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Philadelphia Laboratory
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MEMORANDUM REPORT #M-41

"DULUX" SUPERWHITE COLOR STANDARD

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During Ben Mansi's recent work on linseed/PE "DULUX" Superwhite, he noticed that the present 58-613 color standard ("Duco" Dry Plate P-5078 dated 10/17/45) appeared to be on the dirty side, and the poor color of this standard was verified by checking against a batch of the present rutile 58-613 formula produced in 1941 under the code P-58-N-40490, Batch P-48408. This was discussed with Dr. A. J. Hemmer and it was agreed that the present dry plate standard did not represent the proper shade and that steps should be taken to provide a satisfactory color standard. Evidently, some error was made when the dry plate standards were set up, but we do not know how this happened. The Control Laboratory has available one of the present dry plate standards showing color approval by both M. E. Grubb and the writer at the time it was established, but regardless of this fact, the dry plates are unsatisfactory for color. Unfortunately, none of the old wet standard in use prior to adoption of the dry plate standard is available and new standards will have to be prepared based on available evidence and our best judgment. The available evidence is as follows:

1. We have available P-58-N-40490 (Batch P-48408) made on the present 58-613 rutile formula and passed for color in 1941 versus the wet standard then in use.

2. The old porcelain color standard in use during 1937 is available and this was superseded by a wet standard of improved color. This new standard was adopted 1/21/38 per information given in Mr. J. F. Frailey's letter to E. J. Macfarlan dated 10/12/38. It is known that this wet standard was cleaner in color than the porcelain standard and that it could be matched using 32-508 only as the tinting material in an amount ranging from 9-10 lbs. of 32-508 per 1,000 gallons of 58-613. This information is also given in Mr. Frailey's letter of above date. At that time, namely, 1938, 58-613 was made on the 90/10 - W-16/W-154 basis.

We have prepared in the laboratory a batch of 58-613 on the 90/10 - W-16/W-154 basis and have tinted this material with W-508 (not W-514) in the same amount as previously used in 1938, namely, 9.5 lbs. of 32-508 per 1,000 gallons of 58-613. This product is coded P-58-P-50767 and is evidently very close in color to the 1938 wet standard, because it is about the same depth as the 1937 porcelain, but definitely cleaner. It is also slightly cleaner than P-58-N-40490 which is to be expected, because production on the anatase basis had somewhat better color than the present rutile formulation.

The fact that P-58-N-40490 (Batch P-48408) is now approximately 5 years old and at this time is only slightly poorer in color than P-58-P-50767 (Anatase basis tinted with blue only), indicates that very little if any color change has taken place on aging and, accordingly, this rutile formula appears to have good color stability and should be satisfactory as a wet color standard.

A laboratory batch of the present rutile 58-613 formula prepared by Ben Mansi under the code P-58-P-59649 was tinted with 32-514 and 32-501 to as close a color match as possible to the above laboratory prepared anatase material. When tinted in this manner P-58-P-59649 was found to be a very close match to P-58-N-40490 and slightly dirtier than the anatase material, as expected.

Exhibits of the above were shown to and discussed with B. L. Mansi, A. J. Hemmer, M. E. Grubb, T. H. Langstroth and J. Connahey, and it was mutually agreed that P-58-P-59649 tinted as above should be satisfactory for adoption as a wet color standard for 58-613. This product is considerably better in color than the old 1937 porcelain standard and the current dry plate standard which was considered unsatisfactory.

The adoption of P-58-P-59649 as the color standard for 58-613 and other products of equal shade will provide a standard slightly poorer in color than the anatase type wet standard previously in use. However, the possibility of a slight sacrifice in color with the rutile formula has been previously pointed out to Sales in Release Letter No. 588 and supplements.

We believe that the only production which has been matched to the unsatisfactory dry plate standard is the P-296 resin Du-lux Mill Whites recently manufactured. Accordingly we anticipate no trouble whatever in changing to the improved color standard immediately.

PHILADELPHIA LABORATORY

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