

ETHYL CORPORATION

RESEARCH LABORATORIES

1600 WEST EIGHT MILE ROAD

FERNDAL

DETROIT, MICHIGAN

June 17, 1943

Dr. Robert A. Kehoe
University of Cincinnati
Kettering Laboratory of Applied Physiology
Eden Avenue
Cincinnati, Ohio

Dear Dr. Kehoe:

Replying to your letter of June 15 to Dr. Calingaert, who is absent from the laboratory this week, with regard to

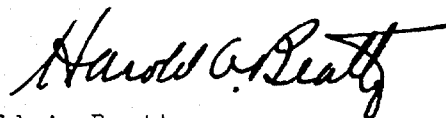
Decomposition of Tetraethyllead.

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 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.

Very sincerely yours,



Harold A. Beatty

B:C

RE 0013745

Men who will handle tetraethyl lead
at Lake Erie Chemical Company.

[REDACTED]
[REDACTED]
[REDACTED]

RE 0013746