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DISPERSION CONTROL IN SOLUTION TYPE PAINTS

In a memorandum of July 16, 1945 on dispersion control in solution type paints, we reported deflocculation or dispersion at 50% linseed oil fatty acids (H-255) content, based on the TiO_2, in a TiO_2-linseed oil system. However, since the paints were made by the addition of H-255 to the basic formula, the decrease in viscosity at the 50% level may have been caused by dilution.

Continuing this study, a ladder was made ranging from 0% to 100% H-255 by volume on the pigment, with the pigment volume remaining constant at 20%. The linseed oil acids replace oil. It was found that a dip occurred at 50%, indicating a comparative degree of flocculation at the same point as in our original work, although the system, as indicated by higher viscosity, is still more flocculated than at 0% linseed oil acids (see curve attached).

To carry the experiment further, soya lecithin (G-12) was used in a similar experiment. We found a similar dip at 10% G-12 on the pigment. It was also noted that the behavior of the paint changed depending upon the source of supply of the soya lecithin.

Conclusion

(1) In this dispersion study, we find a curve similar to the one obtained with water dispersion paints in that the relative degree of flocculation or dispersion is dependent upon the amount of agent added.

(2) However, the variation in the comparative degree of flocculation versus dispersion is less than in water dispersion systems. Therefore, a study of various types of agents will probably yield a greater variation in the available degree of flocculation or dispersion than a study of various amounts of a single agent.

(3) From this work, it appears that to properly study the effect of a dispersion control agent, it is necessary to cover as large a range in concentration of the agent as is practical. It will be noted that 15-25% of linseed oil acids is required to give maximum flocculation in the system studied.

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DISPERSION STUDY

□ SOYA LECITHIN 812
○ L.O. FATTY ACIDS M551