RUTHERFORD T. JOHNSTONE, M.D.
BROCKMAN BUILDING
520 WEST SEVENTH STREET
Los Angeles 14, Calif.
MADISON 3-2965

OCCUPATIONAL DISEASES
INDUSTRIAL HEALTH

INDUSTRIAL TOXICOLOGY
PLANT SURVEY

April 19, 1960

Robert Kehoe, M.D.
Kettering Laboratory
University of Cincinnati
Eden St.
Cincinnati, Ohio

Dear Bob:

In order that you will understand what report I am referring to in my letter to John Zapp I am enclosing a Thermofax copy. Are you in agreement with this report? I understand some of our California officials have misconstrued your opinion. Do you feel that the substitution of TML for TEL is apt to be considerable?

In haste,

R. T. Johnstone, M.D.

RTJ/rcm
Enclosure 2

N 6078

By way of illustration the following examples may be cited:

In the case of the central nervous system, TML involved the meninges and choroid plexus to a greater degree than did TEL. There was a consistently greater degree of neuron degeneration in animals exposed to TML than those exposed to TEL. This neuron damage was proportionate to the dose of TML and appeared early after exposure. Again cerebral edema was more prominent in TML exposed animals than in the TEL exposed animals. In the TEL exposed animals, on the contrary, there was more perivascular reaction in the nervous tissue than in the TML animals.

In the case of the spleen, TML caused progressive decrease in lymphoid and megakaryocyte components with an increase in macrophages. This change was not observed in the case of TEL exposed rats.

By contrast, the liver appeared to be affected somewhat more significantly in TEL animals than in the TML animals, thus there was more vacuolar degeneration of cells, more cloudy swelling and more polyploidy in the animals receiving TEL.

With respect to the pancreas, there was significant vacuolar degeneration of the acini in the TEL exposed animals. In some of these animals the process had advanced to a cystic stage. There was also appreciably more degeneration of the beta cells of the pancreatic islets of TEL exposed animals as compared to TML animals.

In the case of the kidney, there was more degeneration of the tubules in TEL exposed animals than in the TML exposed animals. On the other hand the glomeruli showed more ground substance changes in the TML than in TEL exposed animals.

The lungs were particularly affected when these substances were inhaled. There was more injury to blood vessels and capillaries in the lungs of animals exposed to TEL than in those exposed to TML. The bronchioles in the TEL exposed group also showed greater adventitial infiltration than in the TML series. The thymus gland was affected more significantly in TML than in TEL animals. The lymphoid tissue underwent slight hypertrophy in TEL exposed animals, whereas there was atrophy of this tissue.

DISCUSSION

The acute lethal dose of TML has been shown to be greater than that of TEL when the materials were administered orally, by skin absorption and by inhalation (Table II). In addition, comparable doses of the two compounds which produce lethal contact when admin-

KE

[redacted]

Solvent	Eb	7.0	Toluene
Toluene	Undiluted	7.0	23.5

RTJ/rcm

KE

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INDUSTRIAL TOXICOLOGY
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April 19, 1960

John Zapp, M.D.
Haskell Laboratory
Wilmington 98, Delaware

Dear John:

Recently there has come into my hands a copy of the "Haskell Report" on results of animal experimentation with tetramethyl lead. The sender wrote that it is "confidential." However I am lead to believe that a great many people know that this gasoline additive is being considered by petroleum industries.

The point of this letter is this - my book is in press but it is probably not too late to squeez in a note regarding TML. Is there any reason why DuPont would object?

Sincerely yours,

R. T. Johnstone, M.D.

RTJ/rcm

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