

Dr. Alvaro Camel/er
Std. Oil Co. of Brazil, Caixa Post
539, Belem, Brazil

February 18, 1942.

AIR MAIL

Dr. Alvaro Camelzer,
Standard Oil Company of Brazil,
Caixa Postal 539,
Belem, Brazil.

Dear Dr. Camelzer:

I have just received word from Mr. Rizzo-Gill, of Associated Ethyl Company, Limited, that you are interested in having rather full information on the hazards associated with the handling of Ethyl Fluid at plants engaged in mixing leaded gasoline. Accordingly, I am sending you under separate cover a series of articles which have been published in American medical journals and translated into Spanish, which I think will give you most, if not all, the required information. Among these is a memorandum to medical men who will be engaged as consultants of Ethyl Export Limited, for handling this work. I also send a copy of the regulations which apply to the operation of mixing plants and which give instructions and precautions to men who are engaged in this type of work. If you would prefer to have these instructions and certain of the other articles in English rather than in Spanish, please let me know and I shall forward them to you. I think you will find that the memorandum mentioned above will present our general point of view concerning the handling of this problem, and that it gives certain general policies which have been adopted by Associated Ethyl Company, Limited.

It might be well if I were to make some additional comments on the general problem. First, let me say that experience has shown that the equipment employed in mixing Ethyl Fluid with gasoline, together with the regulations issued for the operation of the equipment will handle the situation adequately. If the equipment is kept in good condition and operated properly, and if the men follow the precautions advised, there will be no cases of poisoning, and, in fact, there will be no opportunity for lead absorption at all. It is of the utmost importance, therefore, that the medical supervision be directed primarily to the maintenance of proper operations and proper precautions. The plant equipment should be kept in perfect condition. It should be inspected periodically by a doctor so that the plant itself, the clothing, the masks, and every item of equipment will be kept in order. Moreover, the medical examination should be carried out in such a way as to keep the men aware of the danger of their work, and at the same time, to assure them that they are entirely safe, if they do as they are instructed. We

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use the medical examinations for the purpose of detecting the slightest evidence of lead absorption on the one hand, or a careless or unduly apprehensive state of mind on the other. Speaking of evidences of lead absorption, let me issue a warning concerning the interpretation of microscopic blood findings. One or two articles have been published in medical journals in South America, concerning the study of men engaged in mixing operations and in the handling of leaded gasoline. On the basis of fine stippled erythrocytes in blood, the statement has been made that a number of these men have shown evidences of lead absorption. It has also been said, and irresponsibly, I believe, that the men did not always follow the instructions for the avoidance of lead exposure. I shall not cite these articles at the moment, since I doubt if they will interest you, but I wish to make point of the fact that basophilic granulation of the erythrocytes is found frequently in normal persons and is also seen in a variety of cases that have nothing to do with lead absorption. It is necessary, therefore, to be cautious in the interpretation of these microscopic findings.

There is one additional matter to which I should call your attention; namely, the dangers associated with the cleaning of tanks used for the storage of leaded gasoline. The dangers here are very real. We have made a very elaborate study of this problem, which I can not go into in detail in this letter, but under certain circumstances, which are not predictable, considerable quantities of decomposition products of tetraethyl lead, together with small quantities of tetraethyl lead itself, accumulate under the water layer in the bottom of these tanks. The men engaged in the cleaning are exposed to these materials, and, therefore, they must have adequate protection at all times. Instructions have been given in the book of regulations for carrying out this work, and if these are scrupulously followed, there will be no difficulty. If they are neglected, a cute, and perhaps, fatal cases of poisoning will occur.

I should be pleased, indeed, if you would keep in touch with me, and if you would let me know of any difficulties or questions which arise in connection with your work. I shall be glad to make available to you any and all of the information we have. I hope I may sometime have an opportunity to visit you, to see the plant and to talk with you concerning any problems that may arise. I fear this will not be soon, but in the mean time, I shall be glad to give you every possible assistance.

Cordially yours,

Robert A. Kehoe, M. D.

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