TABLE II

Drying Times in White Enamel Systems

Coating formulation (see Table I)	Drier concentration[a]	Type of drier	Set-to-Touch time (minutes)[b]
I	.05% Co	Naphthenate	34
	.05% Co	Neo-decanoate	27
II	.05% Co	Naphthenate	151
	.05% Co	Neo-decanoate	120
III	.05% Co	Naphthenate	181
	.05% Co	Neo-decanoate	169
I	.05% Co + .50% Pb	Naphthenate	29
	.05% Co + .50% Pb	Neo-decanoate	21
II	.05% Co + .50% Pb	Naphthenate	133
	.05% Co + .50% Pb	Neo-decanoate	126
III	.05% Co + .50% Pb	Naphthenate	118
	.05% Co + .50% Pb	Neo-decanoate	107

[a] Percentage of metal based on total vehicle solids.
[b] Finger-tip touch method (ASTM D-1953).

properties when compared with similar driers based on naphthenic acid. The drying rates shown in Table II were determined with the conventional finger-tip touch method (ASTM D-1953).

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Color Reactions of Red Palm Oil

AMMONIUM MOLYBDATE-sulfuric acid reagent is reported to give a specific color or turbidity reaction with some fatty oils (1). Experiments at this laboratory revealed two interesting facts (2). Ammonium molybdate does not have any part in the reaction, and an identical response is obtained with concentrated sulfuric acid alone under the same experimental conditions. Red palm oil gives an intense green-blue coloration, which is attributed to the presence of lycopene (3) in the oil. This observation is confirmed by the following.

Bleached palm oil does not give a color in the test because of the destruction of lycopene during the bleaching process. Red palm oil gives the green-blue coloration by direct contact or in nonaqueous media with arsenic trichloride, antimony trichloride, and trichloroacetic acid, which are specific reagents for lycopene, resulting in formation of the unstable carbonium salts (4).

These reagents are rather sensitive both in regard to the size of the sample and the concentration of lycopene. Thus, when a drop of red palm oil is placed on a porcelain tile and a drop (of arsenic trichloride) or crystals of the other two reagents are added and stirred with a glass rod, a blue-green color appears. Peanut oil to which 5% by weight of red palm oil has been admixed responds to these reagents, especially on a porcelain tile by direct contact.

The causal role of lycopene in the reaction has also been checked by extracting lycopene from fresh and ripe tomatoes with petroleum-ether-acetone and dissolving it (lycopene) in peanut oil and bleached palm oil and performing the test with the use of the four reagents (including concentrated sulfuric acid). A green-blue coloration results in all cases.

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• *Erratum*

"Whiteness and Fluorescence of Fabrics," K. J. Nieuwenhuis, JAOCS *45*, 37–42, 1968. On page 39, left-hand column, last line, the "G < 82," should read "G > 32."