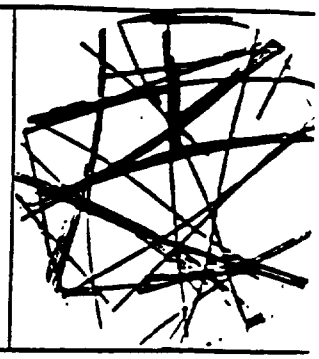
PLAINTIFF'S EXHIBIT

UC-4830

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ASBESTOS

UC INFORMATION BULLETIN



PREPARATION AND METHOD OF ADDITION OF THE HIGH-PURITY ASBESTOS FIBER TO THE FURNISH FOR THE MANUFACTURE OF PAPER

1. Method of Addition

The asbestos fiber is added to the stock preparation system for homogeneous distribution in the same manner as regular wood pulps. Present experience and information on retention properties suggests the following order of addition when using a slurry or opened asbestos fiber:

a. White water

b. Asbestos

c. Normal order of addition for pulps

d. Resin

e. Filler

f. Dye

g. Alum

Suggested practice above is based on the normal makeup. Unusual deviations from the system makeup shown above should be considered as a special case. For example, if bentonite or talc were being used, normally the elimination of this material would be suggested. Asbestos fiber with its superior oil absorbency characteristics, as well as its high specific surface value would be more effective for pitch control properties.

For furnishing Kraft or sulfite specialty grades furnish makeup should be planned for mill trials considering the individual characteristics for each system. As with all stock preparation systems for proper blending of pulps, good agitation to obtain a uniform distribution of the blend of pulp and asbestos fiber is desirable. From experience and the technology developed to date the fibrous asbestos should be treated as a pulp rather than an additive.

Deposition DEPO. EXH. 14
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2. Points of Addition

A. Batch Type Furnish Makeup Systems

The high-purity asbestos fiber can be blended with the furnish in:

1. Hydropulpers
2. Slushmakers
3. Beaters (when roll is used for blending or beating)
4. Dynopulpers
5. Hi-Lo pulper
6. Pulpmaster
7. Mix tanks with good agitation

B. Continuous Stock Systems

When pulps and chemicals are continuously blended for furnish and chemical makeup, asbestos fiber can be dispersed at 2% solids in Union Carbide's new pellet disintegrator. Good mechanical shear-type agitation is desirable but not absolutely essential. Experience reveals that a mixing tank with a centrifugal pump and recirculation line will provide adequate agitation for opened high-purity asbestos fiber.

C. Specific Retention Applications - Dye Retention Improvement

With critical dye retention problems where the asbestos is to be evaluated strictly for dye efficiency improvement in the manufacture of specialty products, premixing of the asbestos and dye solution should be practiced. With a batch system, this is done as the first step in furnish makeup. With a continuous system a mix tank would have to be used. That is the continuously metered dye solutions and the continuously metered asbestos fibrous slurry would be fed to a small mixing tank which could be gravity-fed to the furnish blending chest.

With all applications for paper quality improvements and material retention improvements, methods of incorporating the asbestos fiber should be used to allow homogeneous distribution and intimate contact. Union Carbide's new pellet disintegrator can be used if there is any doubt.

D. pH Conditions

For best dispersion asbestos fiber should be blended with the furnish in the pH range of 4 to 6 -- 5 is optimum.