

April 28, 1945

AIR MAIL

Mr. C. L. Risso-Gill,  
Associated Ethyl Company Limited,  
Avda. Pte. Roque Saenz Pena, 710,  
Buenos Aires, Argentina.

Dear Charlie:

In reply to your cables of April 18 and 25, I am sending you herewith a memorandum which I prepared only a short time ago for use in the United States of America in connection with possible State legislation or State Board of Health regulations. The memorandum is rather extensive and goes beyond your requirements, as indicated in your second cable. However, it contains the necessary information for the guidance of yourself and Dr. Pavlovsky, and I am sure that it should be satisfactory if the problem is approached by the Government authorities on a realistic basis. Undoubtedly detailed analytical methods will be necessary to carry out the requirements as outlined, and I shall be prepared to supply such methods if and when they are needed. For the present, however, it would seem unnecessary to do this. Let me warn you that regulations concerned merely with the details of medical examinations and medical supervision will not be adequate to provide reasonably safe working conditions for the men. It is necessary to insist upon this, and in my opinion, you and Dr. Pavlovsky should insist upon it in discussing the matter with Government representatives. Preventive measures as indicated in the first sentence of the memorandum are based fundamentally on the nature of the buildings and their equipment. Unless these matters are handled properly and carefully and on the basis of past experience, serious trouble is certain to occur. I can say this with emphasis, since to my direct knowledge serious trouble has occurred everywhere when new plants have been built without regard to the principles stated in this memorandum. The medical supervision of itself will not prevent serious difficulty, for actually the lead exposure associated with the handling and manufacture of tetraethyl lead can be of such severity as to result fatally after a few minutes or at most a few hours of exposure. Accordingly, the mere prevention of slow accumulation while acutely essential will not be sufficient. You will have to remember that people with whom you are dealing know nothing about this problem and will have to be told from scratch. Moreover, no one has ever believed us in the past, so that you will be up against serious difficulties. Therefore, I suggest that you do everything in your power that there is a realistic appreciation of what is necessary in the way of suitable buildings, equipment, ventilation, training, and the like. Unless these things are cared for properly, and unless they are compelled by Governmental action the construc-

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tion and operation of a plant will end in disaster, thereby giving this industry another black eye.

I have outlined the general medical methods, and in the course of so doing have referred to blood examinations. I want to emphasize the fact that such examinations will be of no value whatsoever in connection with exposure to tetraethyl lead. They will be useful, however, in the case of those men whose work brings them into exposure with metallic lead and inorganic lead compounds. Actually the absorption of tetraethyl lead gives rise to a totally different set of symptoms, physical signs and laboratory findings from those associated with the absorption of inorganic lead compounds. Therefore, no stippling is seen, and insofar as absorption of tetraethyl lead is concerned there will be no chronic lead poisoning as we know it clinically. Therefore, the doctors will have to be prepared for the recognition of a totally different syndrome of intoxication. For this reason the regulations should not put stress upon blood examinations as a means of recognizing lead exposure. On the other hand, I am quite sure that no one will be able to operate a tetraethyl lead manufacturing plant without careful measurements of the magnitude of the lead exposure either by means of comprehensive and frequently repeated air analyses or by a well regulated system of following the exposed personnel by means of analysis of their urine and blood, the urine and feces, or all of these materials. There is no question about the relative importance of following the lead absorption and excretion of the workmen as a control measure. From the medical point of view it is the most important single feature.

I think I should point out to you at this time that the plant which is operating in Great Britain has done so without a single case of illness. This was made possible because our instructions were followed implicitly and in the minutest detail. There is nothing excessive or foolish in the control measures. However, I should point out to you that several other plants have been operated with disastrous results because the builders and operators of the plant thought they could get away with simpler and cheaper equipment and methods. If a plant is to be built in the Argentine, it can be done properly and safely if our advice is followed. If our advice is not followed, I am sure on the basis of previous experience that there will be serious difficulties and that everybody will be sorry.

You are already familiar with the necessary regimen of precautions in relation to transportation and mixing operations. All of the regulations are in your hands and all of these regulations in their essential elements and in their simplified form should constitute the body of governmental regulations. I say this not because these are the regulations of Associated Ethyl Company but rather because they are the product of some twenty years of careful study and

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actual experience with these problems. They will not be improved upon by amateurs, and it is fair to say that if the Government committees attempt to improve upon them and to make them complicated, they will be being foolish. I sincerely hope for the benefit of the people of Argentina as well as for the good name of this industry that you can get our recommendations into effect.

I do not know how to give any better advice to you or to Dr. Pavlovsky than to study this memorandum with care and to draw on your own experience and knowledge in relation to the other aspects of the problem, with which you are already familiar.

Sincerely yours,

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Robert A. Kehoe, M. D.

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