

Garlock/1

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March 12, 1992

Peter Kraus
Baron & Budd, P.C.
The Centrum
3102 Oak Lawn Avenue, Suite 1100
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Dear Mr. Kraus:

This will describe the tests and conclusions which I made of two Garlock gasket samples which you sent me.

The two samples are described as follows:

- #1 A piece of gasket in the shape of an arc about 17 inches long and 2-3/8 inches wide, with 1 inch diameter holes punched out. The piece is stamped with the letters "7021". A gummed label is attached to it which reads "Garlock".
- #2 A piece of gasket measuring about 6 inches by 5 inches by 1/16 inch thick. The piece is stamped with the word "Garlock". A gummed label is attached to it which reads "Garlock gasket material" and "gasket material Hi Temp".

By using polarized light microscopy and x-ray diffraction, I determined that both samples contain about 50% to 60%, or more of chrysotile asbestos.

I made an estimate of how much chrysotile asbestos might be released even by light handling of these gaskets, as follows:

The samples were removed from the transparent plastic zip-lock bags in which they were received. The samples were then lightly scraped with a metal laboratory spatula over a 1" x 3" glass slide on which two drops of nitrocellulose solution (1%) in amyl acetate had been placed. Another slide was placed upon the first (overlapping about 1 inch). The two slides were drawn apart leaving a film on one side



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of each of the two slides. The film which contains the dust released from the gasket was dried, cut into slices and mounted onto electron microscope grids for examination.

The electron photomicrographs clearly show that chrysotile asbestos was released in large numbers by scraping lightly the two gasket samples. These photographs were taken on several grids, confirming the homogeneity of particulate distribution on the film. It is estimated that millions of asbestos fibers were released in this way. Many of the fibers were of respirable size. It is reasonable to assume that in cutting and fitting such gasket materials, a worker would be exposed to very high levels of asbestos dust.

By using electron microscopy, the morphological characteristics of chrysotile are sufficient to identify it. However unequivocal identification was done using energy dispersive x-ray analysis of the fibers. These chemical spectra show that the magnesium, silicon and iron compositions and ratios are identical to reference chrysotile specimens.

Please do not hesitate to contact me if there are any questions.

Sincerely,

Sincerely,

Arthur N. Rohl, Ph.D.