

and obtain a harder set at an earlier time than do any of the bodied esters from the various cyclitols. The set and dry times of the bodied pentaerythritol esters are far superior to those of any of the other esters studied in this series.

It was pointed out previously concerning the heat polymerization of these oils that the hydroxyl content of the cyclitol esters decreases during heat processing. Dehydration of the cyclitol esters may occur in such a manner that an aromatic or cyclic olefin structure results. If the former is a diphenol type, it may act as drying inhibitor, and this may be a partial explanation for the delayed drying and set times shown by the heat-bodied cyclitol esters compared with the heat-bodied pentaerythritol esters.

In brief summary then, pinitol and quebrachitol esterify with linseed fatty acids at a rate somewhat slower than glycerol and faster than inositol. The esterification rates, physical, chemical, and film drying properties of the esters of these two cyclitols appear to be almost identical. The viscosities of the cyclitol esters are in all cases greater than those of the pentaerythritol esters when measured at the same

degree of polymerization. The cyclitol esters have drying times similar to those of the corresponding monopentaerythritol esters and a little slower than those of the dipentaerythritol ester. Film toughness is similar to that of tripentaerythritol esters. Heat-bodding of pinitol and quebrachitol esters reduces their drying speed. This latter effect is in contrast to that observed with pentaerythritol esters, which dry more rapidly after heat polymerization.

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[Received January 21, 1954]

Letter to the Editor

DEAR SIR:

Our attention has been drawn to the article by R. C. Stillman entitled "The Color Committee," which appeared in your March issue.

Mr. Stillman has inadvertently criticized the Lovibond system of color measurement when in fact his criticisms were really directed against the Wesson method, which has been used by the A.O.C.S. for many years.

Color is a subjective sensation which exists only in the mind of the observer, and when a customer agrees to pay a certain price for a certain colored oil, his only interest is "what does this color look like." He is not in the least interested in a series of figures which give the transmission at certain selected wavelengths because, firstly, these figures cannot possibly convey to the ordinary person what the color looks like and, secondly, two different colored liquids with entirely different transmission figures may look exactly the same to the average observer. Conversely, two sets of figures which appear very closely similar one to the other may represent very different visual colors. Hence the first point which we would make is that in this particular case of the valuation of an oil on its color, it is a statement of *what it looks like* that is required.

Color is, of course, three-dimensional, and the Lovibond system measures color in all three dimensions whereas the Wesson method for simplicity's sake ignores the brightness factor and seeks only to measure the degree of redness. The difficulties to which Mr. Stillman refers are caused by this over-simplification.

Mr. Stillman very truly remarks that the one thing that has not changed in 40 years is the Lovibond scale, and the oil industry in resisting a change has shown its wisdom in anchoring its standardization method to a scale of such rock-like stability.

As your previous Color Committee chairman reported last year, the difficulty of obtaining agreement between instruments employing spectrophotometric methods appears insuperable, and we submit that the use of a simple visual color standard for the practical men in industry has no rival.

Yours truly,

THE TINTOMETER LTD.

G. J. CHAMBERLIN
Managing Director
Salisbury, England

April 8, 1954

DEAR SIR:

In reply to Mr. G. J. Chamberlin's letter of April 8, the Color Committee chairman has written Mr. Chamberlin to the effect that the Color Committee chairman has no criticism of the Lovibond system of color measurement *per se*:

The Color Committee of the A.O.C.S. has been seeking for a long time to develop a color method which eliminates the personal equation. In order to do this, an instrumental method is required. In all instrumental methods, difficulties with instrument response are encountered. Serious consideration needs also to be given to these factors. They should be measured and taken into account in the resultant color equation. The work still goes on in the search for an ideal system of color measurement.

One of the biggest criticisms of the use of Lovibond type in a Wesson colorimeter for measuring oil colors is the fact that apparent red values are reduced when chlorophyll is present in the oil. The second criticism is based on the fact that visual comparisons must be made. The Color Committee finds no fault with the Lovibond system of color measurement. The Color Committee only seeks to show why the use of the Wesson system with Lovibond glasses is inadequate for evaluating an oil and seeks to find a more satisfactory method for the evaluation.

R. C. STILLMAN, chairman
Color Committee

June 4, 1954