

HR. Chitwood #212
Asbestos

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Research and Development

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Asbestos

Dear Bill:

Thank you for your letter of May 26. I found it and the attached report describing your experiments with Coalings asbestos very interesting. I have delayed answering your letter until now hoping that by thinking on the subject I might be inspired with some good ideas, or that I might be able to come up with some sage comments. Unfortunately, no brilliant vision has appeared.

The work which is going on in the use of asbestos as an aid to sewage disposal indicates this to be a very promising use for the material, and I have little to offer beyond what is already planned in extension of this work.

A most interesting application for the asbestos is as a filler to improve quality of certain resins. The work that Nat Zutty has done with bis-phenol A-epichlorohydrin resin looks extremely promising. In this case the additive has contributed stress-crack resistance without destroying transparency of the polymer. While this use will be beneficial to the Plastics Company, it will not be a big consumer of asbestos since only 6-10% of the weight of the resin is used.

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It is difficult to speculate on the usefulness of asbestos as a catalyst for gas-phase reactions. Most catalytic oxidations in the chemical industry operate at temperatures below 450°C, so the fact that asbestos decomposes at this temperature should not seriously limit its utility.

A cursory examination of the material as a catalyst for vapor-phase oxidations would appear to be worthwhile to determine whether or not there is any possibility that it could be successfully employed. As a starting point, I would suggest experiments with simple hydrocarbons (propylene, ethylene, and isobutane); alcohols such as ethanol and isopropyl alcohol; a simple ketone such as methyl ethyl ketone; and possibly an aldehyde (acetaldehyde). From positive leads obtained in these initial experiments a practical program of extension to more interesting compounds could be planned.

At the moment all of my people are fully engaged in work of great urgency and we would not be able to start any experiments with asbestos for some time. If you decide to look into the oxidations yourself, I should be glad to give what help I can in suggesting reaction conditions.

Sincerely yours,

H. C. Chitwood

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