



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

NOVEMBER 16, 1979

OFFICE OF TOXIC SUBSTANCES

JAN 10, 1980

Mr. Bob Pigg
Asbestos Information Association
1745 Jefferson Davis Highway
Crystal Square 4, Suite 509
Arlington, Virginia 22202

Dear Mr. Pigg:

Enclosed are the minutes of the Environmental Protection Agency's November 13 meeting with the Asbestos Information Association regarding information exchange and the asbestos use Advance Notice of Proposed Rulemaking. Also enclosed are minutes of our November 16 meeting with AIA and the Friction Materials Standards Institute regarding asbestos brake linings. May I prevail upon you to circulate the minutes among your attending members and notify us of any errors or misrepresentations. After AIA's review, the minutes will be incorporated into the public rulemaking docket for commercial and industrial asbestos use.

The Office of Pesticides and Toxic Substances has revised its working paper on potential control options for asbestos rulemaking. I am forwarding the latest version, dated January 9, 1980, for your information and for dissemination among AIA's membership. We would welcome any comments you or your members have on it.

Thank you for your assistance. I look forward to your reply.

Sincerely,

A handwritten signature in dark ink, appearing to read "Rich".

Richard J. Guimond
Chief, Special Regulation Branch

Enclosures

FMSI--0334

FMSI 03528

Asbestos Friction Products Meeting

November 16, 1979

At the request of EPA, CAD staff members met with several asbestos friction product manufacturers on November 16, 1979. The meeting was arranged at the Asbestos Information Association (AIA) offices. A list of meeting attendants is appended to these notes. The purpose of the meeting was to discuss developments in EPA's education program for the protection of asbestos brake mechanics. Miscellaneous issues relating to asbestos friction products and the Advance Notice of Proposed Rulemaking (ANPRM) were also raised.

Richard Guimond of CAD opened the meeting with a status report on the brake mechanics education program. Three handouts describing the program were distributed. An interagency agreement between EPA and the Occupational Safety and Health Administration (OSHA), a draft guidance manual outline on the hazards of exposure to asbestos in friction products, and a list of EPA questions on asbestos friction products. Copies of these handouts are also appended to these notes.

Mr. Guimond explained that the interagency agreement between the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA) provides for the development of a two part brakes safety education package mechanics and a more detailed guidance manual, and film presentation for use in trade schools and apprenticeship programs. The material will be prepared by the Public Media Center of San Francisco. The tentative contract completion date is July 1980. EPA is funding the effort through OSHA's "asbestos alert" contract. A copy of the grant agreement will be forwarded to AIA.

The exact format and content of the educational program have not been determined yet. EPA is seeking industry suggestions particularly on appropriate presentation format and distribution. EPA has already met with the International Association of Manufacturers and the National Institute of Auto Service Excellence to discuss their assistance in disseminating the safety information to workers. John Marsh indicated that Raybestos has already prepared some guidance pamphlets for individuals seeking safety information on brake repair. He offered his company's assistance in reviewing early drafts of the guidance manual. It was also noted that industry has conducted brake related surveys, which could help EPA identify appropriate targets for the education program.

When asked how the anticipated section 6 asbestos rule would affect the education program, Mr. Guimond responded that a remedial program would be needed to protect brake mechanics regardless of ongoing asbestos rulemaking. The anticipated rule will not require retrofitting old brakes neither will automobile manufacturers be required to install nonasbestos brakes in all new cars and trucks in the immediate future. Therefore, asbestos brake repair and replacement work will continue for sometime.

FMSI 03529

The Occupational Safety and Health Administration had started a brake mechanics safety program series, but the program was cancelled after monitoring at garages indicated fiber concentrations below the OSHA 2 fiber/c³ workplace standard. Because EPA believes human health risks exist below this level, the Agency is committed to developing an active education program to further protect workers.

Mr. Marsh asked whether EPA will conduct further monitoring of asbestos fiber emissions from brakes to support section 6 rulemaking. Mr. Guimond responded that EPA believes sufficient data about brake emissions has already been collected. Therefore, EPA does not plan to sponsor extensive monitoring studies.

On the issue of information requested in the October 17, 1979 Advance Notice of Proposed Rulemaking, EPA presented a list of supplemental questions specific to asbestos brake linings. The questions are aimed at determining the extent of substitute research conducted to date, the time and cost involved in research, and the projected commercially availability and cost of nonasbestos brake linings. Mr. Guimond indicated that EPA is reasonably encouraged that a fair portion of new cars will be equipped with nonasbestos brake linings and that substitutes for light trucks are imminent in the near future. On the other hand, substitutes for heavy trucks are not expected for some time. A survey of major friction product producers would help confirm or correct EPA's current information.

Representatives of the Friction Materials Standards Institute (FMSI) agreed to present the questions and the possibility of surveying the Institute's members to the FMSI Board of Directors. If the Board agreed to the idea FMSI would prepare and conduct the survey responses for EPA in an effort to protect confidentiality of business information. FMSI will return to EPA with the Board's decision early in January. A survey will take about three months to complete according to the FMSI estimates. If the Board decides against a formal survey, FMSI may still solicit information from individual members for EPA's information.

ATTENDANT LIST
NOVEMBER 16, 1979

<u>Name</u>	<u>Organization</u>
Al Colli	EPA/CAD
Dave Mayer	EPA/PID
Jane Nowak	EPA/CAD
Richard Guimond	EPA/CAD
I. H. Weaver	Raybestos
E. W. Drislane	FMSI
J. R. Weber	Bendix
John H. Marsh	Raybestos - Manhattan
Tim Hardy	Kirkland and Ellis
C. H. Borcharding	Abex
Bob Pigg	AIA/NA

FMSI 03531

Interagency Agreement Between
The U.S. Department of Labor's
Occupational Safety and Health Administration (OSHA)
and
The Environmental Protection Agency (EPA)

I. Purpose

The purpose of this agreement is to provide for the development of educational and informational materials for vocational/technical students being trained in brake maintenance, their teachers, and mechanics. It is to be accomplished as a result of a contract from RFP L/A 70-54 and will be part of an implementation of Task 4.

The educational materials shall be designed:

- 1) To alert present and future brake and clutch mechanics to the possible health hazards associated with exposure to friction products containing asbestos.
- 2) To train mechanics about hazard-avoidance procedures relating to asbestos exposure from friction products.
- 3) To motivate mechanics to take steps to protect themselves from exposure to asbestos fibers.

II. Scope of Work

The contractor shall perform the following tasks:

Task 1 - Develop an audio visual training presentation

to graphically demonstrate the health hazards associated with exposure to asbestos. This presentation shall alert mechanics to hazards which occur from friction products containing asbestos and to demonstrate appropriate procedures for reducing potential exposure to mechanics, co-workers, and nearby people. One hundred copies of the presentation will be produced and provided to the EPA by OSHA.

The contractor will consider using films, videotapes, slides, or other media. The media selected for presentation should be compatible with the A-V equipment most available to the proposed audience. Subjects to be considered for inclusion in the presentation include:

- 1) Health effects associated with exposure to asbestos.
- 2) Relationship of industrial asbestos workers to mechanic exposure situations.
- 3) Potential exposure to mechanics during brake repair without use of proper procedures.

- 5) Proper repair procedures, and their effectiveness in reducing exposure.
- 6) Sources of additional information about asbestos exposure, risks and controls.

Task 2 - A short pamphlet or leaflet shall be prepared to inform people of the hazards associated with friction products containing asbestos and to outline safe work practices. This pamphlet shall be complementary to the audio-visual presentation but should be usable independently of the audio-visual presentation. One hundred thousand copies will be produced for the EPA by OSHA.

Task 3 - A manual will be prepared to inform instructors at technical/vocational schools of the hazards associated with exposure to asbestos. The manual will also provide a description of suggested work practices for mechanics dealing with friction products. The document will contain sufficient detail to enable the instructor to learn the nature of the hazards associated with exposure to asbestos-containing friction products, the appropriate control procedures and equipment, and other information needed to incorporate this material into the course of study. Sample lecture and laboratory outlines will be provided.

The manual will include a bibliography of additional information on asbestos, exposure to mechanics, control equipment, and recommended procedures. Copies will be distributed to appropriate vocational/technical schools where mechanics are trained. An additional 1,000 copies will be provided to EPA by OSHA

In the completion of these tasks EPA will:

1. Participate in conceptualizing the contractor's plan for this program.
2. Review and approve preliminary draft materials for technical accuracy and content.
3. Review and approve the final Audio-Visual Presentation, Pamphlet and Guidance Manual as described above.
4. Provide a representative to the IAG Work Group for this project.

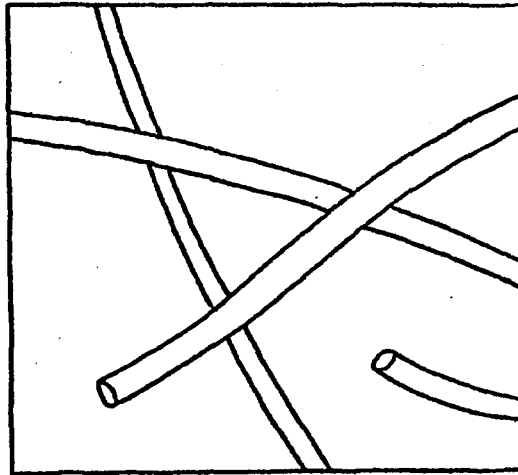
HAZARDS ASSOCIATED WITH EXPOSURE TO ASBESTOS FROM FRICTION

PRODUCTS USED FOR VEHICLES

A MANUAL FOR INSTRUCTORS

1. Nature of Asbestos

- Physical and Chemical Characteristics
 - Ultra - fine fibers



800X (SEM)

-Durable, high tensile strength, chemically and thermally resistant.

- History
- General Use

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2. Use of Asbestos in Friction Products for Vehicles

- Why Used
 - imparts strength, good friction properties, thermal stability, good insulator.
- Where Used
 - Brakes, clutches, gaskets, etc.
 - Automobiles, trucks, buses, construction equipment and railroad cars.
- Extent of Current Usage and Projected Conversion to Substitutes

3. Health Effects from Exposure to Asbestos

- Description of Diseases
 - Asbestosis
 - Lung Cancer
 - Mesothelioma
 - Cancer of the esophagus, stomach, colon and other organs.
- Dose Response Considerations
 - Human exposure and disease case studies.
 - Latency period for contracting disease.
 - No safe threshold exposure level has been established.
 - Effect of cigarette smoking.

4. Human Exposure to Asbestos Resulting from Current Practice

- Description of procedures frequently used to service vehicle braking systems.
- Brief description of measurement methods.

- Asbestos levels measured during brake maintenance and repair
- Uncertainties in Current Measurement Methods
 - particles smaller than 5um not counted.
 - peak exposure not accurately measured.

5. Recommended Procedures and their Effectiveness in Reducing Exposure to Asbestos

- Dry Vacuum
- Wet Rag Wipe
- Wet Spray
- Disposal of Wear Debris
- Use of Approved Respirators
- Disposal

6. Government Regulations to Reduce Human Exposure to Asbestos

7. Sources of Additional Information

- EPA } _____ Toll-Free Telephone Numbers
- OSHA } _____
- NCI } _____
- EPA } _____ Regional Offices
- NIOSH } _____
- Bibliography

8. Syllabus for Course of Studies

- Lecture Series
- Laboratory Practice

NOTE: The contractor is to place visual aids at appropriate locations in this manual to augment the text.

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Informational Needs for Friction Products Containing Asbestos

1. What are the basic ingredients used in nonasbestos linings for disc brakes? Specific formulations are not necessary.
2. What are the basic ingredients under consideration for use in nonasbestos linings for drum brakes? Specific formulations are not necessary.
3. What data or evaluations are available regarding the health effects of nonasbestos brake linings or materials used in them?
4. What are the performance characteristics and the problems associated with the use of substitute products for brake linings containing asbestos?
5. Are nonasbestos brake pads used in conjunction with asbestos pads? For example, is the outer part of the pad nonasbestos and does the inner pad contain asbestos?
6. Are nonasbestos brake pads interchangeable with asbestos brake pads? If the vehicle has a nonasbestos pad as original equipment, must the replacement pad be nonasbestos?
7. Are the composition and manufacture of nonasbestos brake linings developed by your company protected by patent or are they trade secret?
8. Are there mechanisms for the transfer of this technology to other companies who manufacture brakes for vehicles? For example, would your company consider licensing of the technology to manufacture nonasbestos brake pads?
9. Can nonasbestos brake products be manufactured in existing production facilities or will new facilities be required? What will be the capital and operating costs associated with change over?
10. What is the projected price differential between brake linings containing asbestos and nonasbestos substitutes?
11. Do brake systems which utilize nonasbestos friction products require a different design from brake systems with linings containing asbestos? If component parts for use with nonasbestos linings are different, what is the product price differential?

FMSI 03539

COMMERCIAL AND INDUSTRIAL USE OF ASBESTOS
(Potential Control Options)

JAN 8 1980

SUMMARY OF THE UNREASONABLE RISK FINDING

Human epidemiological and other health studies show that exposure to asbestos at relatively low levels presents a serious human health risk. Throughout the life cycle of asbestos, millions of people are frequently exposed to fibers at levels which present an increased health risk. These risks occur during the manufacture, processing, distribution in commerce, use, and disposal of asbestos and asbestos-containing articles.

Economically feasible substitutes with acceptable performance and health risk characteristics are now available for most asbestos-containing articles and asbestos related uses. Substitutes for other products are now being investigated through research and development. Therefore, reasonable substitutes for most remaining asbestos products should be achievable within ten (10) years. Because of substitute availability, the societal benefits provided by asbestos should not be lost if asbestos use is discontinued. The economic impact from elimination of all asbestos manufacture, processing, and distribution in commerce is not excessive, if accomplished in an orderly scheduled manner which considers adequate time for depreciation of capital equipment and transition to new manufacturing processes.

Therefore, the Environmental Protection Agency finds that the manufacture, processing, distribution in commerce, and export of asbestos and asbestos-containing articles for nonessential uses present an unreasonable risk. To reduce this unreasonable risk

* NOTICE This paper presents a postulated control scenario based upon a possible conclusion regarding unreasonable risk to health from asbestos. This paper is intended for discussion, analysis, and comment. Its circulation does not signify that the paper presents official conclusions, views, or policy of EPA.

and minimize burdens on industry EPA would propose the following actions:

- A. Prohibit all manufacturing, processing, and distribution in commerce of asbestos and asbestos-containing articles after January 1, 1990.
- B. Prohibit all import of asbestos and asbestos-containing articles after January 1, 1990.
- C. Prohibit all export of asbestos and asbestos-containing articles after January 1, 1990.

Millions of people are now exposed and will continue to be exposed to various levels of asbestos fibers as a result of the use of asbestos and asbestos-containing articles. Many articles produced from now through 1990 will present exposure potential to people for additional decades. Elimination of these articles through a specific prohibition on use after 1990 would be extremely expensive, cause major disruption to daily activities, and be highly impractical to implement. Alternatively, labeling all asbestos-containing articles manufactured in the future with appropriate warnings would be inexpensive and provide increased protection to users. Therefore, EPA finds that the processing of asbestos into articles and the use of the articles present an unreasonable health risk. The Agency would require the following action to reduce the risk:

- D. All asbestos and asbestos-containing articles manufactured after _____ must be marked with labels indicating asbestos content, the form of the asbestos (paper, insulation, etc.), that asbestos is a human carcinogen, and that exposure to fibers should be avoided where possible. Labeling requirements to be effective six (6) months after promulgation of this rule.

OPTIONS TO BE DISCUSSED IN THE PREAMBLE

The preamble of the proposed rule could discuss a variety of options for control actions A-D presented above and indicate that the Agency will consider substituting the options. Possible options include:

- ° Make all prohibitions effective sooner (possibly as soon as 1985).
- ° Make all prohibitions effective later.
- ° Phase in the prohibitions - for example, prohibit a few products or categories in 1983 and schedule additional prohibitions to become effective before the 1990 total ban.
- ° Instead of providing exemptions, employ fiber use ceilings to reduce the amount of asbestos imported and mined in the U.S. to a ceiling level for essential uses only by 1990. This could be accomplished in steps over the ten-year period.

ESSENTIAL USES

Some uses of asbestos provide substantial societal benefits, present relatively low exposure potential, do not have reasonable substitutes, or would produce an excessive economic impact if eliminated. EPA considers such uses to be "essential uses." The Agency finds that the manufacture, processing, distribution in commerce and export of asbestos for essential uses does not present an unreasonable risk to human health. Therefore, any manufacturer, processor, distributor, or exporter would be able

to apply for an exemption if his activity involves a product that is an essential use.

EXEMPTION CRITERIA

Any manufacturer, processor, distributor or exporter may apply for an exemption if the use or product for which an exemption is sought meets at least one of the criteria listed in each of the three categories below:

A. Benefits of the product

1. Vital to saving lives from fire or heat (for example, the product is used to make fire protection suits for firemen).
2. Greatly reduces risk to health and safety from fire, heat damage, and other hazards (for example, the product is used to prevent stoves from overheating nearby materials).
3. Provides major contribution to energy conservation.

B. Human Exposure Potential

1. Processing and use of the asbestos or asbestos-containing article is totally enclosed.
2. Asbestos-containing article is encapsulated or asbestos fibers are permanently bound in the product.

C. Substitute Availability/Economic Impact

1. Substitute material for asbestos or a substitute product does not have adequate technical performance characteristics.
2. Substitute material for asbestos or a substitute product presents a greater health risk.
3. Substitute material for asbestos or a substitute product results in a large cost increase.
4. Elimination of the asbestos-containing article or use would have a major national economic impact.
5. Elimination of the asbestos-containing article or use would have a major total impact on small business.

STATEMENT TO ACCOMPANY EXEMPTION REQUEST

To be considered for an exemption, the applicant would submit a statement that describes why his activity meets the above criteria. The applicant would have to demonstrate that he has attempted to find suitable substitute materials for asbestos in his products or for suitable substitute products through research and development and contact with vendors. The statement would have to include the following information:

1. A description of the particular use or uses of asbestos for which the exemption is requested.
2. A description of the function asbestos serves (heat insulation, sound insulation, filler, etc.).

3. Test results indicating why substitute materials for asbestos do not perform adequately.
4. Test results indicating how the substitute materials present a greater health risk.
5. A description of the efforts undertaken to find suitable substitute materials for asbestos fibers or suitable substitute products.
6. A description of the processing steps and environmental controls that reduce or could reduce exposure to asbestos in the fabrication of articles.
7. Test results indicating exposure potential from use and possible misuse of the asbestos-containing product.
8. Cost data for the proposed exempt asbestos product and the substitute products and materials.
9. Data describing the national economic impact of product or use elimination or the impact on small business.
10. Estimates of the reduction in fire or other risk through use of the asbestos or estimates of energy savings through the use of the asbestos.
11. Estimates of the overall impact of denying the exemption (e.g., impact on employment, allied industries, etc.).

EXEMPTION PROCESS

If a broad prohibition of asbestos manufacturing, processing, distribution and/or use is promulgated, EPA would issue essential use exemptions in accordance with the following two-step process:

1. Step 1 would take place between January 1, 1985 and December 31, 1985. In the first quarter of that year, companies seeking an exemption would have to submit a preliminary exemption application to EPA. EPA would then review the application based on the criteria listed above. The Agency would hold public hearings on all applications and issue its decision by the end of the year. If EPA approves a company's application, the company can enter step 2 of the process. Approval of a preliminary application means that EPA finds a high probability that the exemption will be granted. Step 1 serves to narrow the field of actual exemption requests. Companies without step 1 approval may not apply for an exemption in step 2.
2. Step 2 would take place between January 1, 1989 and December 31, 1989. In the first quarter of this year, companies would submit their request for an exemption. The request must indicate that subsequent to approval of the preliminary application the company has conducted research for an asbestos substitute, but that the research has not uncovered a reasonable marketable substitute. EPA will once again review the request in light of the Agency's exemption criteria, hold public hearings, and issue a formal Agency ruling by the end of the year. Where EPA makes a finding of essential use, companies would receive exemptions for a limited period (possibly 2-4 years). These companies would have to apply to EPA for exemption extension at the end of these periods. Any company which does not receive an exemption in 1989, or is denied an exemption renewal would be subject to the 1990 prohibitions.

The agency needs only to receive one application on a representative product or use for the exemption to apply to a whole group of similar products or uses. For example, if a company or a trade association submitted an exemption request for product X and EPA granted it, the exemption would apply to all manufacturers, processors, or distributors, and exporters of product X.

SECTION 8(a). RECORDKEEPING AND REPORTING RULE

EPA plans to issue a section 8(a) rule for general reporting and substitute reporting.

The general reporting requirements would be effective in 1980 and would apply to specifically identified asbestos manufacturers and processors. The objective would be to obtain asbestos related processing and economic data not readily available in the literature. The information would help EPA ensure that data possessed by industry supports conclusions derived from EPA's analysis of more accessible data.

The substitutes reporting requirements would be effective in 1983 and would apply to manufacturers and processors who have conducted or are in the process of conducting substitute research. The purpose of the rule is to facilitate EPA's review of exemption requests. The rule would require submittal of the following information:

1. Company name.

2. Asbestos products processed. (Identity and quantity).

For the past five years:

- units of product produced per year.
- total pounds of asbestos used.

- total value (\$) of products per year.
- 3. Description of function of asbestos in the product.
- 4. Description of marketable substitutes for asbestos produced and sold.
 - comparison of technical characteristics.
 - comparison of cost.
- 5. Description of substitute research underway.
- 6. Description of substitute material or product being tested.
- 7. Focus of tests:
 - performance
 - health effects
 - manufacturing techniques
 - market research
- 8. Method of testing.
- 9. Schedule of testing.
- 10. Test results.
- 11. Test costs.

SUBSTITUTE TESTING

To augment health effects information collected through the section 8(a) rule on substitutes, EPA would also issue a section 8(d) reporting rule in 1983. The rule would apply to all companies manufacturing and processing asbestos substitutes and substitute products. EPA would require that these companies report the results of any health studies on substitutes. EPA would also consider sponsoring a program to evaluate performance characteristics of substitutes.