

WORLD HEALTH ORGANIZATION
INTERNATIONAL AGENCY FOR RESEARCH ON CANCER



IARC MONOGRAPHS
ON THE EVALUATION
OF CARCINOGENIC
RISKS TO HUMANS

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MAN-MADE VITREOUS FIBRES

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Overall evaluation

Special-purpose glass fibres such as E-glass and '475' glass fibres are *possibly carcinogenic to humans (Group 2B)*.

Refractory ceramic fibres are *possibly carcinogenic to humans (Group 2B)*.

Insulation glass wool, continuous glass filament, rock (stone) wool and slag wool are *not classifiable as to their carcinogenicity to humans (Group 3)*.

The Working Group elected not to make an overall evaluation of the newly developed fibres designed to be less biopersistent such as the alkaline earth silicate or high-alumina, low-silica wools. This decision was made in part because no human data were available, although such fibres that have been tested appear to have low carcinogenic potential in experimental animals, and because the Working Group had difficulty in categorizing these fibres into meaningful groups based on chemical composition.

IARC MONOGRAPHS PROGRAMME RE-EVALUATES CARCINOGENIC RISKS FROM AIRBORNE MAN-MADE VITREOUS FIBRES

A scientific working group of 19 experts from 11 countries convened by the Monographs Programme of the International Agency for Research on Cancer (IARC) has concluded its re-evaluation of the carcinogenic risk of airborne man-made vitreous fibres.

Man-made vitreous fibres in the form of wools are widely used in thermal and acoustical insulation and in other manufactured products in Europe and North America. These products, including glass wool, rock (stone) wool, and slag wool, have been in use for decades and have been extensively studied to establish whether fibres that are released during manufacture, use, or removal of these products present a risk of cancer when inhaled. Epidemiologic 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.

Beside this, much industrial effort has gone into development of newer materials that have similar insulation properties to the older products, but which disappear from body tissues much more rapidly. The reason for this effort is that asbestos, a known human carcinogen which causes both mesothelioma and lung cancer and had been used as insulating material for several decades, is extremely slow to decompose and disappear from body tissues in which it has been deposited. This characteristic, known as high biopersistence, is correlated with the high carcinogenic potency of asbestos fibres. Some of these newer materials have now been tested for carcinogenicity and most are found to be non-carcinogenic, or to cause tumours in experimental animals only under very restricted conditions of exposure.

The Monographs working group concluded that only the more biopersistent materials remain classified by IARC as possible human carcinogens (Group 2B). These include refractory ceramic fibres, which are used industrially as insulation in high-temperature environments such as blast furnaces, and certain special-purpose glass wools not used as insulating materials. In contrast, the more commonly used vitreous fibre wools including insulation glass wool, rock (stone) wool and slag wool are now considered not classifiable as to carcinogenicity to humans (Group 3). Continuous glass filaments, which are used principally to reinforce plastics, are also considered not classifiable as to carcinogenicity to humans.

For further details of the Monographs evaluation, consult <http://monographs.iarc.fr/>, or inquire by e-mail to grosse@iarc.fr.

For further details of current research at IARC on man-made vitreous fibres, inquire by e-mail to boffetta@iarc.fr.

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