



---

## CPHA POSITION STATEMENT

---

# Call for a Ban on the Mining, Transformation and Export of Chrysotile Asbestos

### BACKGROUND

---

Asbestos is the generic name for a variety of silicate minerals whose crystals occur in fibrous forms. The term "asbestos" was adopted for commercial identification. The two major groups of asbestos are based on their physical/chemical properties. One group is known as serpentines (chrysotile, white asbestos); while the other group is the amphiboles (amosite, brown asbestos; Crocidolite, blue asbestos; Anthophyllite; Tremolite; and Actinolite). Chrysotile is the only type of asbestos that is commercialized today.

As early as 1898, British government factory inspectors recognized adverse health effects associated with exposure to asbestos fibres.<sup>1</sup> By the 1930s, the scientific evidence of the association between asbestos exposure and non-malignant respiratory disease was well established.<sup>2</sup> With the publication of Irving Selikoff's study of insulation workers in 1964,<sup>3</sup> the evidence of carcinogenicity was incontrovertible.

Historically, asbestos fibres have been used in a wide variety of industrial applications. Due to the health risks associated with asbestos, many of these applications have been abandoned and strict regulations have been placed on asbestos use. In Canada, the use of asbestos in construction has been widely discontinued since the mid-1970s.<sup>4</sup> Nowadays, more than 93% of the world production of chrysotile is used in chrysotile-cement for building construction, pipes, sheets and shingles. Another 5% is used in friction materials (automobile brake shoes, disk pads, clutches and elevators brakes), and in specialty products (gaskets, roof sealants, textiles, plastics, rubber, door seals for furnaces, high temperature caulking, paper and components for the military and the nuclear industry) in which fibres are encapsulated.<sup>5,6</sup>

Globally, asbestos continues to pose significant health hazards to workers in the mining, construction, textile and automobile industries through work with, among other things, textile tapes, gloves, and fillers. Another source of exposure comes from the dust containing aerosolized asbestos fibres which is produced by cutting through asbestos-cement and puts workers at risk of inhaling high concentrations. Over time, asbestos products deteriorate and become friable because of natural wear and tear, renovation, demolition and natural disasters, resulting in the potential for wider environmental exposure.

Chrysotile asbestos represents 100% of the current world asbestos trade and ninety-five percent of all asbestos ever used. Canada is the only western industrialized country that still continues to mine and manufacture asbestos for exportation from the Townships of the Lac d'Amiante in Quebec, the only mine left in operation in Canada today. In 2006, exports represented 92% of total asbestos production in Canada. That same year, Canada was ranked the world's fifth largest producer of chrysotile.<sup>7</sup> Canada is a net exporter of chrysotile fibres, but imported manufactured products are valued at \$111 million from more than 40 countries, comprised mainly of friction materials, tubes, pipes, corrugated sheets and panels.

## ISSUE

---

### **Asbestos: A Public Health Issue**

The scientific consensus today is that all types of asbestos fibres, including chrysotile, cause asbestosis, lung cancer, and other cancers most specifically mesothelioma.<sup>8</sup> Currently, regulatory and advisory bodies such as the International Association for Research on Cancer (IARC), the American Conference of Governmental Industrial Hygienists, the US Occupational Safety and Health Administration and the European Union categorize all forms of asbestos as carcinogenic to humans. In Canada, non-encapsulated asbestos-containing products are regulated or prohibited under the Hazardous Products Act as they are likely to release free fibres into the environment which can be inhaled and cause adverse health effects.

In a global context, the World Health Organization (WHO) estimated that currently 125 million people are exposed to asbestos at the workplace. According to global estimates at least 90,000 preventable deaths occur each year from asbestos-related lung cancer, mesothelioma and asbestosis resulting from occupational exposure.<sup>9, 10, 11</sup>

The magnitude of the public health problem related to asbestos in Canada (its mining and use) over the last 50 years is significant. According to the Confédération des syndicats nationaux, the workers' compensation figures for 2009 indicate that 84% of deaths from occupational disease in Quebec were caused by asbestos.<sup>12</sup> Other statistics confirm that Quebec is experiencing an epidemic of asbestos-related disease. Data compiled by Statistics Canada showed 134 new cases of mesothelioma reported in Quebec in 2004.<sup>13</sup> The Quebec National Public Health Institute (INSPQ) also reported 211 cases of asbestosis in 2004.<sup>14</sup> These data likely underestimate the situation, since data tend to show that for every case of mesothelioma, asbestos causes two to three times as many cases of lung cancer<sup>15</sup> and because symptoms for asbestos-related disease can take 10 to 50 years to manifest.<sup>16, 17</sup>

## CONSIDERATIONS

---

### **Deceptive Commercial and Exporting Practices**

The chrysotile asbestos industry in Quebec, Brazil, Kazakhstan, Zimbabwe and Russia claims that chrysotile asbestos can and is being safely used. In 1997, the Government of Canada (GOC) signed a memorandum of understanding in support of the "responsible-use policy" with Canadian chrysotile producers.<sup>18</sup> The aim of the responsible-use policy is ostensibly to increase workers' protection worldwide. This MOU commits the GOC to assist the industry to encourage the countries importing asbestos to endorse the responsible-use policy and to develop appropriate regulations where they do not already exist. This voluntary industry policy's objective is to supply chrysotile only to those users that are in compliance with their respective national regulations.

### **The Rotterdam Convention**

The Rotterdam Convention was created specifically to protect people in developing countries and countries in economic transition from being harmed by hazardous substances. In many of these countries protections are few and awareness of the hazards associated with such substances is almost non-existent.<sup>19</sup> The Convention provides for Prior Informed Consent, requiring that countries be informed that a substance they may import is hazardous. Despite its support for a responsible-use of chrysotile asbestos policy, Canada is one of the countries along with Zimbabwe, Russia and China, that continues to stand in the way of international consensus by blocking the inclusion of chrysotile asbestos in a list of hazardous substances requiring prior informed consent when exporting them under the Rotterdam Convention.<sup>20</sup>

In recent correspondence with CPHA, both the Minister of Natural Resources and the Minister of Foreign Affairs reaffirmed this position, stating that Parties attending the Rotterdam Convention in Rome in October 2008 were unable to reach a consensus. Although, the conference of Parties agreed to further consider the inclusion of chrysotile asbestos in Annex III of the Rotterdam Convention in 2011, both Ministers did not indicate the position that the GOC intends to defend at the next meeting of the Conference of Parties. However, two Government of Canada's senior officials have stated publicly that Canada will block the recommendation of the Convention's expert body (the Chemical Review Committee) to include chrysotile asbestos on the Convention's list of hazardous substances at the next meeting of the Conference of the Parties to the Rotterdam Convention in 2011.<sup>21,22</sup>

### **Public Funds and Asbestos**

The Chrysotile Institute, a non-profit organization established in 1984, is directed by a Board of Directors made up of asbestos industry, labour and federal and provincial (Québec) government representatives. The President of the CI's Board is registered with the federal Office of the Commissioner of Lobbying of Canada on behalf of the Institute.<sup>23</sup> The Institute receives \$250K in funding from the federal government and \$200K from the Quebec government, as well as from the asbestos industry in Canada.<sup>24</sup> Its objectives include promoting the adoption and application of appropriate prevention and control measures, regulations, standards, work practices and techniques for the safe use of chrysotile. According to the CI's website, it has been involved in conferences and training workshops in cooperation with national governments and the International Labour Organisation (ILO) in more than 60 countries to promote the controlled use of chrysotile in other countries.<sup>25</sup> However, information about the composition of its Board, the publication of annual reports or details about its activities and their impact is not available on CI's website. CPHA requested this information from the CI, but received in reply the Institute's publications including manuals on the safe handling procedures of chrysotile asbestos and multiple studies related to exposure to chrysotile and different types of asbestos.

In 2007, two competitors (LAB Chrysotile Inc and the Jeffrey Mine) merged sales teams to protect the Canadian market share from overseas competition. This resulted in the creation of the Chrysotile Canada Inc., a sales agency aimed at maximizing sales and saving costs. LAB Chrysotile Inc. established in 1986 operates a mine in the Townships of the Lac d'Amiante. LAB Chrysotile shares the same web portal as the Chrysotile Institute at [www.chrysotile.com](http://www.chrysotile.com). It is difficult to clarify the nature of the relationship between the CI and LAB Chrysotile Inc.<sup>26</sup>

### **Workers' safety in importing countries**

The GOC consistently responds that it follows, supports, and promotes the controlled-use approach and the responsible-use policies. It relies on the asbestos industry to voluntarily export only to countries practicing safe use with strict exposure regulations equivalent to

Canada's. At the same time, the GOC claims that implementation of domestic measures to ensure workplace health and safety when using asbestos is a matter of foreign sovereignty.<sup>27</sup> The GOC continues to provide financial support and actively promotes Canadian exports to the remaining markets for asbestos, mainly in the developing countries of India, Sri Lanka, Indonesia, Thailand, and Bangladesh where in fact occupational health and safety systems are poorly positioned to ensure safe asbestos handling.<sup>28</sup>

The health consequences and burden of disease related to asbestos in importing countries is being documented and is expected to become considerable in future years. For instance, over 40% of asbestos used in India comes from Canada and Indian workers in cement products, textile and other industries are beginning to show adverse health effects that portend a large increase in asbestos-related cancers similar to that we are currently experiencing in the developed world.<sup>29</sup> A recent report published by the Mexican Institute of Social Security, a government health agency, indicates a rising number of deaths there as high as 500 per year due to asbestos exposure.<sup>30</sup>

Health experts in Canada and around the world have documented and condemned the misleading information the industry disseminates about the safe use of asbestos in developing countries.<sup>31, 32</sup>

### **Occupational Health & Safety of Asbestos Industry Workers and the State of the Asbestos Industry in Canada**

In 1979, the Government of Canada adopted the controlled-use approach to asbestos. This means that, through the enforcement of appropriate federal and provincial workplace exposure limits and regulations categories of consumer and workplace products and practices under the Hazardous Products Acts, the GOC is able to rigorously control exposure to chrysotile in compliance with the ILO Convention 162 Concerning Safety in the Use of Asbestos.

In 2007, Health Canada brought together international experts to determine the potency of exposure to chrysotile versus other forms of asbestos, and how best to estimate the risk of cancer from exposure to chrysotile asbestos.<sup>33</sup> The panel did not make recommendations about whether chrysotile should be listed according to the Rotterdam Convention requirements, or whether it should be banned, because panel members were asked only to look at the science of the substance's cancer-causing potential.<sup>34</sup>

The Canadian Workplace Hazardous Materials Information System (WHMIS) indicates that all forms of asbestos are toxic for both carcinogenicity and chronic health effects and toxicity.<sup>35</sup> The Canadian Centre for Occupational Health and Safety (CCOHS) uses the same permissible exposure limit as the US Occupational Health and Safety and Health Administration.<sup>36</sup> Quebec uses a different threshold limit value. Samples taken during a five-year period from 1995 – 2000 at Thetford Mines showed that asbestos workers were exposed to higher levels than the standard threshold limit in more than 10% of the samples.<sup>37</sup>

The Institut National de Santé Publique du Québec (INSPQ) has over the past several years published fifteen reports related to asbestos, all of them documenting that it has proven impossible to handle chrysotile asbestos safely in Quebec.<sup>38</sup> The INSPQ states that "safe use" of chrysotile asbestos is likely impossible, particularly for construction workers. The Institut opposed the Quebec government's policy of increased use of chrysotile asbestos.<sup>39</sup>

World production and consumption of chrysotile has increased from an estimated 1.9 million metric tonnes to 2.2 million metric tonnes in 2006. However, in Canada production has been following a downward trend due partly to a fiercely competitive market, high production and

transportation costs, and the fact that Canada is far removed from the remaining importing countries. Thus, production has declined from an estimated 1.5 million metric tonnes of the fibres in the late 1970s with more than 4,000 workers in 8 different mines to half a million metric tonnes in the late 90s.<sup>40</sup>

Today total estimated exports are down to 200 000 tonnes; the asbestos industry represents approximately 7% of jobs in the region of Thetford Mines (approximately 400 jobs), a significant decline from 33% in previous years. There would, nonetheless, be an economic impact from a ban on the mining, production and export of asbestos and asbestos products. Those employed in the industry would be laid off and the economic benefits to the communities (such as municipal taxation revenues) would disappear. Attention should be given to steps mitigate the impact on individual, family and community well-being as a result of a shut-down of this industry.

### **Need for Continued Research**

The CCOHS has concluded that all types of asbestos are known to cause progressive lung diseases known as asbestosis and pleural abnormalities. However, CCOHS, l'Institut National de Santé Publique du Québec (INSPQ) as well as the Chrysotile Institute have identified several gaps in knowledge that need further research including:

- Differences in the potential of the different asbestos types in causing diseases
- Limited information on adverse effects at low exposure levels
- Impact of intermittent exposure on the development of pleural plaques, its impact on breathing capacity and increased risk for lung cancer
- Lack of data on health risks related to asbestos exposure in construction, textile industries and industries involving maintenance and repair of asbestos-containing products or structures such as automobile workers,
- Substitutes for asbestos have been found for most applications of the material but only limited or no data are available on their health risk assessments.<sup>41</sup> The Builders and Wood Workers International Union provides a list of safer substitutes to asbestos-cement products.<sup>42</sup>

## **POLITICAL/STAKEHOLDER CONSIDERATIONS**

---

Several international and national bodies have taken positions on this issue<sup>43</sup>, including:

- 2005: the World Federation of Public Health Associations (WFPHA) passed a resolution that called for a ban on the mining, production, use and export of asbestos.
- 2006: The International Labour Organization (ILO) called for a complete ban on asbestos mining and production and the WHO called for the elimination of asbestos-related diseases worldwide, noting that the "most efficient way to eliminate asbestos-related diseases is to stop using all types of asbestos..."<sup>44</sup>
- 2008: The World Federation of Public Health Associations, the World Health Organization (WHO), the International Labour Organization (ILO), the Collegium Ramazzini, the Canadian Cancer Society, the International Commission on Occupational Health, and the International Trade Union Confederation, representing 168 million workers in 155 countries, joined forces to seek a global ban on the mining and use of asbestos products, and currently more than 40 industrialized countries have banned asbestos including chrysotile.<sup>45</sup>

- 2009: In August, the Canadian Medical Association passed a resolution calling for the banning of asbestos mining, production and export as well as the defunding of the Chrysotile Institute. In November, the American Public Health Association published a policy statement "Elimination of Asbestos" urging the US Congress to pass legislation and to use their worldwide diplomatic influence to support a ban on the mining, manufacture, sale, use, export, or import of asbestos-containing products both in the US and throughout the world.

## **CPHA POSITION**

---

The CPHA Board of Directors approved in June 2009 a CPHA position that called upon the Association to urge the Government of Canada to support the listing of chrysotile asbestos in the Prior Informed Consent provision related to the exportation of asbestos products to other countries under the Rotterdam Convention. CPHA did so, but received a subsequent request from a CPHA member encouraging the Association to revisit its position statement. At its December 2009 meeting, the CPHA Board of Directors instructed CPHA's Policy Department to convene a Working Group on Asbestos, to advise the Board as to what position CPHA should take on this issue. The WG reviewed the available evidence and proposed its recommendations to the Board's Policy Review Group in February 2010.

In late March 2010, after considering the WG's recommendations, the CPHA Board of Directors endorsed the Position Statement *Call for a ban on the mining, transformation and export of Chrysotile Asbestos*, which would include the following recommendations:

That CPHA calls once again on the Government of Canada to support the listing of chrysotile asbestos under the Rotterdam Convention, and as well urge the GOC to take actions to:

- 1) Introduce legislation to ban the mining, use, and export of asbestos
- 2) Cease funding the Chrysotile Institute
- 3) Establish a national surveillance system and registry for asbestos-related diseases and workers exposed to the various forms of asbestos with data storage for at least 40 years, including information on the diseases and exposure to the fibre from chrysotile asbestos
- 4) Provide just and adequate transition assistance income support and training for workers who would lose their jobs and financial assistance to communities that will be impacted as a result of the closure of the asbestos mines and production industry
- 5) Ensure complete removal and replacement of asbestos-containing vermiculite insulation in housing on reserves
- 6) Ensure that fair compensation is provided to people suffering from asbestos-related diseases as well as to First Nations people suffering from asbestos-related disease resulting from asbestos-containing vermiculite insulation used in housing on reserves in the 1960s through to the 1980s, and,
- 7) Ensure, along with Provincial and Territorial governments, that all public and commercial buildings have their asbestos-containing materials identified and managed to observe strict safeguards when repairs, removal and renovations are made.

## CPHA POSITION STATEMENT

### Call for a Ban on the Mining, Transformation and Export of Chrysotile Asbestos

## References

- <sup>1</sup> Annual Report of Her Majesty's Lady Inspectors. In Annual Report of the Chief Inspector of Factories and Workshops for the Year 1898. Part II: Reports. London, UK: Her Majesty's Stationery Office; 1899:172.
- <sup>2</sup> Castleman B. Asbestos: Medical and Legal Aspects. 5th ed. New York, NY: Aspen; 2005.
- <sup>3</sup> Selikoff IJ, Churg J, Hammond EC. Asbestos exposure and neoplasia. JAMA. 1964;188:22–26
- <sup>4</sup> CHEMINFO. Chemical Profiles Created by the Canadian centre for Occupational Health and Safety.
- <sup>5</sup> Current status of asbestos use in Canada. Nov. 2004. Available at: [www.caut.ca/uploads/current\\_status.pdf](http://www.caut.ca/uploads/current_status.pdf)
- <sup>6</sup> Chrysotile Institute. Chrysotile products: asbestos uses. Available at: [www.chrysotile.com/en/chrysotile/products/default.aspx](http://www.chrysotile.com/en/chrysotile/products/default.aspx)
- <sup>7</sup> Chrysotile; Canadian Minerals Yearbook, 2006, page 18.4 Available at: [www.nrcan-rncan.gc.ca/mms-smm/busi-indu/cmy-amc/content/2006/20.pdf](http://www.nrcan-rncan.gc.ca/mms-smm/busi-indu/cmy-amc/content/2006/20.pdf)
- <sup>8</sup> Levy BS, Wagner GR, Rest KM, Weeks JL. Preventing Occupational Disease and Injury. 2nd ed. Washington, DC: American Public Health Association; 2005.
- Rom WN. Asbestos-related lung disease. In: Fishman AP, Elias JA, Fishman JA, Grippi MA, Senior RM, Pack AI, eds. Fishman's Pulmonary Diseases and Disorders. 4th ed. New York, NY: McGraw-Hill Medical; 2008:943–958.
- World Health Organization, International Agency for Research on Cancer. Monograph on Asbestos, Supplement 7; 1987. Available at: <http://monographs.iarc.fr/ENG/Monographs/suppl7/suppl7.pdf>. Accessed November 23, 2009.
- Chemical profiles by the Canadian Centre for Occupational Health and Safety
- <sup>9</sup> Concha-Barrientos M, Nelson DI, Driscoll T, et al. Selected occupational risk factors. In: Ezzati M, Lopez AD, Rodgers A, Murray CJL, eds. Comparative Quantification of Health Risks: Global and Regional Burden of Diseases Attributable to Selected Major Risk Factors. Geneva, Switzerland: World Health Organization; 2004:1651–1801.
- <sup>10</sup> Driscoll T et Al. The global burden of diseases due to occupational carcinogens. American journal of Industrial Medicine, 2005, 48 (6); 419-431.
- <sup>11</sup> Concha-Barrientos M, Nelson DI, Driscoll T, et al. Selected occupational risk factors. In: Ezzati M, Lopez AD, Rodgers A, Murray CJL, eds. Comparative Quantification of Health Risks: Global and Regional Burden of Diseases Attributable to Selected Major Risk Factors. Geneva, Switzerland: World Health Organization; 2004:1651–1801.
- <sup>12</sup> Confédération des syndicats nationaux, Octobre 18, 2009, <http://www.newswire.ca/en/releases/archive/October2009/18/c7806.html>
- <sup>13</sup> Statistics Canada, [http://cansim2.statcan.gc.ca/cgi-win/cnsmcqi.exe?Lang=E&RootDir=CII/ResultTemplate=CII/CII\\_&Array\\_Pick=1&ArrayId=1030550](http://cansim2.statcan.gc.ca/cgi-win/cnsmcqi.exe?Lang=E&RootDir=CII/ResultTemplate=CII/CII_&Array_Pick=1&ArrayId=1030550)
- <sup>14</sup> INSPQ, *Descriptive Epidemiology of the Principal Asbestos-Related Diseases in Québec, 1981-2004*, page 38 [http://www.inspq.qc.ca/pdf/publications/955\\_PrincipalAsbestosRelatDiseases.pdf](http://www.inspq.qc.ca/pdf/publications/955_PrincipalAsbestosRelatDiseases.pdf)
- <sup>15</sup> Email of Nov. 10, 2009 from Dr Paul A. Demers, Director, School of Environmental Health, University of British Columbia; member of International Agency for Research on Cancer's Working Group on asbestos risk
- <sup>16</sup> Christiani DC. Asbestosis. In: Levy BS, Wagner GR, Rest KM, Weeks JL, eds. Preventing Occupational Disease and Injury. 2<sup>nd</sup> ed. Washington Dc: American Public Health Association, 2005; 98-100.
- <sup>17</sup> Leigh J. Mesothelioma. In: Levy BS, Wagner GR, Rest KM, Weeks JL, eds. Preventing Occupation Disease and Injury. 2<sup>nd</sup> ed. Washington Dc: American public Health Association, 2005; 40-344.
- <sup>18</sup> Chrysotile; Canadian Minerals Yearbook, 1997, page 17.4 Available at: [www.nrcan-rncan.gc.ca/mms-smm/busi-indu/cmy-amc/content/1997/20.pdf](http://www.nrcan-rncan.gc.ca/mms-smm/busi-indu/cmy-amc/content/1997/20.pdf) [www.inspq.qc.ca/pdf/publications/955\\_PrincipalAsbestosRelatDiseases.pdf](http://www.inspq.qc.ca/pdf/publications/955_PrincipalAsbestosRelatDiseases.pdf)
- <sup>19</sup> McCulloch J. and Tweedale G., *Defending the Indefensible, The Global Asbestos Industry and its Fight for Survival*, Oxford University Press, 2009, 325p.
- <sup>20</sup> United Nations Environment Programme Food and Agriculture Organization of the United Nations. The Conference of Plenipotentiaries, Rotterdam, The Netherlands, January 26, 2004. Available at: [www.pic.int/cops/cop1/112%29/English/K0470163%20DOC-12.pdf](http://www.pic.int/cops/cop1/112%29/English/K0470163%20DOC-12.pdf). Accessed December 23, 2009.
- <sup>21</sup> Radio-Canada, August 25, 2009, Les propos d'Ignatieff font réagir vivement
- <sup>22</sup> La Tribune, Nov. 30, 2009, Les défenseurs n'ont pas l'intention de baisser les bras
- <sup>23</sup> Office of the Commissioner of Lobbying of Canada, Active registration 781292-13573-4, active from January 31, 2008. [www.ocl-cal.gc.ca](http://www.ocl-cal.gc.ca)
- <sup>24</sup> Legault, Rita. Times tough for ailing asbestos industry – without chrysotile, there's no space shuttle. *The Record. The Voice of the Eastern Townships*. April 14, 2008
- <sup>25</sup> Chrysotile Institute. Information available at [www.chrysotile.com](http://www.chrysotile.com)
- <sup>26</sup> CPHA is trying to find out the composition of the Board of the Chrysotile Institute and whether members of the senior executive of LAB Chrysotile sit on the Chrysotile Institute's Board. All requests to the Institute for this information and to obtain copies of their annual report have been unanswered.
- <sup>27</sup> Mittelstaedt, M. Asbestos Shame. *The Globe and Mail*. October 27, 2007
- <sup>28</sup> Attaran, A., Boyd, D. Stanbrook, M. B. Asbestos mortality: a Canadian Export. *CMAJ*. October 21, 2008 179 (9). Page 871-872.
- <sup>29</sup> Dave SK and Beckett WS. Occupational Asbestos Exposure and Predictable Asbestos-Related Diseases in India. *Am. J. Ind. Med.* 48:137-143. 2005
- <sup>30</sup> Mittelstaedt, M. Controversy brews over asbestos deaths in Mexico. *The Globe and Mail*. February 12, 2010.
- <sup>31</sup> *Smoke and Mirrors: Chrysotile Asbestos Is Good For You – Illusion and Confusion But Not Fact*, Dr Richard Lemen, U.S. Assistant Surgeon General (Ret) <http://worldasbestosreport.org/articles/iatb/page16-20.pdf>
- <sup>32</sup> Castleman b, Joshi TK. The Global Asbestos Struggle Today. *Eur. J. Oncol*, vol, 12, n.3, pp-49-154., 2007.
- <sup>33</sup> Chrysotile Asbestos Consensus Statement and Summary. Chrysotile Asbestos Expert Panel. Montreal, Quebec, November 13–14, 2007
- <sup>34</sup> Eggerston, L. Asbestos panelists accuse government of misusing science. *CMAJ* October 21, 2008; 179 (9). doi:10.1503/cmaj.081532;
- <sup>35</sup> CHEMINFO. Chemical Profiles Created by the Canadian centre for Occupational Health and Safety.
- <sup>36</sup> Permissible Exposure limits: 0.1 fibres/cc and 1.0 fibres/cm<sup>3</sup> for 30 minutes of exposure to respirable fibres – CHEMINFO. Chemical Profiles Created by the Canadian centre for Occupational Health and Safety.
- <sup>37</sup> *L'exposition aux fibres d'amiante dans le secteur minier*, Turcot & Roberge, Dec. 2001 [www.inspq.qc.ca/pdf/evenements/symposium-amiante/10h00-TurcotRobergeMines.pdf](http://www.inspq.qc.ca/pdf/evenements/symposium-amiante/10h00-TurcotRobergeMines.pdf)  
The exposure limit in Quebec is 1 f/cc and 5 f/cc for short-term exposure (15 minutes).
- <sup>38</sup> INSPQ reports 222, 233, 250, 293, 393, 616, 651, 815, 927, 942, 953, 954, 968, 986 & 1002. English translations: reports 292, 342, 394 & 955 [www.inspq.qc.ca/publications/default.asp?E=p](http://www.inspq.qc.ca/publications/default.asp?E=p)
- <sup>39</sup> INSPQ Advisory, *The Use of Chrysotile Asbestos in Québec*, pages 11 & 14, June 2005 [www.inspq.qc.ca/pdf/publications/394-AdvisoryAsbestosChrysotile.pdf](http://www.inspq.qc.ca/pdf/publications/394-AdvisoryAsbestosChrysotile.pdf)
- <sup>40</sup> Legault, Rita. Times tough for ailing asbestos industry – without chrysotile, there's no space shuttle. *The Record. The Voice of the Eastern Townships*. April 14, 2008
- <sup>41</sup> of Québec, *Projet Provincial – Amiante, 31 déc. 2007*, [www.santepub-mtl.qc.ca/Publication/pdftravail/projetamiante.pdf](http://www.santepub-mtl.qc.ca/Publication/pdftravail/projetamiante.pdf)
- <sup>42</sup> Asbestos Kills. Safer substitutes exists <http://www.bwint.org/pdfs/asbestossubstitutes.pdf>
- <sup>43</sup> APHA Policy Statement Database, Elimination of Asbestos, Policy Date: 11/10/2009, Policy Number: 20096
- <sup>44</sup> World Health Organization (WHO). *Elimination of Asbestos-Related Disease*. Geneva, Switzerland: WHO; 2006. Available at: [http://whqlibdoc.who.int/hq/2006/WHO\\_SDE\\_OEH\\_06.03\\_eng.pdf](http://whqlibdoc.who.int/hq/2006/WHO_SDE_OEH_06.03_eng.pdf). Accessed November 23, 2009
- <sup>45</sup> World Federation of Public Health Associations. *Call for a Global Ban on the Mining and Use of Asbestos*. Geneva, Switzerland: World Federation of Public Health Associations; 2005. Available at [www.wfpha.org/Archives/05\\_policy\\_Asbestos.pdf](http://www.wfpha.org/Archives/05_policy_Asbestos.pdf). Accessed November 23, 2009.