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MEMORANDUM REPORT NO. M-317

CRUDE SOYA OIL IN ALKYDS

This report covers work done at the request of Engineering Service to determine whether satisfactory alkyds could be made from crude soya oil by using Adsorbol Clay throughout the resin cook.

Conclusions:

1. Gelation difficulties are normally encountered in the preparation of crude oil resins because the impurities in the oil prevent the preparation of a proper monoglyceride. This can be remedied by substitution of about 1.5% G-218 (based on the oil) for the usual 0.1% G-218 monoglyceride catalyst.

2. Resins made with and without 3% Adsorbol Clay are practically identical in final constants. Such resins, although substantially normal in other properties, are much darker in color (5.2 as compared to 3.2) than those made from alkali refined oil under the best conditions.

3. In manufacture of resins from crude oil, the following additional points need to be considered, (a) impurities in the oil will result in a loss of about 5% of the oil by precipitation during the cook, (b) these impurities may char and clog heat exchangers, and (c) they may, because of their gelatinous nature, cause filter pressing troubles.

Experimental:

Resins of the RC-453 type were made from (a) H-59, (b) crude soya and (c) crude soya with 3% Adsorbol Clay (on resin solids) present during entire cook. Comparisons of the solution properties of these resins were made.

References:

Experimental detail concerning this work may be found in Notebook 3688, pages 36 to 43 inclusive.

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