



LEADED VS. UNLEADED FUELS

Truth – Tetraethyl lead (TEL) was introduced into gasoline in the 1920's to increase the octane of the base gasoline. TEL is heavier than gasoline so it has good BTU value and does not increase the RVP of gasoline like other chemicals used to increase octane.

In 1974 the Government announced the phase down of lead in gasoline in part due to the environmental effect of lead, but mostly due to cars would have catalytic converters installed starting in the 1975 model year. Lead, when burned leaves a minute film that can render the platinum and other reactive minerals in the catalytic converter ineffective. Therefore, over the next ten years, lead was reduced to the level it is today.

Today, all racing fuel companies still use TEL as one of their primary components in blending racing fuels. However, due to demand and the EPA requirements for today's vehicles most companies have unleaded performance fuels as well.

Myth – *There is a wide belief that lead was put into gasoline to protect the valve seats. Now that there is only unleaded gasoline at the pumps, older engines must run a lead substitute or they will burn up the valve seats.*

Again, this is an "old wives tale". While there is some benefit to the valve seat from the residue of combusted TEL, that was not its primary purpose. Due to the added heat in the exhaust caused by the addition of the catalytic converter starting in 1975, the automobile manufacturers had to install hardened valve seats on the exhaust side to prevent cracking and valve seat recession. The valve seat recession is due to the softening of the valve seat due to the excess heat in the exhaust not from the lack of lead. Again, lead was phased down, not removed over a ten-year period, not immediately.

Therefore, older cars that have normal exhaust systems and no converter, or even high performance, less restrictive exhaust systems would be fine on unleaded fuel, hardened seats or not. In fact, Amoco Oil never sold leaded fuel in the southwestern part of the U.S. and there is no accounting of massive valve seat failure in that part of the country.

However, this is one of those very well engrained urban legends, so if a customer has any concerns, certainly let them know there are many lead additives they can purchase on the market to add to their unleaded fuel.

