



REID VAPOR PRESSURE REDUCTION

Depending on the chemical composition of the gasoline recipe we have solutions to reduce the RVP.

Gasoline more particularly oxygenated gasoline containing ethanol can create performance problems.

Reid Vapor Pressure (RVP) standards are typically expressed as a maximum RVP limit which gasoline sold commercially in a particular jurisdiction may be compelled to meet. Such RVP limits significantly constrain the composition of hydrocarbons in gasoline because RVP increases as the proportion of lighter hydrocarbons increases.

Typically, to produce gasoline with reduced RVP, the proportion of lighter hydrocarbons, for example C4 hydrocarbons are reduced. Reducing such lighter hydrocarbons can negatively impact gasoline characteristics. For example, decreasing the amount of butane in a gasoline fuel lowers the RVP of that fuel, but it also reduces the octane rating.

By constraining the composition of gasoline, RVP limits also impose a burden upon refineries. Generally, refineries adjust the composition of gasoline by controlling the proportions of various refinery streams which are used to produce the gasoline. For example, to produce a gasoline with a higher boiling point, a refinery may need to reduce the proportion of low-boiling refinery streams used to produce the gasoline.

To produce gasoline which will satisfy applicable RVP limits, refineries typically reduce the proportion of lighter boiling hydrocarbons. RVP is typically controlled or adjusted using empirically determined RVP blending values. A RVP blend value represents a particular composition's contribution to the RVP of a particular mixture. One consequence of such RVP constraints upon refineries is that less gasoline can be refined from each barrel of petroleum. This can significantly impact the gasoline supply available to meet consumer demand.

The impact of RVP limits has intensified because of the increasing use of oxygenates in gasoline. Oxygenates are used in gasoline to increase the chemical oxygen content. Unfortunately, oxygenates have a non-linear effect upon RVP when blended into a fuel. Therefore, RVP blending values of oxygenates are determined empirically for a particular concentration of a particular oxygenate in a particular fuel.

This was partially resolved adding the oxygenate Methyl-tertiary-butyl (MTBE). However MTBE is less used and replaced by alcohols such as ethanol.

We provide a solution that can reduce the Reid Vapor Pressure (RVP) thereby allowing a higher proportion of low boiling components to be blended into the gasoline without exceeding RVP limits. This solution is highly effective in oxygenated gasoline.