

April 20, 1970

Dr. Luigi Parmeggiani, Chief
Occupational Safety and Health Branch
Bureau International Du Travail
International Labour Office
CH 1211 Geneve 22 Switzerland

Ref. PS 10-2 (Jack. 15)

Dear Doctor Parmeggiani:

I was in no sense surprised to receive your letter of April 16th and your suggestion with reference to the TLV of 0.075 mg./M³. I can indeed disclaim all responsibility for the recommendation made by ACGIH. This, however, does not serve the purpose which I have in mind. The standard still stands as a matter of record, and by rejecting it, I merely put myself in the capacity of an objector without having the means of making clear the basis of my objection. As it happens, I am the responsible investigator, having established the conditions out of which a conclusion has been reached erroneously. I set the standard of performance for the technical people in achieving the role which was allotted to them. This role has been unchanged over the years, but it has never had anything to do with the performance of the workmen in avoiding excessive exposure. Whenever the conditions under which men worked were potentially dangerous (in connection with specific places in the plant and specific operations as defined by management), the workmen were trained to make immediate use of airline respirators. Thus, they were never asked or permitted to exercise their own judgment in this regard. As a consequence, no group of men has ever been subjected to prolonged exposure to air containing 0.075 mg. of lead as tetraethyl or tetramethyllead. It is truly nonsense to set this figure as the TLV. I don't know, nor does anyone else, whether it is or is not the correct figure. The mistake made in this instance was that of taking a figure which was intended for one purpose, and assuming that it was meant to be the TLV. Actually, this figure was intended to be the maximum value indicative of the need for caution in dealing with a problem of leakage. The tests were carried out not where men were working continuously or frequently, but where the opportunity for leakage from operating equipment was present and required attention.

All of this arose some time after I had relinquished responsibility for the maintenance of appropriate conditions, and before this responsibility had been properly delegated to someone else. You will better understand this, I believe, when I tell you that we had been free of real difficulties for so long that it came to be assumed that this state would continue. We had two standards, one for the management of the plant, and one for the medical people. The medical criterion was not based at all on a TLV, but rather on the results of the analysis of the urine of each individual (and, of course, the collective pattern provided by groups of men). The technical criterion, on the other hand, was not a TLV, but the levels of concentration of tetraethyllead or tetramethyllead at various points of stress, which would indicate that leakage from equipment was occurring to a greater extent than was desirable.

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Dr. Luigi Parmeggiani

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When I found out about this, I hit the ceiling, but by this time, the level of concentration had been promulgated (by mistake) as a TLV. I attempted to have this removed from the records of ACGIH, but I encountered a reluctance to admit the mistake. I was unable to convince the entire Committee, which I was never able to assemble at one time and place. Now that it seems that this false standard is to become significant internationally, I am prepared to create all of the disturbance which may be necessary to get this standard out of circulation.

Meanwhile, I beg of you not to be so readily beguiled into the perpetuation of an error. It does no good whatever to pass the buck by making the kind of statement which you suggest. I shall continue to be responsible, and so shall you, for whatever may happen to people who unknowingly act on the misinformation supplied to them by your publication. I hope to have the action of Doctor Stokinger's Committee of ACGIH rescinded, but it takes time to correct an error of this sort once it has been made. This is one of the serious difficulties which is created by a bureaucracy. There is no one who is in position to correct the action of a Committee until it meets and corrects its own errors.

I'm sorry to create this issue in your office, but it is, most unfortunately, the result of my having withdrawn, or of having it believed that I have withdrawn, from direct action because of retirement. I hope you can see fit to comply with my request. I don't care one bit what you do or say about the Russian pronouncement, but I object seriously to the American statement.

Sincerely yours,

Robert A. Kehoe, M.D.
Professor Emeritus of
Occupational Medicine

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Réf. n° PS 10-2 (Jack. 15)

Professor R. A. Kehoe,
Department of Environmental
Health,
Kettering Laboratory,
College of Medicine,
University of Cincinnati,
CINCINNATI

Ohio 45219 (U.S.A.)

16 AVR. 1970

Dear Professor Kehoe,

Thank you for your kind letter of 9th March concerning the edited version of your article on Lead Alkyl Compounds. I am glad that you find it satisfactory and appreciate, very much, your patience in revising it carefully.

The most important point concerns TLV. In all Encyclopaedia articles dealing with toxic substances we include the figures of ACGIH TLV's and MAC's of USSR Public Health Authorities together with the basic physicochemical data. This information is provided by the editor to ensure homogeneity of presentation and sources. This is to be stated in the preface and we shall add that this data does not involve the responsibility of the author. If you feel unhappy about the present 0.075 mg/m^3 TLV, would you like the following additional statement to be included:

"The American Conference of Governmental Industrial Hygienists has recommended a TLV of 0.075 mg/m^3 for both tetraethyl and tetramethyl lead, however, the author considers these figures too high."

Such a statement could perhaps satisfy you and avoid that for these very dangerous substances we omit the indicative data which we give for substances other than lead alkyl compounds.

/Cont.....

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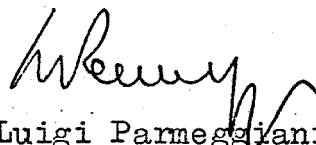
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All the other points revised in your letter have been dealt with as you indicate, including your list of references. I would, therefore, suggest that there is no need for you to contact me again on this subject if you agree with the proposed sentence concerning TLV's but, if you are not satisfied with this, please let me know of any alternative solution you may have in mind. If, on the other hand, you think that the sentence is not needed because of the general presentation of TLV's and MAC's in the preface, please also let me know.

With kindest regards.

Yours sincerely,
For the Director-General:



Dr. Luigi Parmeggiani
Chief,
Occupational Safety and
Health Branch
Conditions of Work and Life
Department

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March 9, 1970

Dr. Luigi Parmeggiani, Chief
Occupational Safety and Health Branch
International Labour Office
CH 1211 Geneve 22, Switzerland

Ref. No. PS 10-2

Dear Parmeggiani:

I have gone over the paper on "Lead Alkyl Compounds" as finalized for publication, and I find it highly satisfactory in the main. I have a few suggestions to offer, however, for the purpose of eliminating misunderstandings which seem (to me) likely to occur. I shall indicate these below and give my reasons for them, for such action on your part as may seem to you to be desirable. There will be no need, however, almost needless to say, for you to consult me further.

1. My most important suggestion, in terms of real safety, is that reference to the TLV or the MAC for either of the compounds be eliminated. There is no proper justification for either of these. I have attempted to persuade ACGIH to eliminate these compounds from their list not because the 0.075 mg./M^3 is too low, but because I believe it to be too high. I shall not engage in a discussion of how this came about, but it was done, mistakenly, without my knowledge or consent and it cannot be documented. If the numbers are eliminated, no criticism can properly be made of you or of ILO, but I simply will not take the responsibility of having these numbers associated with my name. I have relied for many years on a regimen in the petroleum industry (mixing plants) of eliminating all exposure and all opportunity for exposure to these compounds. Nothing else will serve the purpose of hygiene, for if it is accepted that there is a TLV, one can be sure that the efforts to prevent exposure will be relaxed. I am not speaking here of formalities and conventions and "official regulations." I am concerned for the actual safety of individual men.

2. On page 3, complete paragraph in middle of page, line 6, is a symbol, for the sake of brevity, which I distrust, for it will be interpreted by many readers as a percentage sign. I would prefer that the term "part per 1000 parts" be restored. The difference is highly important.

3. In the paragraph below on this same page (3), line 4, I would eliminate the comma after "hydrocarbons."

4. As a matter of purely personal choice, I would change the word "worker" to "personnel," on page 6, first complete paragraph, line 6. I dislike the word "workers" and I never use it, because it tends to exclude, technical men, supervisors, research personnel and all others above the level of unskilled to moderately skilled workmen, whereas in modern industry, we are dealing with all levels of the industrial organization. You may regard this as a parochial attitude, but I believe it is a valid and practical matter.

Dr. Luigi Parmeggiani

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5. The reference to the Harben Lectures is not especially useful in this relationship since they purposely deal with inorganic lead rather than the alkyl compounds. The best and most useful article for reference purposes would be the description of tetraethyllead poisoning by Machle. It is much the best description of the full blown case of tetraethyllead poisoning to be found in the literature. My article describing milder cases is not nearly as useful. A later article by Kitzmiller is useful, especially in dealing with the analytical findings. My secretary will cite these references when she types this letter (I am working in San Francisco at present, and so have no access to my library). You can use them or ignore them as you wish.

6. The other article listed in your two references is of use only in indicating, on the basis of animal experimentation, that tetramethyllead may be expected to resemble tetraethyllead very closely in its clinical manifestations. Since we have never seen an unmixed case of tetramethyl poisoning in man, this is the best evidence available to us on this point.

Sincerely,

Robert A. Kehoe, M.D.
Professor Emeritus of
Occupational Medicine

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Dictated but not read

Machle, Willard F.: Tetra-ethyl Lead Intoxication and Poisoning by Related Compounds of Lead. Journal of the American Medical Association 105:578-85 (August 24), 1935.

Kehoe, Robert A.: Tetra-ethyl Lead Poisoning: Clinical Analysis of a Series of Nonfatal Cases. Journal of the American Medical Association 85:108-10 (July 11), 1925.

Kitzmilller, Karl V., Cholak, Jacob, and Kehoe, Robert A.: Treatment of Organic Lead (Tetraethyl) Intoxication with Edathamil Calcium-Disodium. A.M.A. Archives of Industrial Hygiene and Occupational Medicine 10: 312-18 (October), 1954.

Kehoe, Robert A.: The Harben Lectures, 1960. The Metabolism of Lead in Man in Health and Disease. Journal of the Royal Institute of Public Health and Hygiene 24:81-97 (April); 101-20 (May), 129-43 (June); 177-203 (August), 1961.

Springman, Frank, Bingham, Eula, and Stemmer, Klaus L.: The Acute Effects of Lead Alkyls. Oral Administration of Tetramethyllead, Tetraethyllead, Trimethyllead Chloride, Triethyllead Chloride, and Diethyllead Dichloride to Rats. Archives of Environmental Health 6:469-72 (April), 1963.