NEWSLETTER

Newsletter from the Chrysotile Institute

For safe and responsible use of chrysotile

Volume 9, Number 2, November 2010

EDITORIAL

Letter to the European Commission (EC)

On October 4, 2010, the Chrysotile Institute wrote to the EC regarding asbestos substitutes

"The Chrysotile Institute is a tripartite organization made up of the Quebec and Canadian Government, trade unions and industry. Established in 1984, the Institute has for mandate the promotion of the safe and responsible use of chrysotile fibres. And, it was only natural that this approach be applied to other fibres. As you know, today chrysotile is the only type of "asbestos" fibre commercialized in the world and mainly in fibre-cement products (95%).

It is worth mentioning again that the other family of the commercial category "asbestos" are amphibole fibres. Amphiboles are fundamentally different from chrysotile, the latter being less dangerous according to the best scientific studies.

Over the years and on numerous occasions the Chrysotile Institute has tried, unsuccessfully, to draw the attention of EU officials to the fundamental necessity of having a scientific review and a real analysis of the potential health risk of replacement fibres and products.

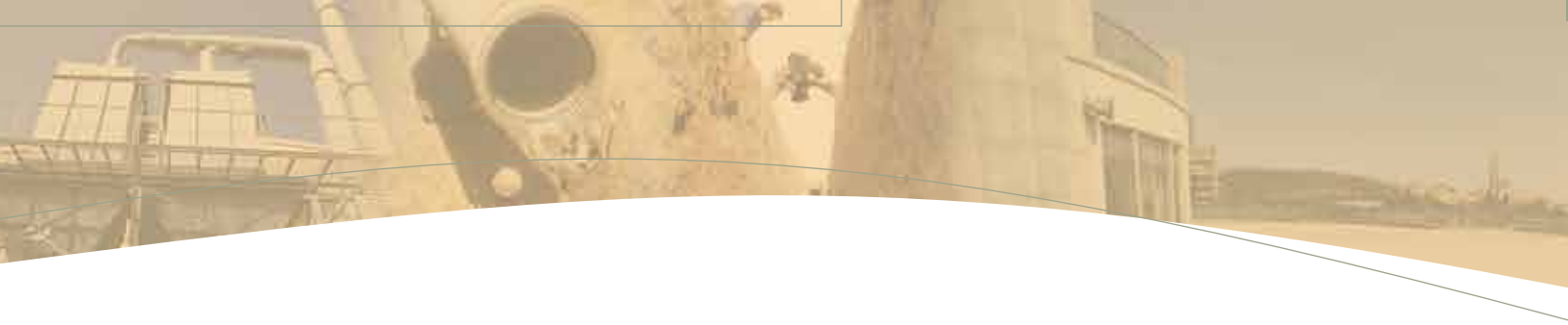
Many agencies, institutes and associations, from many countries, have voiced this same concern but it seems they have not been heard by the competent authorities on this matter.

To recapitulate, in 1999 the European Union banned the use of asbestos, including chrysotile, effective 2005, except for certain industrial applications. The adopted EC Directive 199/77 EC July 26, 1999 also called for a scientific review before the deadline of 2005. The scientific review was carried out in 2003 with the aim to compare the risks between chrysotile and its substitutes. This legal request that a further review of new scientific data be undertaken was not done.

Quote:
"*Whereas the scientific knowledge about asbestos and its substitutes is continually developing; whereas the Commission will therefore ask the Scientific Committee on Toxicity, Ecotoxicity and the Environment to undertake a further review of any relevant new scientific data on the headline risks of chrysotile asbestos and its substitutes before 1 January 2003; whereas this review will also consider other aspects of this directive, in particular the derogations, in light of technical progress; whereas, if necessary, the Commission will propose appropriate changes to legislation*;" Unquote.

Furthermore, as the Scientific Committee on Toxicity, Ecotoxicity and the Environment (SCTEE) could not properly analyze the potential health risk of the replacement fibres and products, it has become increasingly worrisome for many international organizations in many countries.

It is important to recall that the SCTEE's report recommended:
Quote "*The CSTEE also reiterates its recommendation that these conclusions should not be interpreted in the sense that environmental control of the workplaces where the substitute fibres are produced or used can be related.*" Continued on page 2



EDITORIAL - (Continued)

Finally the CSTEE strongly recommends expansion on research in the areas of toxicology and epidemiology of the substitute fibres as well s the technology of development of new, thicker (less respirable) fibres." Unquote.

Another matter of great concern has also been brought to our attention and that is the omission of Recital (2) from Directive 2003/18/EC in the codification procedure of Directive 93/477/EEC and its amendments leading to Directive 2009/148/EC on the protection of workers from the risks related to exposure to asbestos. This Directive entered into force in the 27 EU countries last January.

Indeed, on the 10th of June 2009 at its 454th plenary session, the European Economic and Social Committee unanimously adopted the opinion by which it essentially supported the proposal, but called on the Commission to take account of the reservations raised and to amend the text of the recitals accordingly.

> *2.2.5 The Committee nevertheless feels that there are **shortcomings in respect of the codification of the recitals**. Several of the recitals appearing in previous directives are not included in the codification. In some cases, these omissions represent more than purely editorial changes. They affect fundamental aspects which the EU legislator has judged important to draw attention to.*
>
> *2.2.6. This is the case with **recital (2) of Directive 2003/18/EC** where the EU legislator points out, inter alia, **the importance of a preventive approach with regard to substitute fibres for asbestos. This is particularly important so as to ensure that the alternatives used do not pose any health problems**.*

Since these European Economic and Social Committee (EESC) reservations, as far as we are informed, were not taken into account by the European Commission nor by the European Parliament or the Council, we hereby address you with the hope of clarifying what are the reasons supporting the omission, during codification, of the aforementioned Recital keeping in mind that millions of workers in the EU are currently exposed to substitute fibres and often without scientific evidence about their innocuousness and their potential health risk."

The European Commission's response to this letter has been a very brief acknowledgement of receipt.

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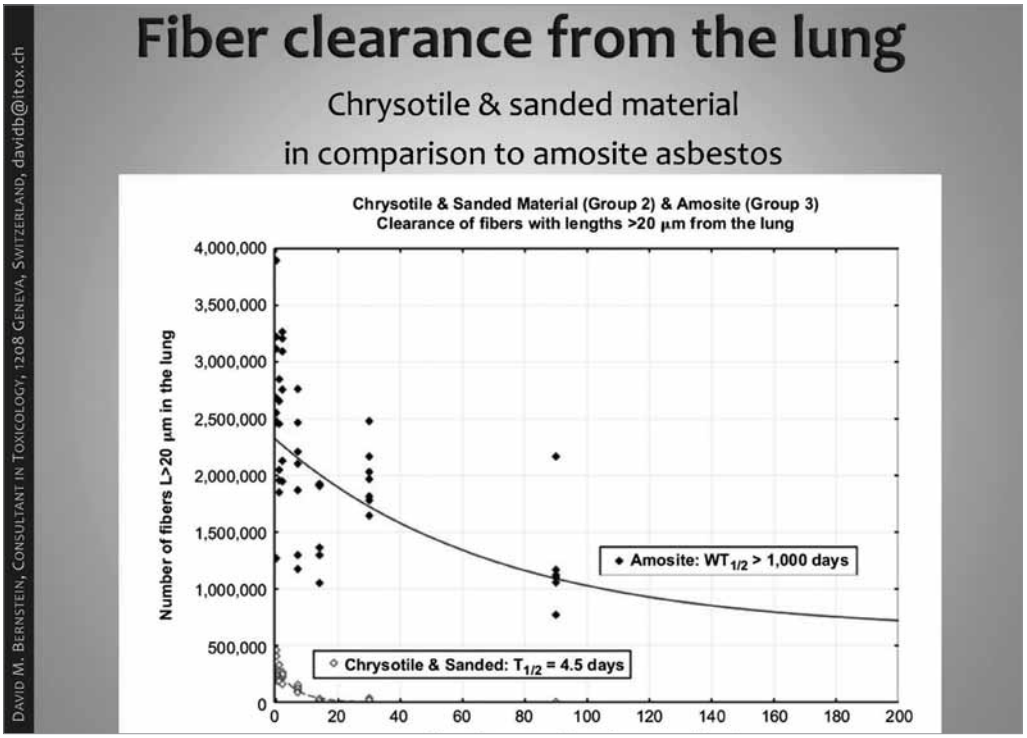
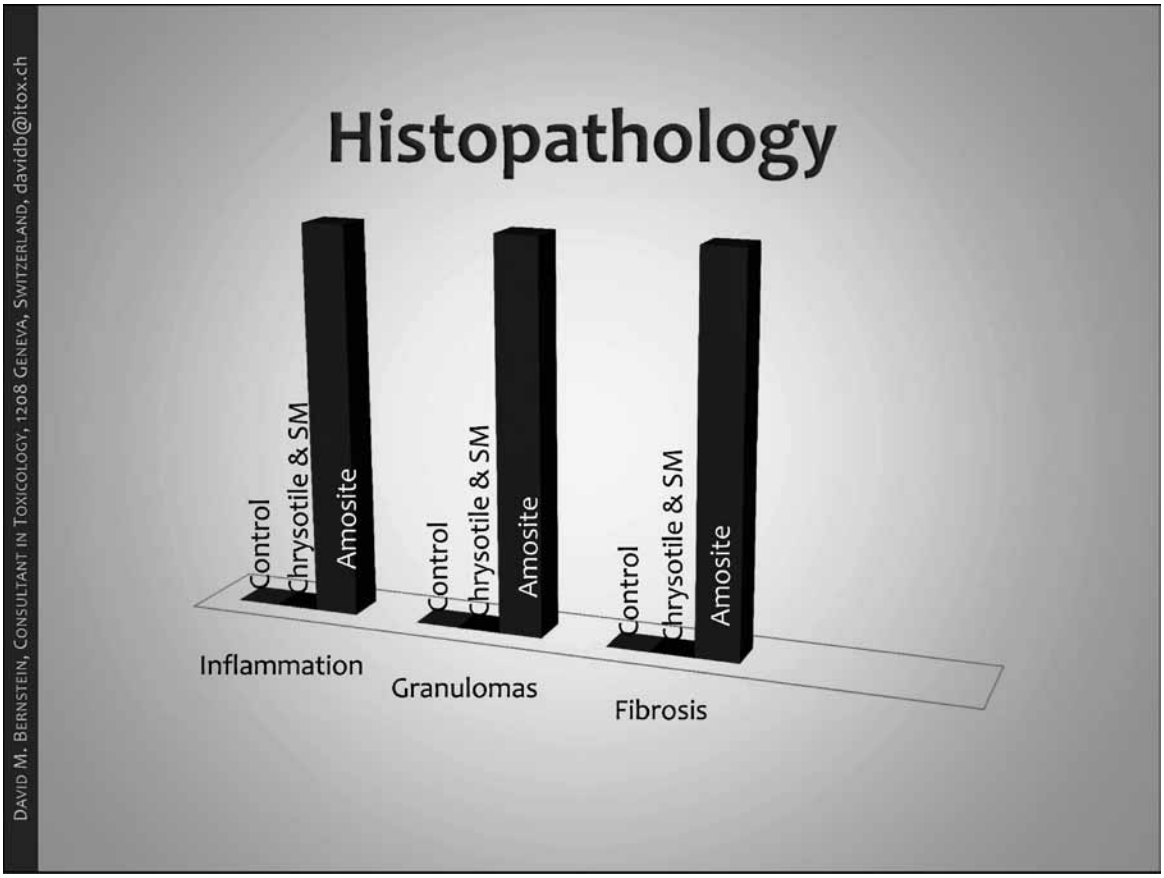
ABSTRACT
The pathological response and translocation of a commercial chrysotile product similar to that which was used through the mid-1970s in a joint compound intended for sealing the interface between adjacent wall boards was evaluated in comparison to amosite asbestos. This study was unique in that it presents a combined real-world exposure and was the first study to investigate whether there were differences between chrysotile and amosite asbestos fibers in time course, size distribution, and pathological response in the pleural cavity. Rats were exposed by inhalation 6h/day for 5 days to either sanded joint compound consisting of both chrysotile fibers and sanded joint compound particles (CSP) or amosite



Extract: Chrysotile Product Evaluation, The pathological response and fate in the lung and pleura, David Berstein, 2010

asbestos. Subgroups were examined through 1-year postexposure. No pathological response was observed at any time point in the CSP-exposure group. The long chrysotile fibers (L> 20 um) cleared rapidly ($T_{½}$ of 4.5 days) and were not observed in the pleural cavity. In contrast, a rapid inflammatory response occurred in the lung following exposure to amosite resulting in Wagner grade 4 interstitial fibrosis within 28 days. Long amosite fibers had a $T_{½}$ > 1000 days and were observed in the pleural cavity within 7 days postexposure. By 90 days the long amosite fibers were associated with a marked inflammatory response on the parietal pleural. This study provides support that CSP following inhalation would not initiate an inflammatory response in the lung, and that the chrysotile fibers present do not migrate to, or cause an inflammatory response in the pleural cavity, the site of mesothelioma formation.



Extract: Chrysotile Product Evaluation, The pathological response and fate in the lung and pleura, David Berstein, 2010

AN OPEN LETTER, PUBLISHED IN LAVAL UNIVERSITY'S *JOURNAL DE LA COMMUNAUTÉ UNIVERSITAIRE LAVAL*, March 18, 2010 edition, Volume 45, number 25, is translated here for you.

Asbestos and chrysotile: mixing apples and bananas

By **Georges Beaudoin,** Geo., Ph.D.,
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The debate regarding the safe use of chrysotile is being distorted by confusion over the nature of the minerals that have been marketed under the name "asbestos". Asbestos is not a mineral, but rather the name used to market products composed of mineral fibres with useful mechanical, thermal and chemical properties. In fact, we are actually talking about six minerals belonging to two different families: 1) serpentine chrysotile forms a layer that curls around itself, like a roll of paper, and that gives silky and flexible fibres; 2) amphiboles comprise a vast family of minerals that are needle-like rather than layered. Amphiboles have varying chemical compositions (Fe, Mg, Ca, Na) and different physical properties. Chrysotile and amphiboles are not formed in the same geological environments. Chrysotile and amphiboles are therefore very different minerals, with the exception of having a fibrous form. Lumping them together is like mixing apples and bananas. In the current public health debate, we are particularly concerned that this confusion about the mineral fibres commonly known as asbestos continues to fuel conventional wisdom. It is obvious that some of those involved in the debate have neither the competence nor the expertise to differentiate between these minerals. Several studies demonstrate that amphiboles remain in the organism 10 times longer than chrysotile. Other studies show that it takes a dose of chrysotile several hundred times higher to induce a risk similar to that of certain amphiboles. Despite the scientific evidence that differentiates the health effects, chrysotile and amphiboles continue to be lumped together under the name "asbestos". It is particularly deplorable that the *Institut national de santé publique du Québec* (INSPQ – public health institute) does not distinguish between them. Specifically, the INSPQ uses a method that provides for counting fibres, but not for differentiating among them! It does not even differentiate mineral fibres from others, such as cellulose. The fibre content established by the INSPQ is therefore the concentration of fibres from all sources. This concentration is not a reliable figure; using it in the current debate amounts to mixing vegetables, apples, bananas and other fruits: quite the salad! We believe it is important to call a spade a spade in the debate over the safe use of chrysotile. Epidemiological studies that consider the mineralogy of fibres should be undertaken in order to clearly establish the risk associated with the different uses of chrysotile. That is what the American National Institute for Occupational Safety and Health recommends. The method used by the INSPQ to measure fibre content should provide for determining the proportions of different minerals. Decision makers should act based on reliable and complete information in order to establish criteria that allow the safe use of chrysotile, where appropriate. We should stop mixing apples and bananas.

Clarifications in the asbestos debate

In their open letters that appeared under letters to the editor of the *Fil des événements* (news and events) on March 25, Messieurs Bonnier Viger and Turcotte accuse us of being victims of disinformation campaigns and of believing in urban legends. In a condescending tone, Mr. Turcotte attributes our opinion to a fit of bad temper and hurt feelings, saying we want to share our irritation with everyone concerned. All this wrapped in a shroud of doubt as to our integrity and suspicion with regard to our intentions.

Notwithstanding the inappropriately paternalistic tone, we would like to restate the indisputable scientific facts, i.e., that what is called "asbestos" includes very different minerals, and that measures of the concentration of asbestos fibres in the air are incapable of distinguishing among the various minerals, or even between mineral and non-mineral fibres.

We would like to see the debate revolve around facts, rather than denigration and personal attacks. The facts:

1 The INSPQ is aware that the method being used does not provide for counting "mineral fibres". It suffices to read their most recent report on fibres in the ambient air at Thetford Mines (2009, p. 3): "The analysis by light and phase microscopy does not allow for specifically differentiating among types of asbestos fibre. All other types of fibre (cellulose, artificial fibres, etc.) are therefore included, which may lead to an overestimation of the actual concentration of asbestos fibres." (TRANSLATION)

2 Messieurs Bonnier Viger and Turcotte both confirm what we are saying. Mr. Bonnier Viger implicitly recognizes that chrysotile is less potent than amphiboles, which clearly demonstrates that these minerals cannot be combined under the name asbestos, as we have claimed based on our scientific expertise. Mr. Turcotte wonders why identify chrysotile and amphiboles if they are both carcinogenic, withouttaking into account current scientific literature that reports significant differences

in biopersistance and health risk (for the most recent peer-reviewed journal in the scientific literature, see Kamp 2009(1)).

In fact, the National Institute for Occupational Safety and Health in the United States proposes that "To reduce existing scientific uncertainties and to help resolve current policy controversies, a strategic research program is needed that encompasses endeavors in toxicology, exposure assessment, epidemiology, mineralogy, and analytical methods."(2) This report was reviewed by the Academies of Sciences of the United States. These are not "urban legends", nor "disinformation campaigns", but the current state of scientific knowledge.

(1) Kamp DW (2009) Asbestos-induced lung diseases: an update. Translational Research 153: 143-152

(2) http://www.cdc.gov/niosh/review/public/099C/pdfs/AsbestosRoadmapPublicCommentDraftV4.pdf

THE AMERICAS ARE FAR AWAY FROM HAVING BANNED CHRYSOTILE

We are informed that of the 18 Latin American countries, only five have implemented a ban. It is worth remembering that the use of chrysotile is permitted in Mexico, Brazil, Bolivia, Colombia, Cuba, Ecuador, Guyana, Peru, Surinam and Venezuela, as well as Belize, Costa Rica, El Salvador, Guatemala, Nicaragua and Panama.

Canada has not banned it, nor has the United States. The following is a list of products containing chrysotile whose use is approved in the United States:

- Asbestos Cement Corrugated Sheets
- Asbestos Cement Flat Sheets
- Asbestos Cement Pipes
- Asbestos Cement Shingles
- Asbestos Clothing
- Pipeline Wrap
- Roofing Felt
- Vinyl Asbestos Floor Tile
- Automatic Transmission Components
- Clutch Facings
- Disc Brake Pads
- Drum Brake Linings
- Brake Blocks
- Speciality Industrial Gaskets
- Gaskets
- Textile Products
- Non-Roofing Products
- Roof Coatings
- Acetylene Cylinder Filler
- Arc Chutes
- Asbestos Diaphragms
- High-grade Electrical Paper
- Battery Separators
- Missile Liners
- Packings
- Reinforced Plastic
- Sealant Tape
- Friction Materials

SOME COURT DECISIONS OF INTEREST

It is increasingly questioned whether the use of chrysotile alone in cement or friction products, causes mesothelioma. And, over the recent years, several cases brought forward by proponents of a total ban have been rejected by governments and courts.

For instance, the Supreme Court of India rejected a complaint against asbestos cement on the grounds that the applicants could not prove that this material is dangerous to health when properly controlled. A similar situation arose in the United States, where the Fifth Circuit Court of Appeals rejected the EPA's contention when it could not prove that chrysotile substitutes were safer, in fact, quite the opposite. In June of 2001, the Supreme Court of Brazil rejected an appeal filed by pro-ban activists who wanted to put an end to the production of asbestos cement products.

MINING RESIDUE AND THE ENVIRONMENT

A team of researchers from Laval University recently discovered and publicized a very interesting natural phenomenon in the Thetford Mines area. There are vents that form chrysotile mining residue tailings that give off enough heat to melt snow in winter. This is a natural reaction to the capture (sequestration) of atmospheric CO_2 inside the chrysotile tailings, which produces heat, and which then escapes through the vents.

The Laval University research received financial support from the Research Chair of the Quebec *Ministère du Développement durable, de l'Environnement et des Parcs* (Department of Sustainable Development, Environment and Parks) on the geological sequestration of CO_2. The fact that tonnes of CO_2 could be sequestered by mining residue is excellent news for the reduction of greenhouse gases. Experiments are currently being conducted to determine whether the quantity of CO_2 captured by the tailings can be optimized. It may one day be possible for researchers to drill down into the tailings to see exactly how the gas is captured.

Among future topics for study: the possibility of enabling CO_2 emitters to get rid of this greenhouse gas by stocking it in mining residues; and the possibility of recuperating the heat produced and using it for heating.

NEUTRALIZING AND FINDING VALUE IN ASBESTOS WASTE

As read in *Science & Vie*, by submerging asbestos into an acid bath for one month, the asbestos is first rendered harmless and transformed into highly sought after mineral compounds, zeolites, very much in demand by the chemical industry. According to information received, this is a research project undertaken over the past 5 years by the French *Agence de l'Environnementet de la Maîtrise de l'Energie* (ADEME - Environment and Energy Control Agency), and coordinated by the Société Méditerranéenne des zéolithes (SOMEZ).

This Newsletter is available in English, French and Spanish.

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