

June 18, 1943

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CONFIDENTIAL

Dr. L. E. Edelman,  
Director of Research,  
Lake Erie Chemical Company,  
2200 Scranton Road,  
Cleveland, Ohio.

Dear Dr. Edelman:

I promised to send you some information on specific matters about which you asked questions. I was careful to obtain the information at first hand from the most experienced technical people in the Ethyl Corporation. I can give you no better answer than to quote word for word from a letter that I have just received.

"Decomposition of Tetraethyllead

"No definite answer can be given to the question as to at what temperature TEL decomposes. In general, the amount of decomposition depends on whether the TEL is taken as vapor or as liquid, and whether it is concentrated or diluted, and whether it is exposed to traces or more of air or light or catalytic surfaces, or inhibitors, and finally and above all it depends on the time of contact. Moreover, the rate of decomposition usually is not constant, but increases in time, and there may be a long induction period during which little or no apparent reaction occurs. Roughly speaking, we should not recommend heating concentrated TEL liquid above 100°C., or concentrated vapor above 200°C. for any substantial length of time in the absence of air; we should not heat either liquid or vapor in the presence of air to above 50°C. However, if either the liquid or vapor is greatly diluted (for instance, leaded gasoline), considerably higher temperatures can safely be employed. All this adds up to a rather awkward answer to your question, but is about the size of the situation, and we simply have to try to explain to people why there is no simple definite answer.

"Decontamination of Tetraethyllead

"For chemical laboratory use, I believe we would suggest 5 or 10% bromine in carbon tetrachloride for work on glass, etc., in a hood, with the operator protected by rubber gloves. For general use on spills, especially where strong ventilation is

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lacking, we would use dilute (about 5%) solution of sulfuryl chloride in kerosene, mixing the solution shortly before use; we maintain a pour-spout can of kerosene and a bottle of the chloride ready for use in a rack in the hallway".

I trust this will be helpful information.

Sincerely yours,

Robert A. Kehoe, M. D.

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