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65-1 TUNG SOY IN OUTSIDE WHITE
HOUSE PAINTS

A sample of 65-1 Tung Soy has been submitted by Archer-Daniels-Midland Company as a replacement for linseed oil in house paints. This is a blend of tung and soya oils which have been given a mild heat treatment. The ratio of Tung to Soya is reported to be 70/30. The viscosity is G, the acid number is from 1 to 3. A.D.M. recommend the material as the complete vehicle in a conventional outside white pigmentation of titanium oxide, leaded zinc oxide and magnesium silicate at approximately 36% pigment volume.

The sample in this laboratory, DS-18124, has been made into a paint of the type of 301-864 #40 Outside White, except that the extender is entirely W-4 Asbestine, instead of a mixture of W-4 and barytes. This has been compared with a linseed oil paint of the same pigmentation in which the vehicle is 75/25 H-19 Refined Linseed Oil/VO-8000 Bodied Linseed Oil. The paint appears to be satisfactory for initial properties, having better brushing than the linseed oil control, somewhat faster drying and equally good appearance. The solids content is somewhat low, being in the range of oil conservation paint, instead of limpid oil paint.

Durability information is lacking on this material in house paints. If the durability were known to be satisfactory, this would offer the means of making a house paint of low oil content which would be very much superior to the oil conservation paint in working properties.

Details:

The paint containing 65-1 Tung Soy is P-301-R-4388. This is compared with the linseed oil control, P-301-R-4318. The solids content by volume for P-301-R-4388 is 79.0% as compared with 87.7% for the control. The corresponding oil contents are 3.84 lbs. and 4.25 lbs. of oil per gallon respectively.

Both paints were brushed out with a five minute lapping time. The brushing and lapping of P-301-R-4388 were rated very

good, whereas P-301-R-4318 is only fair, since it shows a slight drag on the lap. Both paints have fairly high gloss with rounded brush marks.

A drying test was carried out both in the constant temperature room at 77°F. and 50% relative humidity and in a cooling chamber at approximately 50°F. and high humidity. P-301-R-4388 became set-to-touch in 4-1/2 hours as compared with 7-1/2 hours for the linseed oil control and showed very slight tack overnight while the control was still tacky in the constant temperature room. In the cooler, P-301-R-4388 was set-to-touch in 7-1/2 hours, whereas the control required overnight.

The durability of P-301-R-4388 is being determined in a supplement to Exposure Series #9594.

Notebook reference: Notebook #3381, pages 144, 145, 166, 167.

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