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UC 149-2

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INTERNAL CORRESPONDENCE

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To (Name) See Attached Distribution List
Division
Location

Date May 10, 1967

Originating Dept. Research and Development Department

Answering letter date

Copy to

Subject Monthly Summary Report
April, 1967

PLAINTIFF'S EXHIBIT UC-757

Gentlemen:

Attached is the Asbestos Business Area Monthly Summary Report for April 1967. In addition to the work reported herein, two locations have reported patent activity employing High Purity Asbestos: The use of long chain fatty amines salts to promote thixotropy in R-G Asbestos-cycloaliphatic epoxide systems originated by G. Salensky (Bound Brook), and the application of asbestos slurries as an anti-siege agent was initiated by F. W. Bennett (South Charleston).

Very truly yours,

R. G. Woolery

RGW/bsn
Attach.

RECEIVED
MAY 15 1967
J. W. BIDDLE

CHEMICALS AND PLASTICS
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P.O. BOX 579, NIAGARA FALLS, N.Y.

Monthly Summary Report
Asbestos Research & Development
April, 1967

TO: (See Attached Distribution List)

FROM: R. G. Woolery

DATE: May 10, 1967

Pulp and Paper

Technical Service personnel attended two successful Asbestos "T" mill trials during April. Champion Papers, Inc. (Hamilton, Ohio) realized a savings of over $4.00 per ton of paper by substituting Asbestos "T" for 50% of the titanium dioxide usually added to their furnish. At Weyerhaeuser Corp. (Plymouth, North Carolina) an 80% substitution of Asbestos "T" for titanium dioxide was accomplished. In this case, the savings approximated $1000 per day for their one machine mill.

Assistance to Technical Sales was provided in the form of sample analyses and the evaluation of a successful Asbestos "T" mill trial at Boise Cascade Corp. (International Falls, Minn.). Samples received and analyzed were submitted by Sorg Paper Company (Middletown, Ohio), Fitchburg Paper Company (Fitchburg, Mass.), and Northwest Paper Company (Pomona, California).

An informal report covering the laboratory evaluation of PKT (a fibrous pigmentary potassium titanate made by DuPont) has been issued. This work, requested by Technical Sales, indicates that PKT, although an extremely efficient opacifier, is not superior to our Asbestos "T" product.

Laboratory studies are under way to determine the cause of the loss in optical brightener efficiency for paper furnishes containing asbestos. There are some indications that certain metallic ions, which are readily adsorbed onto the asbestos, prevent the fluorescence of optical dyes.

A thorough evaluation of King City's Asbestos "T" products was initiated this month. Samples of 65:35 (asbestos:titanium dioxide) and 50:50 pellets are being compared for their effectiveness in replacing titanium dioxide in paper furnishes. Titanox, a titanium

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dioxide by National Lead, is also being evaluated as a replacement for the Japanese TiO_2 presently being used in the production of Asbestos "T". King City production samples are also being studied in an attempt to determine why pellets have superior retention and optical properties over asbestos:titanium dioxide slurries of equivalent composition. Samples submitted by King City for this work include an asbestos-TiO_2 slurry, Asbestos "T" filter cake, green pellets, and dried pellets.

A report covering the completion of four studies by the University of Maine was received and distributed. This work includes their findings on (1) the effect of drainage aids on pulp furnishes with and without asbestos, (2) the effect of asbestos on pulp freeness and sheet porosity, (3) the light scattering capability of PKT, titanium dioxide, and Asbestos "T", and (4) the bulking effect of certain natural occurring zeolites on laboratory handsheets.

G. L. Dickson

Plastics Applications

A stable, asbestos reinforced polypropylene results from the use of 8 phr stabilizer. At this level, however, high cost would preclude its utility. Pre-treatment of the asbestos with polyethylene results in polypropylene compounds with marginally improved heat stability. Neither sulfur dioxide nor sulfurous acid improves the performance of High Purity Asbestos.

Stearic acid lubricant in vinyl (VYNS)-asbestos compounds provides better dispersions and color. Mechanical properties, however, are about 5% lower than in those compounds without stearic acid.

Cobalt accelerators, as is the case with Cab-O-Sil polyester mixtures, reduce both the viscosity and thixotropic index of R-G244 thickened low viscosity polyesters. Larger concentrations of R-G244 will partially overcome this effect.

A technology seminar was held for members of the marketing area for Coatings Intermediates Division, Adhesives and Sealants, Flooring and Calendering, and the International Company. The history of our asbestos project, development of its uses in plastic products, and the current laboratory program were discussed.

A visit was made to the Baroid Division of the National Lead Company to discuss the use of HPA for grease thickening. The Baroid laboratory has developed a new type of quality grease employing a 10 to 20% replacement of bentones with asbestos. The product is ready for market development and will require an estimated 200 to 300 tons of asbestos per annum in 2 to 3 years. They are asking for an exclusive for marketing asbestos to the grease industry.

R. E. Byrne

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Asbestos Research

A study of dilute asbestos suspensions was begun for the purpose of measuring the basic interaction characteristics of asbestos fibrils. Modification of asbestos surface properties with CMC is continuing in an attempt to control the rheological and filtration properties of asbestos slurries and of mixed asbestos-bentonite slurries.

An asbestos sample, treated to reduce its alkalinity, was submitted to Mr. D. F. Braun for testing as a carrier for agricultural chemicals.

Laboratory tests have been completed to determine the best conditions for preparation of silica-treated asbestos (R-G244), and a final report is being prepared.

The contract research being pursued on HPA in Ceramic Research has failed to show an economic market potential. For this reason, this portion of the program is being phased out.

S. Chwastiak

Asbestos Development

The first commercial shipment of 100 pounds of R-G244 was made to Reichhold Chemical Company on April 10. Our present R-G244 inventory currently stands at 1000 lb.

Several R-G244 processing variables were investigated. A newly installed blade-type Mikropulverizer rotor was found to be ineffective in liberating fiber for a specification-grade product. The solids content of this slurry has been successfully raised to 4% and laboratory-scale studies are in progress to see if this can be raised to 10%. A sulfuric acid leached product did not produce thickening in a polyester resin. A product blending, opening, and packaging facility has been set up to handle the R-G244 material. Ten pounds of opened material can be loaded into a Resin Grade bag, but low bulk density and poor flow characteristics make it difficult with the Auger Packer being used.

Samples of competitors' asbestos products being used in drilling muds were received and compared to HPP and S-G200 for aqueous viscosity promotion, particle size distribution, liberated fiber, and purity. A definite economic advantage is indicated for our asbestos relative to Visbestos and Flosal. Our Patent Department has given us clearance to field test our product on an experimental basis.

The aqueous slurry viscosity of Asbestos "T" was determined and compared to that of TiO_2 slurries. These data are required for customers' design of slurry feed systems. The results show that 6-7% Asbestos "T" is equivalent to 25% TiO_2; low shear rate viscosities

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are comparable; and at high rates, 7% "T" is slightly greater. The absence of settling with Asbestos "T" simplifies the distribution system to a single pipe in place of the usual loop.

A process water treatment trial at Oxford Paper Company Lawrence, Mass. shows HPA to be effective in clarifying sand filter effluent. The performance of the asbestos was compared to alum and Nalco 605 (a polymeric flocculant). The tests were evaluated on the basis of turbidity and color.

A procedure for in-place cleaning of King City filter cloth has been proposed. The method consists of spraying the cloth with a 4% asbestos slurry of 1 molar acetic acid to dissolve the calcium carbonate (aragonite) deposits.

Samples of HPA were submitted to E. I. DuPont as a thixotrope for concentrated salt solutions.

J. E. Skvarla

Technical Reports Issued in April, 1967

1. "Modified High Purity Asbestos, The Evaluation of Silica-Treated Asbestos and Alumina-Silica-Treated Asbestos as Papermaking Additives" Study No. 61 by G. L. Dickson

2. "Evaluation of PKT", Study No. 54 by G. L. Dickson

3. "Optical Properties Attributed by Asbestos to Paper", Project No. 73 by B. L. Ingalls.

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