

Fiber Glass Hazard Classification and Fiber Glass Health Indemnity Update

Fiber Glass Insulation is Safe to Install and Use

Over 50 years of product testing, manufacturing, installation, and use have demonstrated that Johns Manville's fiber glass materials for mechanical and specialty insulations are safe to use when recommended work practices are followed. This position is supported by significant medical and scientific testing and evaluation, conducted by Johns Manville, independent researchers and international regulatory authorities.

Guarantee to Customers, Distributors and Users of Johns Manville Fiber Glass Insulation Products

Johns Manville offers the **Fiber Glass Health Indemnity** by which Johns Manville will defend and indemnify our customers, distributors, and users of fiber glass insulation products for claims made against them in the United States asserting any bodily injury from exposure to Johns Manville's insulation glass fibers. This written agreement may be extended to engineers, architects, and code officials who specify or recommend Johns Manville insulation products for use in air handling, pipe, equipment, acoustic, or other similar applications.

Current Hazard Classification of Fiber Glass

Fiber glass falls within a group of materials historically referred to as man-made vitreous (of or like glass) fibers and more recently synthetic vitreous fibers or SVF. In October 2001, the International Agency for Research on Cancer (IARC), acting through an independent panel of internationally distinguished scientists, toxicologists, and health experts, reviewed the most recent scientific literature and removed glass, rock, and slag wool fibers from its list of possible carcinogens. IARC is part of the World Health Organization, and its mission is to coordinate and conduct research on the causes of human cancer, the mechanisms of carcinogenesis, and to develop scientific strategies for cancer control. IARC summarized its action by stating:

Studies published during the 15 years since the previous IARC Monographs' review of these fibres in 1988 provide no evidence of increased risks of lung cancer or of mesothelioma (cancer of the lining of the body cavities) from occupational exposures during manufacture of these materials, and inadequate evidence overall of any cancer risk.¹

As a result of IARC's action, fiber glass was removed from the list of carcinogens in Canada under Section 54 of the Canadian Controlled Products Regulations and the possible cancer hazard warning was removed from Johns Manville fiber glass products sold in Canada. The European Union has also created criteria allowing testing to fully remove any cancer warnings from fiber glass products.

In the U.S., fiber glass is still considered by the National Toxicology Program (NTP) as "reasonably anticipated to cause cancer." The NTP is administered by the U.S. Department of Health and Human Services. In 2002, the NTP accepted for review an industry petition to remove insulation fiber glass from the list of NTP possible carcinogens. They are currently reviewing the current scientific data, including the 2001 IARC decision, and will likely make their decision in 2007.²

In the meantime, the U.S. Agency for Toxic Substances and Disease Registry published in 2004 a toxicological profile on SVF stating that the NTP conclusion is outdated because, unlike the IARC determination, it has not been reviewed in light of the most recent science, including extensive animal inhalation studies and human epidemiology studies.³

In addition, the U.S. National Academy of Sciences found in 2000, that there was "no significant association between fiber exposure and lung cancer or nonmalignant respiratory disease in the MVF [man-made vitreous fiber] manufacturing environment."⁴

¹ http://www.iarc.fr/ENG/Press_Releases/archives/pr137a.html

² 70 Federal Register 60548 (Oct. 18, 2005).

³ <http://www.atsdr.cdc.gov/toxprofiles/tp161.html>

⁴ Quoted in "Health and Safety Facts for Fiber Glass," 62, Publication Number 40, September 2003, www.naima.org.

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Status of Department of Health and Human Services' Review

Dr. C. W. Jameson, Director, Report on Carcinogens, Department of Health and Human Services, National Institutes of Health, and National Institute of Environmental Health Sciences, reports that,

The North American Insulation Manufacturers Association (NAIMA) nominated glass wool (respirable size) to be considered for removal from listing of human carcinogens in the 12th Edition of the Report on Carcinogens (RoC) based on the more recent International Agency for Research on Cancer (IARC) evaluation as an IARC Group 3 (not classifiable as to its carcinogenicity to humans). It is the NTP's intention to review the current RoC listing of glass wool (respirable size) to determine if this listing should remain in or be removed from the RoC.⁵

Dr. Jameson anticipates that this review will take place in 2007.

Condensed Timeline for the Hazard Classification of Fiber Glass

In 1987, IARC classified man-made vitreous fibers as Group 2B – possible cancer hazard. That 1987 IARC action was based on studies in which glass fibers were implanted directly into a rat's body cavity, bypassing natural defense mechanisms. Industry argued that inhalation was a more appropriate route of exposure, but IARC determined that there were no well-conducted inhalation studies at that time.

In 1994, the US Department of Health and Human Services' NTP merely echoed the 1987 IARC decision and included glass wool (respirable size) on its list of substances *reasonably anticipated to cause cancer*.

Following these classifications, several extensive and well-documented studies were initiated and completed in order to provide conclusive and comprehensive information on the effects of SVF. These included well-conducted animal inhalation studies and one of the largest human epidemiology studies ever undertaken – covering over one million person years.

Based on this current science, IARC in 2001 removed glass, rock, and slag wool fibers from its list of possible carcinogens. The science behind this change in classification was reported in IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 81, Man-Made Vitreous Fibres, October 2002.⁶ As a result, typical thermal and acoustical insulation glass fibers are no longer considered by IARC to be a possible carcinogen.

IARC retained its Group 2B "possible carcinogen" classification only for certain special-purpose glass fibers (SPF) used in specific narrow applications such as high efficiency air filtration media, battery separators, and special insulation for rocket motors and jet aircraft engines.

⁵ E-mail from C. W. Jameson, Ph.D., Director, Report on Carcinogens, Department of Health and Human Services, National Institutes of Health, and National Institute of Environmental Health Sciences, April 21, 2006.

⁶ The IARC Monograph is available at <http://www.iarc.fr/IARCPress/general/mono.pdf>

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Frequently Asked Questions

Q1. Why are Johns Manville's US Insulation products labeled with the language "Possible Cancer Hazard by Inhalation" while Johns Manville's Canadian Products do not have such a warning?

A1. Canada regulates fiber glass under the 2001 IARC decision while the US regulates fiber glass under the old 1987 IARC decision.

Products that are used by employees in the US workplace are required to comply with the OSHA Hazard Communication (HazCom) regulation at 29 CFR 1910.1200. When these products contain fiber glass material, they are required to include a warning of possible cancer on the label and manufacturers must disclose on the Material Safety Data Sheet information relating to this hazard. This is because of the 1994 NTP decision, which is based on the old 1987 IARC decision. It is expected that NTP will follow IARC and in 2007 remove fiber glass from the US list of suspected carcinogens; when that happens, the fiber glass-related cancer warning label will no longer be required by OSHA HazCom.

Products sold to consumers are subject to labeling requirements of the Consumer Product Safety Act and are exempt from the labeling requirements of OSHA's Hazard Communication Standard. However, California Proposition 65 (Prop 65) also requires a cancer warning label since California included fiber glass on its Prop 65 list in 1989 based on the 1987 IARC decision. Once NTP removes fiber glass from its list of suspected carcinogens, the industry will petition the State of California to remove fiber glass from the Prop 65 list.

In contrast, products used by employees in Canada are required to comply with the Canadian WHMIS regulation. Since IARC in 2001 removed fiber glass from its list of possible carcinogens, and since the WHMIS regulation automatically incorporates the current version of the IARC determination, fiber glass products sold and used in Canada need not have the cancer warning label.

Q2. Is fiber glass the next asbestos?

A2. No. Naturally-occurring mineral asbestos fibers are now known to cause mesothelioma and other non-malignant pulmonary disease. In contrast, SVF (made mostly from sand) is chemically, morphologically (shape and size), and toxicologically (disease causing potential) distinct from asbestos fibers. Whereas asbestos fibers are crystalline and can cleave lengthwise to form many thinner fibers, SVF is vitreous (glassy) and breaks widthwise. Whereas asbestos fibers are so thin (<1 micron) they are inhaled deeply into the lung, SVF is much thicker, with some fibers so thick (>15 micron) they are not even respirable. Whereas asbestos fibers are very durable in lung tissue (which IARC in 2001 noted is the hallmark of disease causing potential), SVF is quickly dissolved by the lung's natural defense mechanisms. Whereas studies have confirmed the carcinogenicity of asbestos fibers, one of the largest epidemiology studies ever undertaken confirmed no increase in cancer or non-malignant respiratory disease in workers at factories making SVF (where concentrations are typically much greater than those encountered in fiber glass products installation, which itself is orders of magnitude greater than the concentration to which a building occupant could be exposed).

The scientific evidence is conclusive in this respect. Individuals or entities that claim fiber glass will have the human health issues and legal liabilities similar to those that resulted from the use of asbestos are either uninformed, or are deliberately creating "fiber-phobia" in order to benefit financially or otherwise. For example, some cellulose insulation manufacturers are known to make unfounded allegations about the health effects of fiber glass while carefully avoiding any tests of their own cellulose fibers, some of which can be quite durable.

Q3. If fiber glass is safe, then why are personal protective equipment, including gloves, goggles and masks, recommended when installing fiber glass?

A3. Fiber glass, like many other materials, can be irritating to the skin and mucous membranes (eyes, nose, throat). While this irritation is short-lived, it is easy to prevent entirely with simple personal protective equipment like gloves, goggles and masks. There are recommended exposure limits and safety practices that should be followed to avoid irritation in the use or installation of fiber glass insulation products. NAIMA's pamphlet, "Working with Fiber Glass, Rock Wool and Slag Wool Products" provides current and specific safe work practices that are part of the Health and Safety Partnership Program (HSPP), a voluntary partnership between NAIMA, the U.S. Occupational Safety and Health Administration (OSHA) and trade associations representing insulation installers.⁷

Q4. How do I take advantage of the Johns Manville Fiber Glass Health Indemnity Offer?

A4. The Fiber Glass Health Indemnity is a written agreement between Johns Manville and the corporation or individual who is recommending, specifying, approving, fabricating, installing or selling Johns Manville fiber glass products. The agreement may be requested through your Johns Manville sales representative. Information on the legal entity being covered by this agreement is required.

⁷ <http://www.naima.org/pages/resources/library/pdf/N030.PDF>

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Additional Information

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For more information on the Johns Manville Fiber Glass Indemnity Offer, please contact a Johns Manville Performance Materials sales or customer service representative.

- Additional information published by the North American Insulation Manufacturer's Association, can be found at www.naima.org. The following documents may be useful in answering additional questions on fiber glass and other mechanical insulation materials:
 - Facts # 59: Exposure Data for Fiber Glass, Rock Wool and Slag Wool Under the Health and Safety Partnership Program
 - Facts #61: Facts About the Performance of Reflective Bubble Pack Insulation in Duct System Applications
 - Facts #62: Health and Safety Facts for Fiber Glass
 - Working Smart with Fiber Glass, Rock Wool and Slag Wool Product - Recommended Work Practices for the Installation of Synthetic Vitreous Fibers (SVF)
 - A Synthetic Vitreous Fiber (SVF) Occupational Exposure Database: Implementing the SVF Health and Safety Partnership Program
- For more information on the National Toxicological program, visit the NTP web page at <http://ntp.niehs.nih.gov/ntpweb>



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