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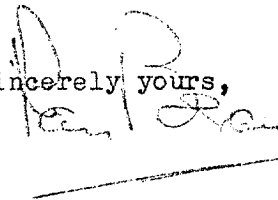
Dr. R. A. Kehoe,
(Dept. of Physiology),
College of Medicine,
University of Cincinnati,
Cincinnati,
Ohio, U.S.A.

20th July, 1937.

Dear Dr. Kehoe,

I am enclosing with this letter a long screed from Dr. Padureanu, our medical consultant in Roumania and would appreciate it a great deal if you would be kind enough to reply to him direct.

Sincerely yours,



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ADRESA TELEGRAFICĂ
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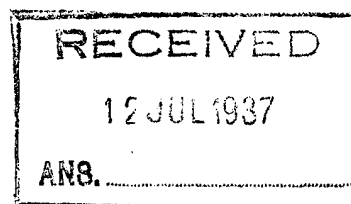
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Subject: Use of Ethyl in benzine

Ploesti, Roumania

7th. July 1937

Ethyl Export Corporation,
Thames House,
Millbank,
London. S.W.1.



Gentlemen,

I wish to bring to your attention that in a Bucarest publication called "Securitas", in the February 1937 number, appeared an article by Major Doctor Od. Apostol, Head Doctor of the aviation unit in Cluj, under the title of "Harmful effect of Ethyl benzine upon mankind". In this article he declares that for approximately one year he has absolutely observed that all aeroplane mechanics and their assistants who have not respected hygienic regulations wholly, and some even that have done so, as also some pilots and other of his personnel, when flying in cloudy weather, showed the following symptoms of lead poisoning:-

- 1) Headache, localized more at the back of the head, especially after a long flight and at great height;
- 2) Sickness;
- 3) Stomach pains, in some cases accompanied by diarrhoea;
- 4) Inflammation of the gums, the latter having a greyish hue;
- 5) Modification in composition of blood;
- 6) On the spot where a drop of Ethyl benzine fell was felt an irritation, and a redness appeared according to the size of the drop, then followed a blister and after several days a sore which was hard to cure in 15 to 20 days. This was observed on the hands, forearms and back of the head (where some have an habit of scratching).

On the other hand an Engineer Jean Pontramol^P in a French leaflet entitled "La detonation et quelques problèmes" published in 1934, states that after using 100,000 liters of Ethyl benzine he has not observed anything serious with the men who had handled it, which fact Major Apostol does not believe.

Another article appeared in May 1937, signed by Mr.M. Petrescu-Bain

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entitled "Motoarele & Supercarburanții", which concludes that "from a safety point of view, when the antiknock agent used is tetraethyl of lead, health cannot be endangered if we are careful in the handling. It is true that tetraethyl of lead is a very poisonous substance, which introduced in the organism together with benzine vapours or exhaust gas, absorbed through various causes, cause dangerous poisoning, therefore be careful with Ethyl benzine." He adds:- "With a little prudence you can avoid this single drawback of Ethyl benzine in view of the numerous qualities".

Personally, as Consultant Doctor of the Ethyl Export Corporation since the year 1934 at Romano-Americana Refinery, Teleajen, and the Astra Romana and Unirea Refineries in Ploesti, with the occasions of quarterly examinations of the personnel employed at Ethyl mixing plants, I have found to date that there has not been one case with the symptoms of lead poisoning, well understood, of course, that they respect the rules and regulations for handling and mixing Ethyl fluid as also the regulations for cleaning storage tanks used for gasoline that contains Ethyl fluid.

From the works of the Ketterling Laboratory of Applied Physiology in the College of Medicine of the University of Cincinnati, articles which have been sent me by Doctor Robert A. Kehoe, the following conclusions are drawn:-

- 1) There is no reason to fear the existence of danger to the public health from the distribution and use of leaded gasoline;
- 2) Experimental evidence has indicated that the hazards of lead absorption from skin contact and inhalation of vapour from gasoline containing tetraethyl lead were practically negligible;
- 3) The lead exposure associated with the handling and dispensing of gasoline containing tetraethyl lead at service stations is negligible;
- 4) The lead exposure arising from prolonged employment in the care and repair of automobiles using leaded gasoline for fuel may be sufficient to cause slight increase in the mean rate of urinary lead excretion, shown either in a greater lead output per unit time or in higher lead concentration. No increase in the fecal lead excretion has been demonstrated;
- 5) There is no reason to believe that the usual type of automobile service and repair work involves danger from lead absorption;
- 6) Because of the number and variety of opportunities for slight exposure to lead in the garage mechanic's occupation, the proportion of total lead exposure deriving from leaded gasoline and its combustion products is conjectural.

Although Ethyl benzine for aeroplanes is more concentrated,

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in that it contains a larger quantity of tetraethyl lead, nevertheless the lead hazard does not appear to be dangerous. In this connection it is to be noted that Major Apostol does not mention the concentration of Ethyl in the benzine, but as far as the Romano-Americana is concerned it is not supplied with a concentration of more than 3 ccs. per gallon.

From information gathered at Teleajen Refinery I found that some of the men in the laboratory when controlling the Ethyl benzine for aviation sometimes had small quantities drop on their hands, but all of them declared that it had not caused them the slightest harm. Furthermore, the following case which was related to me by a workman at a refinery with a mixing plant in Ploegti, which goes to prove that Ethyl benzine, for aeroplanes even, when coming in contact with the skin is not harmful: The workman S.D. mounted the steps of a tankcar loaded with Ethyl benzine for aviation to establish how much was in the car, when an assistant started up the pump, the car being too full flowed over and wet the whole body of the workman. He went immediately and had a bath and did not feel any irritation of his skin or any other symptom.

Inasmuch as the literature in regard to tetraethyl lead that I have received from Dr. Kehoe does not contain the studies made with Ethyl benzine for aviation, I shall be greatly obliged if you have such information to receive a copy.

Yours very truly,



Dr. I. Padureanu

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