

October 13, 1961

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AIR MAIL

Dr. J. G. Hughes
Scientific Officer
Division of Occupational Health
86 - 88 George Street North
Sydney, Australia

Dear Doctor Hughes:

I am pleased to send you the information requested in your letter of October 6th. One of my associates, Mr. Lawrence Schafer may wish to make a more detailed drawing of the equipment than any that is available at present, and if so this letter will be delayed until it is ready. If we have a drawing that will serve your purposes I'll get it off to you promptly with such comments as may be needed to explain it. It is not a difficult problem.

With respect to the precautions involved in the handling of tetraethyllead you should have no difficulty. You will be (or should be) dealing with only small quantities, and such small quantities present no very great hazard to technically trained persons. The principal problem in a research laboratory is that of limiting the possibility of exposure to those who must, in the nature of the work, handle the compound. In this connection, the custody of the chemical, and the manner of storing it is important. It should be kept, in small quantity, by those who use it, under conditions which will not allow the liquid or the vapor to contaminate adjacent materials. A metal container or, if preferable, a glass container within a metal container, will protect against breakage and spillage. When a container is opened for any reason, it should be handled within a well ventilated hood to prevent respiratory exposure, and constant care should be exercised to avoid contact of the material with the skin.

I presume you would obtain the tetraethyllead from The Associated Octel Company (until recently, The Associated Ethyl Company). If so you will be supplied with full instructions for the handling of the compound in a laboratory. These are not complex, but common sense instructions. The idea has gained credence in some circles that tetraethyllead is an exquisitely toxic compound. It is not as highly toxic as many other chemicals, but a modest degree of absorption may result in the accumulation of degradation products in the body. Therefore, it is a subtle and treacherous material. For this reason, somewhat elaborate procedures have been applied within the industries involved in order to protect persons whose occupational exposure continues over prolonged periods of time, since otherwise their familiarity with the compound would breed carelessness and result inevitably in casualties. The thoroughness of these precautionary measures and of the supervision that has maintained them persistently through the decades has been almost unique

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Dr. J. G. Hughes

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and has conveyed the belief that this must, indeed, be an unusually dangerous material. All that is required is to avoid the inhalation of the vapor, and to avoid contact of the skin with the liquid. This can be done completely, and this is the purpose of the precautions. The technical man has no difficulty in doing this. His only need is to recognize that it is necessary. When, however, he leaves the cleaning up of a contaminated laboratory to a janitor, or leaves contaminated equipment and glassware to a wash boy, he is being negligent. The role of the elaborate instructions for the conduct of the day's work, whether in the manufacturing plant or in the research laboratory, is that of preventing such negligence.

If there is any failure to obtain full information as to the precautions, please do not hesitate to let me know.

Cordially yours,

Robert A. Kehoe, M. D.

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Enclosure

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Professor R.A. Kehoe, M.D.,
Kettering Laboratory,
University of Cincinnati School
CINCINNATI, OHIO. U.S.A.

Dear Professor Kehoe,

On returning from
your laboratory, Dr. Bell discus
for producing finely divided
We have also read with great int
entitled "Responses

When you gave a general account of your experiments, we are con-
sidering the practicality of our using a method similar to yours for
providing atmospheres containing controlled amounts of lead fume
for the purpose of testing respirators against this industrial
hazard and wondered whether you would assist us. Could you give us
some details of the apparatus you use to meter the tetraethyl lead,
the arrangement of the burner equipment, and any precautions you
have found necessary in handling tetra-ethyl lead?

Any help which you could give us in this direction
ted.

Yours faithfully,

J.G. Hughes
J.G. HUGHES,
Scientific Officer,
Division of Occupational Health.

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sequence*

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Professor R.A. Kehoe, M.D.,
Kettering Laboratory,
University of Cincinnati School of Medicine,
CINCINNATI, OHIO. U.S.A.

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SENDER'S NAME AND ADDRESS

Mr. J.G. Hughes,
Scientific Officer,
Division of Occupational Health,
86-88 George Street North,
SYDNEY. AUSTRALIA.

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MUST BEAR POSTAGE AT THE RATE FOR AIR MAIL LETTERS.

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