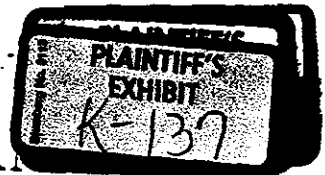


OWENS-ILLINOIS GLASS COMPANY

GENERAL OFFICES - TOLEDO 1, OHIO



April 8, 1952



Mr. Thomas M. Durkan
The Saranac Laboratory
Saranac Lake, New York

Dear Tom:

Attached is our check No. 29544 covering the analysis of nine dust samples from our Sayreville, New Jersey plant.

Thank you for your letter of March 11 and the report giving the results of your laboratory work. Certainly the values of 22 and 23% for the quartz content of asbestos dust at the fiberizer and of bulk amosite agree closely with the determinations you reported on May 28, 1951. You will recall these recent determinations were made as a check on the earlier analyses.

This high quartz content of amosite was quite bewildering to the technical people in our Kaylo Division. They were so interested that they ran chemical, petrographic and X-ray determinations on the portion of sample No. 1 that you returned to us. Our General Research Division describes their results as follows:

The action of acids on asbestos is severe, tending to result in a silica structure or skeleton being left behind. For this reason, chemical methods for estimating free silica in asbestos are open to question.

We employed an indirect chemical method. We determined the percentages of FeO, Fe₂O₃, MgO, and SiO₂. Then the amount of silica that could be combined with the iron and magnesia in the ratio of (FeO MgO) to SiO₂ of 7:8 was computed. (This ratio is the theoretical for Amosite.) The excess of silica present over that which was accounted for by the 7:8 ratio was considered to be quartz. This value was found to be 9.3%.

Independently, our petrographer and our X-ray technician reported the quartz content to be "somewhat under 10%."

By contrast, the "free silica" content by the Hydrofluosilicic Acid Method showed the dust sample (Amosite) to contain 28.9% and a sample of Amosite from this laboratory 31.1%. We believe these values to be high for the reasons given earlier.

OWENS-ILLINOIS GLASS COMPANY

Mr. Thomas K. Durkan

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April 8, 1952

The X-ray method was by X-ray diffraction, with the quartz lines recorded and measured on photographic film.

Recently the industrial hygiene unit of the Indiana State Board of Health, under the direction of Louis W. Spolyar, was making some dust counts in our Indiana plants and I visited their new laboratory in Indianapolis. They have an impressive layout with some very fine equipment. They offered to run on their X-ray spectrophotometer (using a Geiger counter) any samples that we might have. I took them up immediately and sent them a portion of the same sample No. 1 that your laboratory worked on. Dr. Spolyar's laboratory said they found 6.8% free silica. Howard Buxsted, who did the work, seemed to be quite proficient in the use of the instrument and fairly well experienced.

Do you have any idea why there should be this discrepancy in the results? We are still as much at sea as we were when we talked with you last fall. Our Kaylo people, too, are interested, because one would think a 20% quartz content in amosite would throw off their batch composition.

Our research laboratory also analyzed sample No. 5 and found it to contain 12.9% asbestos. This falls within the range of amosite and chrysotile content that you found.

The asbestos content of this sample, which represents conditions during the loading of box cars with Kaylo roof tile, is important because the dust concentrations are around 40 to 50 million particles per cubic foot.

Any comments you may have on the above would be very much appreciated.

Personal regards.

Sincerely yours,

W. F. Hazard

INDUSTRIAL RELATIONS DIVISION

W.G.Hazard:M