

LEAD INDUSTRIES ASSOCIATION

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TETRAETHYL LEAD

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In commenting on the outlook for lead consumption for the production of tetraethyl lead, I am in the position of trying to tell you something about which you already should have knowledge. A measure of future metallic lead requirements for tetraethyl lead production can be attained by asking yourself "How much driving will be done by my household this year", "How much gasoline will I use in 1953, or 1954, or 1955". Multiply your answer by the 31 million passenger car owning households in the United States. To this add the services of the trucking and aviation industries you will utilize, and you will be very close to the domestic demand for tetraethyl lead. Thus the industry's market is dependent wholly upon the motor fuel sales of the petroleum industry, so to look into metallic lead consumption it is necessary to examine your motoring plans and to consider the problems of the petroleum industry.

Speaking more precisely, the consumption of tetraethyl lead is the product of the unit quantity of this antiknock agent added to each gallon or barrel of motor fuel, and of the demand for motor and aviation gasolines.

Considering the first factor, the trend of compression ratios of American built automobile engines is continuing upward with no sign of abatement. As long as this basic influence prevails, higher and higher octane numbers must be provided for them. While jet engines are partially replacing piston engines for aircraft, this development is not expected to reduce aviation gasoline consumption during the next five years. Further, it is indicated that the low octane gasolines presently used outside the United States and Canada will soon be unacceptable.

There are only two procedures by which the petroleum industry can provide octane numbers in gasoline. These are by the addition of an antiknock agent or by special refining procedures. Other than tetraethyl lead, no antiknock agent having a prospect of commercialization has ever been developed. Hence, the competition resolves itself into the relative economics of tetraethyl lead use and refining processes.

Examining the indices of crude oil prices, construction costs and wage levels, we find that these three most important factors influencing gasoline processing and realization of octane numbers by refining have more than doubled since 1940. On the other hand, tetraethyl lead sells for essentially the same price as it did thirteen years ago. Therefore, we expect an increasingly favorable climate for the use of tetraethyl lead, and the octane values added by tetraethyl lead should continue to increase.



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As to the second factor - demand for motor fuel - here the past gives a clue to the future, hence the following data on motor fuel production for certain years between 1940 and 1952 may be of interest.

Total Motor Fuel Production

Ex. U.S.S.R. & Satellites
- Millions of Barrels -

	<u>United States</u>	<u>Balance of World</u>	<u>Total</u>
1940	617	120	737
1946	777	180	957
1950	1,024	320	1,344
1952	1,190	377	1,567

Since 1946, world wide production of gasoline has increased nearly nine percent annually, and while this rate of increase may not continue, it is indicative of an expanding market.

Since the relationship of the two factors affecting tetraethyl lead use are favorable, we expect a healthy and steady increase in the industry's consumption of metallic lead.

While it is not my intention to specifically forecast lead consumption, some comments on the world capacity, excluding U.S.S.R. and satellites, for tetraethyl lead production may be of interest.

During 1952 some 160 thousand tons of metallic lead were consumed by the world's tetraethyl lead producers. Both United States producers have expanded capacity during the last twelve months and the producer in the United Kingdom expects to have expanded facilities in operation by January 1, 1954. As the result of these programs world capacity will be above 650 million pounds annually. If it is assumed the expanded facilities will operate at 85% of capacity in the reasonably near future, an annual lead consumption of 185 thousand tons will result. I see no reason for the lead producers to be pessimistic as far as tetraethyl lead is concerned.