

ETHYL CORPORATION

J. S. Wintringham

RESEARCH LABORATORIES

1600 WEST EIGHT MILE ROAD

FERNDALE 20

DETROIT, MICHIGAN

September 21, 1948

Dr. R. A. Kehoe
University of Cincinnati
Medical College
Eden Avenue
Cincinnati 19, Ohio

Dear Dr. Kehoe:

We have a few further observations on Vitol fluid to pass on to you. The concentration of tetraethyllead dissolved in the corrosion inhibitor and the proportion of the total TEL which this represents have been determined. Our results are tabulated below.

	<u>Sample 1</u>	<u>Sample 2</u>
<u>Total Vitol fluid</u>		
g.Pb/gal.	3.23	2.87
ml. TEL/gal.	3.06	2.72
<u>Continuous (inhibitor-free) phase</u>		
g.Pb/gal.	2.84	2.43
ml. TEL/gal.	2.68	2.30
<u>Dispersed (inhibitor) phase</u>		
wt. % Pb	7.47	6.46
wt. % TEL	11.7	10.1
g.Pb/gal. Vitol	0.39	0.44
Vol. of dispersed phase, ml./gal.	6.2	8.1
wt. % of total TEL occurring in dispersed phase	12.1	15.3

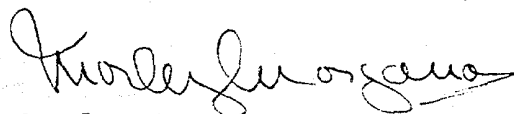
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To obtain a sample of the corrosion inhibitor, 2 gal. of Vitol was allowed to stand undisturbed for about two days. The lower 90 ml. was removed and centrifuged at 1800 RPM for two hours. The clear lower layer which separated from this was analyzed, and the slightly cloudy upper layer was filtered and analyzed. This experiment was performed on two batches of Vitol: Sample 1 was prepared in this Laboratory according to instructions received from Thompson; Sample 2 was obtained through Thompson from the Canton Refinery. The separability and analytical data of the two samples are in essential agreement, the slight variation being undoubtedly caused by the difference in total TEL content.

To us, these figures have considerable significance. In the first place, we have demonstrated to our satisfaction that the dispersed corrosion inhibitor does separate. In the second place, this inhibitor contains a very high (10%) TEL concentration. An additional fact, not of interest from a hygiene standpoint, is that in the extreme case of complete separation of the inhibitor, as much as 15% of the available TEL would be lost to the fuel. This may only be approached in practice, but it represents a further undesirable condition. Good practice with leaded gasoline calls for keeping variation in the lead content, refinery to customer, almost within the precision of the analytical method. It should be remembered that this TEL gradient was established in the first place by allowing the fluid to stand two days without centrifuging.

Very truly yours,


Morley Morgana

MM:vg

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