

File COP 8-56

Westinghouse

H. C. B. Keefe

FROM Hampton Works

DATE May 10, 1957

SUBJECT Discoloration of
Inks on Moore McCormick
Samples

2. → Mr. D. E. Baldwin - Hampton Works - Engineering Section Manager

cc: Mr. W. H. Leland - Hampton Works - Sales Section Manager
Mr. A. E. Anderson - Hampton Works - Sales Department
Mr. R. B. Hetrick - Hampton Works - Engineering Department

As you are aware, we found on May 9, 1957, that the inks used to print the Moore McCormick patterns darkened when tested for color fastness according to NEMA specifications in the Fade-O-meter. On this date, we advised Decotone of our results and requested that they check the patterns for color fastness. On May 10, Mr. Pollock of Decotone called and stated that they had also encountered darkening on the inks after the color fastness test. Their samples were prepared using American Cyanamid's Cymel 405 melamine resin. The samples printed by Decotone were made using inks containing titanium dioxide (TiO₂) pigments. It was our belief, and theirs also, that the blue-gray darkening on the samples was caused by the discoloration of the TiO₂ pigments used in the inks. Mr. Pollock stated that they were in the process of evaluating an ink for this application that consisted of a 50-50 mixture of TiO₂ and ZnS. It was found by Decotone that an ink using only ZnS pigment did not have the coverage necessary for these patterns.

Mr. Pollock also stated that they had been using inks for some time containing TiO₂ pigments, and, to his knowledge, they had never encountered any serious field complaints. I advised Mr. Pollock that this product was sold to meet NEMA requirements; therefore, we could not use this print as is.

As a matter of information, we have evaluated these prints using American Cyanamid's Cymel 428 and Monsanto's Melmac 814, and the same discoloration was noted on both series of samples. Since Decotone used American Cyanamid's Cymel 405, we have the evaluation of three melamine resins with the same results. I believe this should rule out any possibility that our process is affecting the stability of the inks.

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Our Fade-O-meter was checked for compliance with the NEMA requirements. It was found that we met all requirements except the equipment was running approximately 30°F too high. During the investigation of the discoloration of TiO₂ and ZnS at the Battelle Institute, it was found that temperature did affect the discoloration of TiO₂, but, according to their results, it was a yellowing in the paper. Since all of our discoloration was a blue-gray darkening, the effect of temperature was very slight in these tests. This appears to be an accurate assumption since Decotone duplicated our results.

The corrective action now lies with Mr. Sement, Decotone, and the designers. From our Engineering view, the prints as submitted are not acceptable.

W. C. Hood
W. C. Hood
Engineering Department

WCH/ch

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