

March 5, 1952

Dr. R. E. Eckhardt
Standard Oil Company (New Jersey)
30 Rockefeller Plaza
New York City 20

Dear Doctor Eckhardt:

The enclosed rules were brought to my attention by Miss Fortlage at your request. I take it that you are interested in knowing whether or not I consider them to be necessary and adequate, and I am glad to comment on them.

Generally speaking, the problem of handling leaded gasoline (automobile and aeroplane) in laboratories is not very significant from the aspect of lead absorption. The only routine tests which we have been concerned about in any way are distillations (Engler and other) under circumstances in which they are carried out in large number so as to involve a fairly regular occupation for one or more individuals. The quantity of tetraethyl lead involved in an individual test of this sort is small, and unless a series of exposures of this type continue over a very considerable portion of the day, the loss of TEL to the atmosphere is minute and hygienically insignificant. When this work is substantially continuous there should be ventilatory control of the atmosphere of the laboratory and, therefore, protection of the personnel against steady accumulation of small quantities of TEL daily. The primary reason for this is that the last residue in the flask contains a very large proportion of the lead content of the original sample, and therefore it has a high concentration of lead which is dangerous, except for its small volume, with respect to the differential vaporization and percutaneous absorbability of the TEL.

Contact of the skin with leaded gasoline results in no measurable percutaneous absorption of lead. It has been practically impossible to get this fact through the heads of a large number of people, and indeed I have not tried too hard to do this, since I have no objection to excessive carefulness. Actually some apprehension in this regard leads to more respect for gasoline and for avoidance of contact dermatitis (gasoline) and sensitization (gasoline). The latter is rare but it is an awful nuisance (or worse) when it occurs. Moreover, care against spillage of gasoline is a further safeguard against unnecessary inhalation of the vapors of both gasoline and TEL. There is also the problem of repeated contamination of floors, table tops, etc. with lead-containing compounds and the possibility that some residue of TEL remains as a source of prolonged contamination of the atmosphere of the laboratory. This is not a very serious problem in most laboratories, but it should be avoided by care in the choice of materials for

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floors, table tops, etc., and by excellent housekeeping, as well as by care in the conduct of the day's work.

This covers the situation generally. If there are any specific questions that have come up in the laboratory, do not hesitate to raise them. We can always assist in establishing the facts with reference to the significance of any type of exposure to TEL and we regard it as a part of our normal responsibilities to Ethyl and its customers (not to mention its owners) to do so.

In connection with the handling of more concentrated mixtures of TEL, we have issued fairly elaborate instructions. Just in case you have not seen these, I enclose a copy for such use as it may be to you.

With best regards,

Sincerely yours,

Robert A. Kehoe, M. D.

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