related to either the introduction or removal of a specific agent from the environment; case control studies; and the results of retrospective-prospective and prospective studies of the consequences of human exposure. Clinical case reports may also provide early warning of a potential carcinogen. Negative epidemiologic data may not establish the safety of suspected materials. Negative data on a given agent obtained from extensive epidemiologic studies of sufficient duration are useful for indicating upper limits for the rate at which a specific type of exposure to that agent could affect the incidence and/or mortality of specific human cancers (Emphasis added.) "

"E. Extrapolation from Experimental Data and Evaluation of Human Risks

The criteria listed above provide a guide to determining whether a compound is carcinogenic under a specific set of exposure conditions in a given species or subpopulation. Quantitative extrapolation from animal studies for the purposes of evaluating human risks entails large uncertainties at the present time. Each case must be individually evaluated, taking into consideration such factors as adequacy of experimental design, statistical significance of the data, dose-response relations, duration of exposure, route of administration, metabolism (including species variations); host susceptibility, co-factors and other modifying factors, and the amount of the material to which humans will be exposed. The criteria for extrapolation may vary depending on the agent in question. (Emphasis added.) "

The National Cancer Institute report does not appear to support the OSHA position that the concept of a "no effect" or "threshold level" may have little real significance.

V STATEMENT OF POSITION

For the reasons cited above, it is the position of the AIA/NA that:

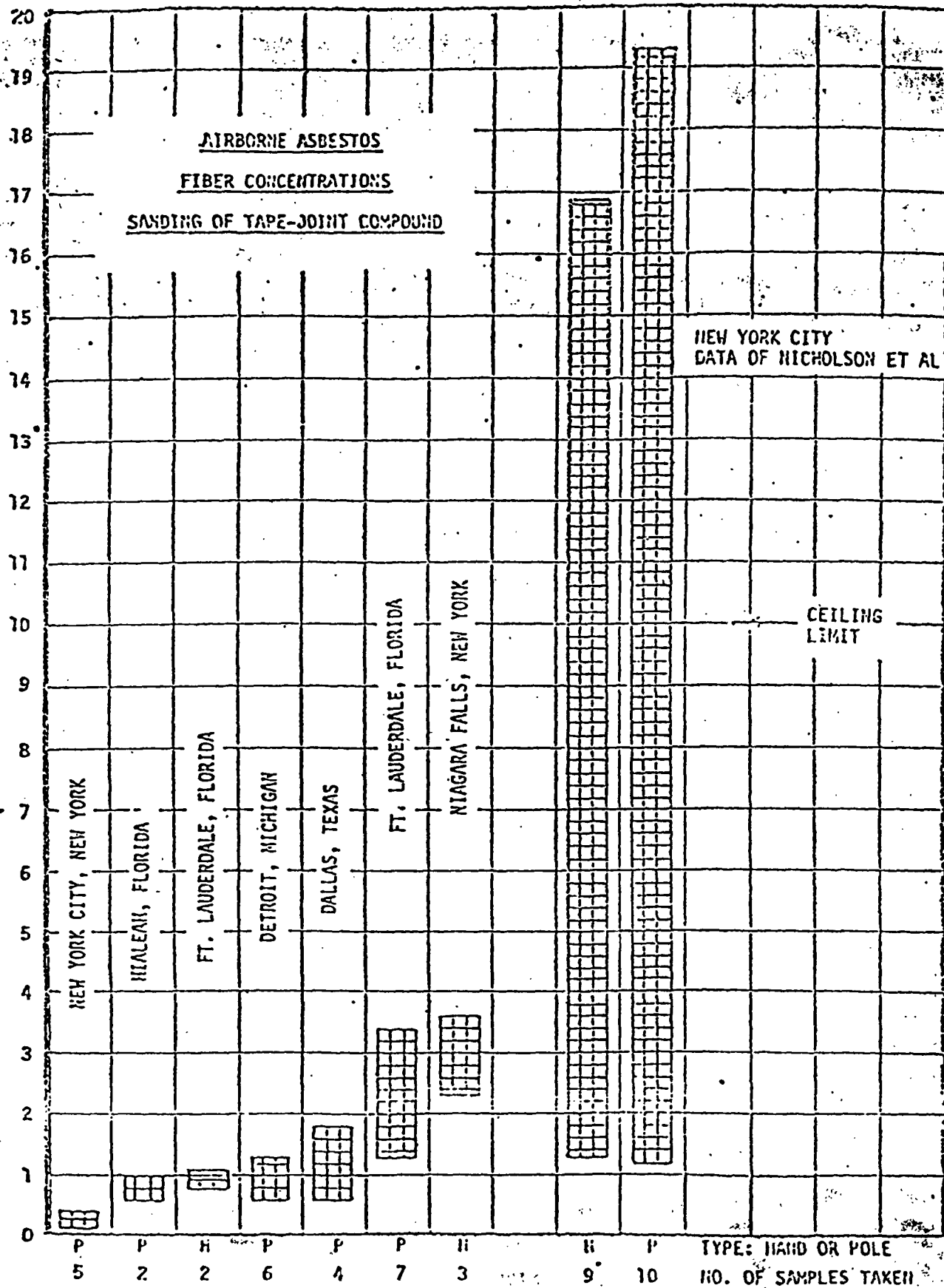
1. Because consumers use tape joint compounds in small quantities and at infrequent intervals, the levels of airborne asbestos to which consumers will be

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exposed by reason of such use will be very low.

2. Even if consumer exposure levels were similar to those in commercial operations, the medical evidence taken in overall does not support the allegation of the petitioners that continued use of asbestos-containing tape joint compounds ". . . will result in a significantly higher incidence of cancer (including lung cancer and mesothelioma)."
3. Because there is no evidence that asbestos-containing consumer tape joint compounds "cause substantial personal injury during or as a proximate result of any customary or reasonably foreseeable handling or use", they are not "hazardous substances" within the meaning of 15 USC Sec. 1261 (f) (1) (A).
4. Unless packages of 5 gallons or 25 lbs. or more are specifically exempted, a ban on the use of asbestos fibers in consumer tape joint compounds may require the elimination of asbestos from all tape joint compounds, whether destined for consumer or commercial use, with a severe and unnecessary adverse impact upon the market for commercial compounds.
5. In general, the petition of NRDC and Consumers Union, U.S.A., Inc., has no merit and should be denied.

AIRBORNE ASBESTOS FIBER CONCENTRATION (fibers/cc longer than 5 micrometers)



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