

CONTACT REPORT

Date: January 19, 1959

Place: California Research Corporation,
200 Bush Street, San Francisco, California

Present:	J. Cooley,	California Research	
	J. MacGregor,	"	"
	F. Kavanagh,	"	"
	H. McPherson,	"	"
	M. Baruch,	"	"
	Dr. Curtiss,	Standard Oil Co. (Cal.)	Medical
	Mr. J. Spence,	"	" "
	H. Sigworth,	"	" , PED, Western Operations
	F. Sitek	"	" , Marketing
	R. Rogers	"	" , Mfg.
	Dr. R. Kehoe,	Kettering Laboratory	
	R. K. Scales,	Ethyl Corporation	
	H. J. Gibson,	"	"

SUBJECT: More Volatile Lead Alkyls

John Cooley opened the meeting by stating that they would prefer to discuss first the medical aspects of the more volatile alkyls. Dr. Kehoe then started to review his background in this area. He emphasized that while there were definite differences among the several methyl-ethyl alkyls insofar as absolute toxicity is concerned, he feels that these differences are small relative to the problems imposed by the differences in volatility of the compounds. Volatility is important in that it affects the exposure level of individuals, and hence the rate of accumulation of Pb. He stated that 75 micrograms Pb per cubic meter is the maximum to which a man should be exposed on a continuous basis, and is the maximum in our plants. He emphasized that organic and inorganic lead were quite different in their effects. He agreed to provide California Research with certain of his unpublished data on toxicity of the methyl-ethyl alkyls for different types of exposure.

A very wide variety of questions was asked of Dr. Kehoe. John Cooley pointed out that they could not justify a large-scale experimental program if factors now known would prohibit the use of more volatile lead compounds. He wanted to know whether a long toxicity study would be required, after exposure level was determined, before a more volatile compound could be used commercially. Dr. Kehoe emphasized that knowledge now available

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did not permit stating the allowable level of volatility. He said that if we found the lead-in-air ratio, TML/TEL, to be 1 to 1 it was obvious there would be no problem, if 2 to 1 there still would be no concern, if 40 to 1 he'd say that use of TML was impossible. He stated a ratio of 10 or less would not clear TML but would offer hope of commercial use. (These comments apply to the other alkyls and mixtures, also.)

Discussion indicated that greatest exposure would be expected at truck and tank car loading racks, and service station or fleet dispensing jobs. Carburetor servicing jobs were recognized as being possibly hazardous.

Considerable time was devoted to discussion of field testing of exposure level. Mr. Rogers pointed out that their Bakersfield refinery would be the best place to do the job. However, premium gasoline alone would require the Pb equivalent of 216,000# TEL for a 3-month test period. Treating regular would add another 70,000 pounds. It was pointed out that a quantity such as this was utterly impractical for us to make. Dr's. Kehoe and Curtiss indicated they would be much concerned about a test program of this size. Discussion then centered on how to do a smaller-scale test. Finally, it was agreed that means would be found to study lead levels with TEL at California's refinery loading racks. Relative exposure due to TEL and TML in the Yellow Cab fleet refueling station would be studied. (California Research has, or shortly will receive from competition, the 500-pound lot of TML on which we were asked to bid. This should not be discussed with California Research personnel.)

There was considerable discussion among Drs. Kehoe and Curtiss and Mr. Spence as to whether studies should be based on lead-in-air or on urinary excretion or both. It appears California will use both. It appears that we at Ethyl can expect to learn the results of their study but will have no part of it. Mr. Cooley was most emphatic in stating that he wanted to use TML in these studies.

The people from Richmond and Messrs. Scales and Gibson compared notes on antiknock and lead-in-air studies. California Research data on relative lead-in-air with TML and TEL agree well with ours where we have comparable studies. (Copies of their data have been supplied to Messrs. Hesselberg, Hirschler, and Gibson.) Given to California Research were:

1. Evaporation of Lead Alkyls - H. J. Gibson - January 15, 1959, summarizing data obtained under D. A. Hirschler's direction
2. Evaporation of Lead Alkyls - H. A. Beatty - 1958
3. Lab. Antiknock Evaluation of TML, MA-250, MA-500, MA-750, and TEL in Finished Gasolines - dated 1/15/59 prepared by Maassen and Buerstetta.

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They were told of our studies of antiknock destruction with sulfur and phosphorus.

This was a most pleasant and informative meeting.

Harold J. Gibson
Harold J.

HJG/dl

Copies to:

D. M. Guy
H. E. Hesselberg
D. A. Hirschler
R. V. Kerley
W. G. Lovell
W. B. Ligett
R. K. Scales
R. A. Kehoe
G. F. Kirby
P. A. McKim
P. Weimer
J. Koehnle
Gil Way

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