



E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED

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PIGMENTS DEPARTMENT

CONFIDENTIAL

DR. J. H. COOPER (3)
NEWARK.

DEC 5 1950

D.B.K.

DEC 14 1950

J. H. C.

DEC 6 1950

A.S.

SPECIAL GRINDING STUDIES A-II-C-261 (50%)

HF GRIND OF CPC GREEN IN ACETONE

One semi-works grind of an Orchem crude CPC Green presscake was made with borax in acetone. After 2 hours the strength was equal to GT-674-D, lot 430, and the tint was intense. The final sample (3 hours) was dark, intense, 6% strong, intense vs lot 430. This sample was not quite as strong as, but much more yellow and intense than a similar sample made from a Newport crude paste. The method seems to deserve more study.

AQUEOUS GRINDS IN BALL MILLS

Studies of various combinations of agents in aqueous grinds in 1/2 pt. jars have been continued. 6% CMC and 10% BRIJ 35 (ex Atlas) have given results substantially equal to that with 5% Blancol, all being used with borax. No combination of these agents has shown a significant benefit. BRIJ 35 has not shown any benefit when used with acetone, but there is some evidence that borax is beneficial in such grinds. However, the amount used may well be impractical.

The products of recent aqueous grinds are still considerably short of the strength of BT-304-D, but continue to seem of definite interest.

HF GRINDS IN WATER

During this month attention has been turned to the evaluation of the aqueous ground samples in brushouts and roofing granules as well as in oil systems. Whereas the strengths in oil systems have approached but never equalled that of BT-304-D, in brushout strength, substantially better than BT-321-P has been obtained on several occasions. This has been confirmed with at least two samples as fully equal to BT-321-P in the Staso test on roofing granules. However, the two tests are not always parallel.



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For brushouts, samples milled in the presence of Blancol show increasing strength with increasing Blancol. 10% Blancol gives a strength equal to or a little better than BT-321-P and 20% Blancol is substantially better. However, the filtration problem with these high amounts of Blancol may render the process impractical. Combinations of other agents, such as VICTAWET 12 (ex Victor Chem.) or BRIJ 35, with 10% Blancol have given no benefit and possibly harm in brushouts, but the combination with BRIJ 35 was the best sample in roofing granules.

Samples prepared with CMC approach the Blancol products in brushout, but are still somewhat inferior.

It is proposed to test some of these samples in other applications such as in linoleum lakes and to make one or more semi-works grinds to study scale-up possibilities and to obtain sufficient paste for more complete evaluations.

A study of the use of triethanol titanate derivatives as treating agents in HF grinds with borax in water gave no results of interest. The ground products were no better than the original crude in either strength or intensity.

W.D. POWDERS BY HF GRINDING

Two trials of the HF mixer in the preparation of W.D. powders were made. In one, the starting material was a crude paste which was added to the mixer with all the W.D. ingredients. A viscous paste resulted, but several hours operation failed to develop much strength. Sand was finally added to the mixer after which much heat was developed and there was considerable evaporation. Some strength was developed at this stage but it fell far short of BP-192-D.

A similar trial was made using finished Blue LB paste of semi-works manufacture. The experiment paralleled the first both in procedure and in results except that the strength increase was proportionately less, the final strength being perhaps 65% that of BP-192-D.

One interesting observation in this study is that a W.D. paste diluted to a thin slurry can be readily pan dried in a reasonable cycle.

A. J. Stratton
A. J. STRATTON
CHEMICAL DIVISION

AJS:MPH

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