

CONFIDENTIAL

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GRINDING STUDIES
HF PROCESS

A-IIC-261 AJS-45%

Considerable attention during the month has been given to the physical separation of borax from ground slurries. Grinds made with acetone of high purity were diluted with water until sedimentation of borax occurred followed by decantation of the pigment slurry. After one such procedure, the borax was successfully reused with additional borax, pigment and acetone. However, the degree of sedimentation has been quite variable and the dilution required has been such that the loss of borax by solution has been substantial. It seems futile to expect centrifugal separation to be effective until reliable methods of sedimentation have been developed. At the moment no obvious reason has appeared for the peculiarities in sedimentation.

One experiment on the speed of agitation indicates that substantial reduction in grinding times may be possible. Most of the recent work has been done at 1250 RPM with 4 inch discs on the laboratory drill presses and require about 2 hours to develop the desired strength. However, the one recent experiment at 2450 RPM gave as much or more strength in one hour as had previously been obtained in 2 or 3 hours at 1250 RPM.

A study of the use of Turkey Red Oil in grinds with borax in pure acetone and in 75% acetone yielded no evidence of value in its use.

A grind using glycerine as the vehicle gave little, if any, increase in strength over the original crude blue.

Efforts have been continued in the search for means of using water as the vehicle for HF grinding and, during this month, some encouraging leads have been obtained in that substantial strength increases above the original crude have been finally demonstrated. It seems that one problem of substantial magnitude is to obtain a suitable wetting and dispersing agent which can be effectively removed or flocculated after the grind without introducing undesirable properties. This work is being actively pursued.

Grinds of Red RL in the HF unit were similar in character to other solvent grinds but appear to be on the defensive even against the best of these.

Grinds of Violet 4RN in the HF unit have been very successful in developing excellent strength and intensity. It is planned to try this in the semi-works unit.

AJS:RMK

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