

October 5, 1942

Major Kenneth Somers
Office of the Surgeon
57th Signal Battalion
Camp Edwards
Massachusetts

Dear Sir:

1. Reference is made to your letters of September 18 and September 30, regarding removal of tetraethyllead from gasoline for use in a small Coleman stove for heating water.

2. There are two possible disadvantages in the use of leaded gasoline for this purpose: (1) interference with the performance of the burner, and (2) the health hazard from the finely divided lead compounds in the combustion gases.

Regarding operation in the burner, I believe that this Coleman unit will perform reasonably well on leaded gasoline. For further information, I suggest that you write to Mr. N. Mullis of the Coleman Lamp & Stove Co., Wichita, Kansas.

With regard to the health hazard, this is difficult to evaluate. It is determined largely by the kind of ventilation, and to a less extent by the care taken when washing off a cooking vessel, etc., on the outside of which a thin film of solid lead compound has been deposited. It is generally accepted that air containing not more than 1.5 milligrams of lead per 10 cubic meters is perfectly safe to breathe. If the motor gasoline used should contain the maximum amount of tetraethyllead, 3 cc. per gallon, the gaseous products of combustion must be diluted with 600 volumes of air to reduce the average lead content to the above figure. A typical burner yields 1200 cubic feet of gaseous combustion products per gallon of fuel. From these data it will be seen that a considerable amount of ventilation is required in order to make it safe to breathe continuously in the presence of the combustion products. In practice, very much less ventilation may be adequate, provided the stove has some kind of a duct or chimney leading outdoors. Similar considerations also apply to the health hazard from the carbon monoxide which is inevitably present to a certain extent in the products of combustion. Further information on this subject can be obtained from Dr. Robert A. Kehoe, College of Medicine, University of Cincinnati, Cincinnati, Ohio.

3. Enclosed is a bulletin on the removal of tetraethyllead from gasoline. As will be seen, all work along this line is still in the experimental stage. For treating 5-gallon samples of gasoline with Filtrol at room temperature, a percolator has been designed by Mr. S. R. Munster, of the Filtrol Corporation, 315 West Fifth St., Los Angeles, Calif.; we believe that this equipment has not yet been standardized, but is still undergoing

Mr. K. Samers

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development. The example given on page 4 of the attached bulletin indicates what can be hoped for from the use of this method. What it seems to boil down to is that the method will certainly work, and can be used if absolutely necessary, but it will be a considerable nuisance especially for mobile operations in the field.

4. If, after studying this situation, you believe that we can be of any further assistance, please call on us promptly.

Very truly yours,

George Calingaert,
Director

per Harold A. Gatty,
Assistant Director

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