

C O P Y

Therman
Liberty Mutual Insurance Co.,
Park Square Building,
Boston, Mass.

January 19, 1929.

Mr. E. M. Walter,
Ethyl Gasoline Corporation,
25 Broadway,
New York City.

Lead Poisoning From Ethyl Gasoline

Dear Mr. Walter:

In discussing the following case with officials of Beacon Oil Co. their suggestion was that we write you personally regarding it.

An employee of one of the oil distributing companies that we insure under a Workmen's Compensation policy (not Beacon Oil), has recently died and a claim is now advanced on the basis of lead poisoning arising out of the employment. The employer runs a wholesale gasoline and oil distributing business, including ethyl gasoline.

██████ was of middle age and worked here for some five years in the loading of gasoline tank trucks at a bulk station with further possible exposure in delivery from the truck to both buried storage tanks and to portable cans. During the past year or two he was thus handling both ethyl and other grades of gasoline. The company does not mix its own ethyl gasoline but buys it in r.r. tank car lots already mixed. All of the work in question is done outdoors.

We have not obtained the entire clinical history of the case as yet but the man had shown approaching sickness for the past three months, was being treated by a doctor (for heart trouble?), was confined to his bed for several weeks, developed some kind of anemia, showed an enlarged spleen, was sent to a hospital and shortly died. At present the only hospital record we have is the cause of death which is given as splenic leukaemia.

Under the Mass. Compensation Law, liability can be readily established not alone for traumatic injuries but also for occupational diseases. Moreover, under the latter especially, the element of aggravation is recognised as a basis of liability. Thus, if it can be shown that the exposure arising out of the employment materially accelerates or aggravates any sickness that itself is of non-industrial origin, the employer through his insurance carried becomes liable for compensation or death benefit payments if disability or death results. The present case is of this type.

The claim of lead poisoning in this case presents nothing particularly new as a general proposition but we may need something more specific than a general proposition but we may need something more specific than a general denial to combat it. We cannot deny that the man was at times exposed to the fumes given off by ethyl gasoline. The absence of harm from such exposure that many others may have experienced is useful but not conclusive evidence because the state of health of this individual may have made him unusually susceptible.

Could you figure out for us some quantitative measure of what the amount of exposure

Mr. L. H. Walter

- 2 -

January 19, 1929.

to lead actually was, based, of course, on assumed but liberal data of the volume of vapor inhaled? We could take so many hours per day, so much concentration of vapors in the air and a certain percentage of lead in milligrams per litre of ethyl gasoline vapor. This quantitative statement could then be used by a toxicologist as a basis of opinion as to causal relation, if any, between the employment and the sickness.

Can you advise us further as to whether or not there is any difference in the toxic effects, for the same amount of lead absorption, between the form of lead oxides, carbonate, hydrate, etc. The physical form of the lead compounds is ordinarily the dust of a solid and the normal toxic effects are well known. How much, if at all, does this gaseous (?) form of the ethyl compound differ in its specific toxicity?

The cases that developed in the original manufacture of the ethyl lead were apparently peculiar in symptomology; mental derangement etc. However, this type of symptom may have been the same as the long recognized lead encephalopathy that sometimes but rarely develops from exposure to the ordinary forms of lead in industry. The point is whether or not the difference in symptoms is due merely to differences in the rate of absorption by the body or whether lead tetraethyl has a specific toxicity of its own.

If you can give us any information or refer us to any literature on this question, we shall appreciate receiving it from you. I do not know just how far this claim will be pressed but we wish, of course, to be as well prepared to meet it as possible.

Very truly yours,

S. E. Whiting,
Assistant Chief Engineer.

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