

HF:DOB.

3rd August, 1939.

Deutsch Amerikanische Petroleum Gesellschaft,
Neuer Jungfernstieg 21,
HAMBURG, 36.

Dear Sirs,

This will acknowledge receipt of your letter of the 27th July regarding the various points which arose during the technical meeting in Paris. You have raised several questions which we would like to refer to our Medical Department for their definite opinion, but we are offering some comments on the other items which may be of assistance to you:

1. This matter must be referred to our Medical Department as we have no precedent under which we could pass a definite opinion.
2. We can state definitely that leaded gasoline has no deleterious effect whatsoever on all the normal materials which are used for pipe lines and valves. These can either be bronze, cast iron or steel, as desired, and in fact these materials can also be employed when handling the concentrated Fluid.

With regard to gaskets, again no difference is required over the standard materials established for gasoline service. In the case of lines carrying concentrated Fluid, care should be taken that gasket materials containing rubber are not employed, but such materials as "Klingerite" or graphite-impregnated asbestos are quite suitable. Any screwed joints should, of course, be welded, but where this is not possible, then a jointing compound comprising litharge (lead oxide) and glycerine should be used.

3. This aspect has been dealt with in considerable detail in a publication entitled "Memorandum on Handling of Gasoline containing Tetraethyl Lead" by Dr. R.A. Kehoe, - copies of this memorandum in the German language may be obtained from Ethyl G.M.B.H. The conclusions of this are to the effect that there

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is no more danger in handling leaded gasoline other than those hazards which are normally associated with ordinary clear gasoline. It is therefore unnecessary to provide any protective clothing for workmen who regularly come into contact with leaded gasoline while filling drums, etc.

4. The general measures to be adopted when repairing storage tanks which have contained leaded gasoline are fully covered in Section V. of the Regulations for Mixing and Handling Ethyl Fluid. The latest version of these are those dated 1st December 1938, but the German version, which is identical, as issued by Ethyl G.m.b.H., is dated 1st April 1939.

During the heating of the plates of the tank in the welding process, it is quite obvious that any scale adhering to the surface would volatilise and introduce an additional hazard. It must, of course, be fully established that no man can enter a leaded gasoline storage tank without adopting the full protective measures which are outlined in these regulations. If the tank has been thoroughly cleaned, it should be possible for repair men to enter and carry on their work without the necessity of wearing fresh air line gas masks. The whole essence of this sentence is the fact that the tank has been thoroughly cleaned, - that is that all sludge has been satisfactorily removed from the floor of the tank and all scale and dust removed from the walls. In this connection it must be remembered that dust might easily collect on the ledges of the plates and during any hammering operations be dislodged and thus give rise to dust hazard. Even after thorough cleaning it is therefore strongly recommended that any repair work be carried out whilst the walls are in a wet state and that very great care be taken to clean the plates in the vicinity of the repair right down to the bright metal.

5. We propose to collect and correlate experience with companies in various parts of the world on the preference between the use of black iron drums and galvanised drums for the distribution of leaded gasoline. This question is raised with us frequently with a request for a definite opinion. As far as we can see, the total amount of trouble which is experienced is extremely slight. One large oil company uses exclusively black iron drums and experiences no complaints, and on the other hand equally favourable reports are received when galvanised barrels are used exclusively. In all cases where trouble has been reported to us either from the formation of a white deposit or discolouration, and where it has been investigated, it has been found that the single contributing factor has been water. It is the general conclusion that water is the main cause of the trouble, frequently coupled with imperfect galvanising. If a patch of iron is showing through the galvanising when water is present, an electrolytic action must occur through the solubility of a certain amount of bromine in the water. Our own recommendation would be for the use of galvanised barrels, after having made certain that the galvanising is in good condition, and that care has been exercised to preclude the presence of water.

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As soon as we have collected the data to which we have referred, we will get into touch with you again and place this information before you.

Will you kindly note that any decisions you may wish to make on items Nos. 1, 3 and 4 should wait until they have been dealt with by our Medical Consultant.

Yours very truly,

H. ROBERT.

Enclosure: Regulations on Handling and Mixing of
Ethyl Fluid, in German.

RE 0015340

C O P Y

Deutsch Amerikanische Petroleum Gesellschaft.

Neuer Jungfornstieg 21,

Hamburg 36.

27th July, 1939.

The Associated Ethyl Co. Ltd.,
The Adelphi, W.C.2.

For the attention of Mr. Fossett.

Dear Sirs,

Third Technical Meeting, - Handling of
Ethylyzed Gasoline.

Further in connection with Topic 37 of the programme of the Meeting a discussion took also place regarding the influence of ethylized gasoline on gasket material and metals as well as regarding the precautions to be observed on the transport and with the handling of ethylized gasoline.

As agreed we are advising you with the following the points on which we would request your comments:-

1. Alternative Use of Containers (Drums, Cans, Barrels, Tank trucks, Railroad Tankcars) for Ethylized Gasoline and Special Gasoline.

According to the opinion of German physicians it is not feasible to transport special gasoline in tankers, railroad tankcars, tanktrucks, containers and cans if they have been used on the preceding trip for ethylized gasoline. In the opinion of these gentlemen the moisture on the walls of the containers, after they have been emptied, together with the anorganic lead combinations split off the ethylized gasoline, would suffice to make the special gasoline unfit for medical purposes. The size of the container would be immaterial in this connection.

In gasoline destined for dye works or chemical factories a minimal contents of ethylized gasoline would, according to the opinion of the German medical people, have the effect that vapours of ethyl fluid would escape into the atmosphere during a redestillation at 70° Celsius and more, endangering the personnel of these factories.

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2. Effect of Ethylized Gasoline on Gasket Materials and Metals.

We repeatedly received reports on leakages in pipe connections and on corrosions on metal parts, f.i. red bronze having been found after the introduction of ethylized gasoline. Allegedly this is not to have been the case previously with the handling of pure gasoline, respectively gasoline alcohol mixtures. Although we cannot imagine that ethylized gasoline should effect gasket materials, that is cardboard, Klingerit, etc., as well as metals (red bronze, brass, aluminium), to a larger extent than pure gasoline, we should appreciate if you would advise us regarding the experiences which have been made in other countries in this respect.

3. Protection of the Mechanic as well as of the Station Personnel against the Effect of Ethylized Gasoline.

After the use of ethylized gasoline has been prohibited for washing purposes of any kind, our mechanics and the station personnel have raised the question whether the persons should be equipped with protective clothes, who repeatedly and regularly come in immediate contact with ethylized gasoline while filling drums, or taking samples from drums, or tankcars, or while repairing pumps or pipe lines.

4. Protection Measures for the Execution of Welding Jobs.

According to local experts lead vapours arise during repair work in the interior of containers or tanks which contained ethylized gasoline, against which the personnel carrying out the repair work or the welding job should be protected with special clothes or gas masks.

5. Effect of Ethylized Gasoline on Drums made from either Black Sheets or Galvanized Iron Sheets.

According to the opinion of local experts anorganic lead combinations are split off the ethylized gasoline which form further combinations with the surface of the tanks, drums, etc. This refers particularly to the mutual effect between ethylized gasoline on the one hand and black iron sheets, galvanized iron sheets, and chromatised iron sheets on the other.

What experiences have been made in this respect in other countries?

Thanking you in advance for your trouble taken in this matter,

Yours very truly,