February 23, 1943

Mr. U. E. Bowes
Director of Research
Owens-Illinois Glass Company
Toledo, Ohio

Dear Mr. Bowes:

I was very much interested in your letter of February 12th describing the action of synthetic calcium silicate which you are developing.

The samples of material just arrived this afternoon and we have had a preliminary work at them. I would suspect that they might be a source of respiratory difficulty but that point cannot be answered until we obtain considerable more information.

We will subject the samples to chemical and X-ray analysis to be sure that there is no free silica in them. Incidentally, may I ask in what form the silica component worked? Did you start with an amorphous silica or was it quartz? At the same time we will attempt to reduce some of the samples to the size that can be injected into the lungs of guinea pigs to see whether it is capable of producing a pulmonary fibrosis. The physical properties suggest that it might act like asbestos but of course, one would not care to anticipate this outcome without actual trial.

Preliminary animal work should be far enough advanced after 3 or 4 months to determine whether it would be desirable to plan upon an inhalation experiment. If the calcium silicate should be capable of causing fibrosis, then one should ascertain whether it can be inhaled from the atmosphere. In the mean time, I would regard it with suspicion and see that those who were working in the pilot plant or otherwise exposed were protected by respirators if there are appreciable concentrations in the atmosphere.

I am extremely interested in this material because as you know, I have been attempting to discover substances having physical properties similar to asbestos which may or may not cause tissue reactions. Thus far, we have found that chrysotile asbestos is unique, but on superficial inspection your product seems to behave more like asbestos that anything we have discovered. As soon as our analyses are completed, I will write you further.

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I am extremely interested in this material because as you know, I have been attempting to discover substances having physical properties similar to asbestos which may or may not cause tissue reactions. Thus far, we have found that chrysotile asbestos is unique, but on superficial inspection, your product seem to behave more like asbestos than anything we have discovered. As soon as our analyses are completed, I will write you further,

Very truly yours,

Leroy U. Gardner, M. D.
Director

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