

April 30, 1929

Mr. E. W. Webb,
Ethyl Gasoline Corp.,
25 Broadway,
New York City.

Dear Mr. Webb:

In the matter of the letter of the Surgeon General asking for information in regard to the effect of tetraethyl lead in gasoline when splashed in the eyes, I can only say what I have previously said to you.

Gasoline is a very irritating substance when splashed into the eyes. It produces redness and itching which is likely to persist for several hours after the injury, except as the gasoline is washed out immediately by some irrigating solution such as boric acid or salt solution. The effect of tetraethyl lead in the eye is not as intense as that of gasoline of the ordinary commercial grade, but ethylene dibromide in concentrated form stings and produces a considerable degree of redness and irritation which is quite as much as that produced by the gasoline itself. I have not seen any permanent damage in either experimental animals or in men who have splashed either gasoline, or tetraethyl lead, or ethylene dibromide into their eyes. Under the early conditions of blending at the Dayton Plant the splashing of a drop or two or ETHYL fluid or one of its ingredients occurred fairly frequently. There were no cases of delayed or permanent injury seen. In these instances the exposed person went immediately to the first aid office and the material was washed out. There were no corneal ulcers and there was no continuing irritation of the eye. I also did some experimentation on rabbits using all of the ingredients of ETHYL fluid and an ordinary grade of gasoline. There was a considerable amount of irritation produced by ethylene dibromide, ethylene chlorbromide, and gasoline, and very little effect was produced by tetraethyl lead. In no instance was there any permanent damage to the eye, even in the case of animals which were treated thus on several occasions.

I do not know anything about the possible effects of some of the highly cracked gasolines which are now being sold. My impression, which is not very well founded but which is only an impression, is that these gasolines are somewhat more irritating to the skin than are the uncracked gasolines.

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I think it very unlikely that any of these materials are capable in themselves of producing permanent damage to the eye. What I think happens is that the individual splashes the gasoline (ordinary or Ethyl Gasoline) into his eye, thereby irritating his eye and causing it to itch, and that he rubs the eye increasing the irritation and possibly introduces dust or other foreign material. In this way it is possible to produce a corneal ulcer. In fact, corneal ulcers are known to be produced by many types of irritants which in themselves are not intense. The slight corneal injury so obtained is likely to become infected, and when it does so the outcome of a corneal ulcer is variable resulting in either a slight injury or scarring of the tissue which produces almost complete loss of vision.

The evidence that the above picture represents the true story is rather scanty and can not be regarded as settled, but this is my opinion of the way these things happen. You may communicate any or all of the above to the Surgeon General for whatever he may think it is worth.

Very truly yours,

RAK:EJ

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