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CROSS REFERENCES:

American Can Co.
Can Coatings

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Philadelphia Laboratory
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EVALUATION OF TRIPHENYL PHOSPHITE IN
CLEAR VARNISHES TO IMPROVE COLOR

This memorandum covers the results obtained in the laboratory with the use of Triphenyl Phosphite in air dry and baking varnishes to improve color. This evaluation was undertaken because of a letter written by W. P. Golio to J. W. Iliff on November 13, 1947 recording his observations at a convention of the Federation of Paint and Varnish Production Clubs in Atlantic City, and in which he stated that the subject ester is being used to improve the color of varnishes. The theory behind this was the conversion of any iron present by the phosphite to colorless salts.

VC-791 Beer Can Base Coat:

We added several amounts of Triphenyl Phosphite, ranging from 0.05% to 0.5% on the varnish solids, to standard VC-791 (selected because it is rich in iron) and baked on the regular schedule of 10 min. x 410°F., over white coated tinplate. An examination of the baked films indicate that the introduction of Triphenyl Phosphite to VC-791 does not improve the color of that product.

MAC-271 (PVKP-63348) Processing Finishing Varnish:

To MAC-271 we added Triphenyl Phosphite ranging from 0.05% to 2.0% on the varnish solids, and after baking 10 min. x 325°F over white coated tinplate, we examined the baked films for color and hardness. No differences in color or hardness were observed, excepting in the case where the 2.0% amount was used, and there we did notice a very slight improvement in color but also a slightly softer film.

VC-1361 Navalite Spar Varnish:

Based on the results we obtained with the use of Triphenyl Phosphite in VC-791 and MAC-271, we added 1.0% of this ester to VC-1361 and observed for color, after 18 hrs. air dry in the Constant Temperature Room. An examination of the films over white coated tinplate failed to show any improvement in color when Triphenyl Phosphite is used.

Conclusions:

The above results indicate that no color advantage could be gained with the use of Triphenyl Phosphite in either baking or air dry varnishes, when used in amounts below 2.0% on the varnish solids. When the 2.0% amount is used, a very slight color improvement is evident, but the improvement is not great enough to warrant the use of this phosphite. Also, this very slight improvement in color is accompanied by a slight loss in hardness of the film. No further work is recommended with this agent in Clears.

PHILADELPHIA LABORATORY

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