

April 25, 1966

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Dear Doctor Tumlin:

I am glad you wrote to the Kettering Laboratory about the absorption of tetraethyllead out of commercial gasoline, for the reason that the primary work on the problem was carried out so many years ago that the published evidence has been lost to view. So much so, indeed, that one of the news columnists, Dr. Van Dellan, has replied recently to a question on the subject with the most complete misinformation that could be assembled.

I shall send you a photostatic copy of an early reprint of some of the experimental work on animals, which established the fact that tetraethyllead, of itself, is absorbed readily through the skin. It also demonstrates the fact that dilution with gasoline greatly reduces the percutaneous absorption of the lead compound, and to such an extent that at the concentration of one part per thousand, by volume, such absorption, over a long period of time is negligible.

The facts obtained by experiments with animals have been found to be fully applicable to man through years of observation and certain investigations of specific situations in industry. There has been no recorded case of lead poisoning among the thousands of handlers in this country, and in investigations of groups there has been no instance of a measureable degree of absorption. I shall send you reprints of these publications (or photostatic copies thereof if no reprints are available).

The evidence concerning the absorption through abraded skin is also entirely satisfactory, by virtue of the fact that gasoline attacks the skin of both animals and man, producing thereby a severely abraded condition. The continued application of leaded gasoline on such surfaces (for as long as a decent regard for the comfort of the animals would permit) exerted no influence on the absorption of the lead compound.

There is, in fact, nothing whatever in the facts of this matter that would permit one to suppose that the lead compound can be absorbed through the skin out of commercial gasoline. Except that this was clearly the case years ago from experiments with animals (and fully confirmed by human experience,) one could not have justified this technological approach to a better automotive fuel. No one would have dared the introduction of such a fuel into general use, if such a risk had been involved.

Cordially yours,

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Robert A. Kehoe M.D.