

# MAX-CLEAN<sup>®</sup>

## FUEL SYSTEM CLEANER & STABILIZER

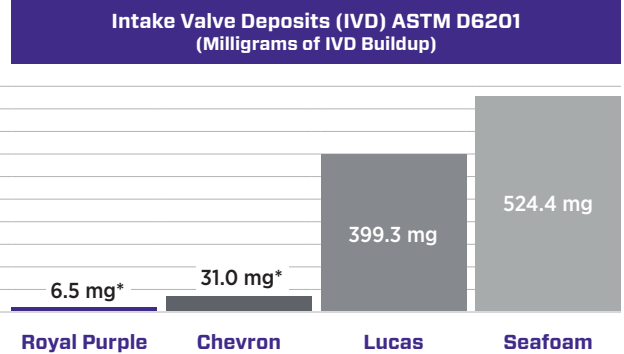
### PRODUCTS TESTED\*

- 1) Royal Purple<sup>®</sup> Max-Clean Fuel System Cleaner
- 2) Chevron Techron Complete Fuel System Cleaner
- 3) Lucas Deep Clean Fuel System Cleaner
- 4) Seafoam Motor Treatment

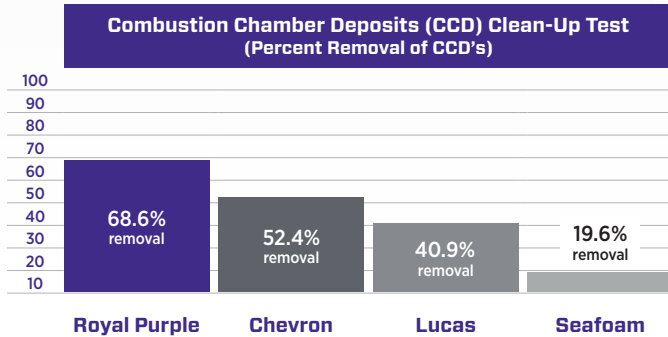
\*Each product tested at manufacturers' recommended dose

Intake Valve Deposits (IVD's) are formed by oil slowly seeping past the intake valve guide seals and down the valve guides. When oil reaches the hot valve, it sticks and burns, forming black carbon deposits. They also result from unburned fuel vapors and oil vapors siphoning back into the intake manifold through the Positive Crankcase Ventilation (PCV) system. These stubborn deposits are very difficult to remove. As they accumulate, airflow into cylinders is restricted and causes loss of power and fuel economy. Max-Clean prevents IVD's and optimizes performance.

\*Testing performed 2020 by Southwest Research Institute.



\*Royal Purple/Chevron pass TOP-TIER IVD spec (Must be <50 mg to pass TOP-TIER)

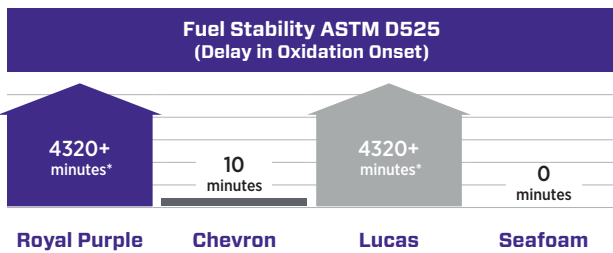
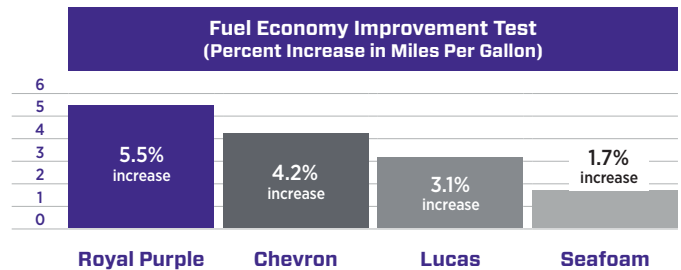


Combustion Chamber Deposits (CCD's) increase the compression ratio of an engine and the octane requirements of the fuel. If the fuel's octane rating is not high enough to compensate for CCD buildup, it results in detonation and build-up of heat/hot-spots that damage head gaskets, piston rings and rod bearings. Knock sensors in modern engines detect detonation and trigger the ECU to retard timing. But this reduces performance and fuel economy, and increases emissions. Max-Clean removes CCD's, relieves octane increase burden, and restores performance.

\*Testing performed 2020 by ATD GmbH.

Depending on the nature and severity of IVD's and CCD's, they can reduce fuel economy by an average of 2%-7%, depending on engine type, driving conditions, and type/octane of fuel used. Max-Clean provides a one tank clean-up and is only required once every 10,000 miles of driving. The dollar savings that results from decreased fuel consumption between Max-Clean applications more than offsets its cost - meaning it actually pays for itself.

\*Testing performed 2020 by ATD GmbH.



\*Test terminates at 4320 minutes

Oxidative stability of hydrocarbons in fuel impacts how quickly they chemically break down to form gums that stick to engine surfaces and coke (bake) into deposits. By delaying/preventing the onset of oxidation, less gums are formed, resulting in fewer deposits. This reduces the clean-up burden of fuel detergents. In this way, fuel stabilizers function synergistically with detergents to maintain total engine cleanliness. Max-Clean stabilizes fuel (especially before/after idle periods) to prevent deposit-forming gums.

\*Testing performed 2020 by Southwest Research Institute.

