

November 12, 1938

Confidential

Mr. Wm. W. Hartman
Dept. of Synthetic Chemistry
Eastman Kodak Company
Rochester, New York

Dear Mr. Hartman:-

Some time ago various questions were raised concerning the handling of tetraethyl lead as supplied through various avenues by the Ethyl Gasoline Corporation. Dr. Graham Edgar made certain inquiries of you, the results of which he forwarded to me some days ago. In as much as your letter of November 1st addressed to him, expressed an interest in any suggestions for the protection of persons who were called upon to handle tetraethyl lead, I am giving you my own opinions in this connection. Before doing so I wish you to know that I recognize that a number of dangerous chemicals are handled without elaborate precautions so that tetraethyl lead presents no unique problem. On the other hand it is my feeling that it would be an advantage to the community at large if somewhat more adequate precautions were taken in a number of instances. Therefore I would not be able to justify in my own mind the disregard of measures which seem useful in the handling of tetraethyl lead. Perhaps I should also say that I do not presume to instruct you or your people in the handling of matters of this sort in which you have had considerable experience. I am merely giving you my point of view with which you may not agree and which, of course, you are at complete liberty to disregard.

1. I do not regard the warning on your yellow label as entirely adequate since in general chemists will have the point of view that the vapor pressure of tetraethyl lead at ordinary temperatures is so low as to be essentially negligible. In chemical terms the vapor pressure is low but in toxicologic terms it should be recognized that the saturated vapor in air in ordinary temperatures contains approximately 5 mgs. Pb per liter, and that this concentration of lead in the air will produce acute toxic symptoms after comparatively short periods (half an hour or more) of inhalation. Moreover it seems probable to me that persons will inevitably get some of this material on their fingers unless they use appropriate measures in handling it.

Thus one should either advise as to the type of protective glove, or, perhaps more advantageously, one should prescribe a means of cleansing the skin after such contact. With these ideas in mind, I have written out a somewhat more extensive warning for your examination as a basis for any modification of your label which you consider practical and desirable.

2. I must confess to a certain apprehension over the fact (obtained from other sources than yourself) that tetraethyl lead is stored in your storeroom in two quart glass bottles. My information may be incomplete on this point and the precautions which you take may be adequate here, but to me the use of glass bottles presents an opportunity for breakage. Half a gallon of tetraethyl lead is not easily cleaned up and in the process of cleaning it up, someone is certain to be exposed to toxic concentrations of vapor unless gas masks are available and are used during the entire period of disposing of the spill. Obviously the smaller the quantity in the bottle, the less significant will be this hazard. I do not take too seriously the possibility of breakage and the spillage of a few hundred ccs. I should think you might be warranted here in storing the liquid either in a metal container or, if glass is desirable, protecting the glass by some outer shell.

3. The same problem as that in No.2 is presented by the shipping of even small quantities of tetraethyl lead in glass bottles. Here I have no doubt you make use of precautions against breakage of the package. I can only raise the question as to whether every precaution is taken against such breakage in view of the risks associated with the contamination of other materials in transit.

If I can be of any service to you in anyway, or if I have raised any questions in your mind which you would like to refer to me, I should be pleased to have you call on me.

Very truly yours,

RAK:is

Robert A. Kehoe, M.D.

c^oMr. Lewis

KE 0009356

Warning! Volatile Solvent.

Should be handled only by experienced chemists.
Avoid inhalation of vapor by opening and handling
in an adequately ventilated fume hood.

Avoid all skin contact. In case of accidental
splashing or spilling on the skin, wash immediately
with a non-irritating solvent such as kerosene and
then with soap and water. Discard any contaminated
clothing.

KE 0009957