INSULATION FACTS #62

Health and Safety Facts for Fiber Glass

NAIMA
North American Insulation Manufacturers Association

Since its introduction into commerce nearly seventy years ago, fiber glass has become one of the world's most useful insulating materials, helping homeowners and industry increase energy efficiency, protect the environment, and reduce energy costs. Fiber glass falls within a group of materials historically referred to as man-made vitreous fibers (MMVFs), reflecting the glassy, non-crystalline nature of these materials.

NAIMA and its member companies are committed to ensuring that fiber glass products can be safely manufactured, installed and used. NAIMA member companies have funded tens of millions of dollars of research at leading independent laboratories and universities in the United States and abroad. The weight of the scientific research shows no association between exposure to glass fibers and respiratory disease or cancer in humans.

In October 2001, an international expert review by the International Agency for Research on Cancer (IARC) re-evaluated the 1988 IARC assessment of glass fibers and removed glass, rock and slag wool fibers from its list of substances "possibly carcinogenic to humans." All fiber glass and rock and slag wools that are commonly used for thermal and acoustical insulation are now considered not classifiable as to carcinogenicity to humans (Group 3). IARC noted specifically:

> *"Epidemiologic studies published during the 15 years since the previous IARC Monographs review of these fibers in 1988 provide no evidence of increased risks of lung cancer or 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."*

IARC retained its Group 3 classification for continuous glass filaments and the Group 2B "possible carcinogen" classification for certain special purpose glass fibers.

The IARC change is consistent with the conclusion reached by the U.S. National Academy of Sciences, which in 2000 found "no significant association between fiber exposure and lung cancer or nonmalignant respiratory disease in the MVF [man-made vitreous fiber] manufacturing environment."

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IARC's comprehensive review of the extensive studies developed over the past 15 years indicates that some of the prior

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reviews now need to be updated. Many of these earlier reviews do not account for the new science. For example, the U. S. Department of Health and Human Service (HHS, Shalala 1994) included fiber glass on its list of possible carcinogens based primarily on the 1988 IARC classification. Similarly, the California listing of fiber glass as "known to the state to cause cancer" was based principally on the old IARC classification.

Fiber glass is now the most thoroughly evaluated insulation material in the market. The data from these evaluations demonstrate that:

1. No causal association has been found between either cancer or non-malignant pulmonary disease and human exposure to glass fibers.
2. Inhalation exposures of animals to massive amounts of biosoluble glass wool fibers, hundreds and even thousands of times greater than human exposures, have not shown a relationship between glass wool fibers and disease.
3. Glass wool fibers are biosoluble and therefore dissolve more rapidly in body fluids than other fibers that have been associated with human disease.
4. Workplace levels of respirable glass fibers in most settings are less than 1 fiber/cc; and airborne levels in insulated buildings are not significantly different than levels outside or in uninsulated buildings.

Scientific evidence demonstrates that fiber glass is safe to manufacture, install and use when recommended work practices are followed. Following these work practices will help to reduce irritation.* For more information, consult the individual manufacturer's Material Safety Data Sheets (MSDSs) or package labels. NAIMA's pamphlet, "Working with Fiber Glass, Rock Wool and Slag Wool Products" provides current and specific safe work practices which are part of NAIMA's Product Stewardship Program and reflects the input of international industry, trade associations, OSHA, Labor, and others. Virtually all of these work practices were part of the HSPP, and were endorsed by OSHA. NAIMA has also developed an instructional video/DVD entitled "Play It Smart, Play It Safe," which details safe work practices and the following four components:

1. A voluntary workplace permissible exposure limit (PEL) of 1 respirable fiber/cc.
2. Respiratory protection for workers when workplace exposures exceed this PEL and for certain designated tasks.
3. Monitoring of workplace airborne fiber levels and a centralized exposure monitoring database.
4. Information and training for workers who handle glass wool products.

This tape and the above-mentioned pamphlet can be ordered in either English or Spanish from the NAIMA library at www.NAIMA.org.

NAIMA member companies continue to support ongoing scientific investigations into the health and safety aspects of glass wools as part of their comprehensive product stewardship program. NAIMA is dedicated to providing up-to-date information on the results of these studies as they become available.

About NAIMA

NAIMA is the association for North American manufacturers of fiber glass, rock wool, and slag wool insulation products. Its role is to promote energy efficiency and environmental preservation through the use of fiber glass, rock wool and slag wool insulation, and to encourage the safe production and use of these materials.

NAIMA, continuing its members' commitment to safety, has established a renewed Product Stewardship Program, which embodies the components of the earlier OSHA-NAIMA Health and Safety Partnership Program (HSPP). The HSPP was a comprehensive eight-year partnership with OSHA, which NAIMA completed in May 2007, and now NAIMA incorporates these safe work practices into NAIMA's Product Stewardship Program.

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* This is a mechanical irritation and does not meet the U.S. OSHA HAZCOM definition of "Irritation" specified in Appendix A to 29 C.F.R. § 1910. 1200.

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