



LUBRICANTS

March 18, 2011

Re: Update from **BRAD PENN**® Technical Services Department

Dear **BRAD PENN**® Distributor:

Our commitment to provide our **BRAD PENN**® Distributors/Customers with industry related technical information led to this mailing. Last September, American Refining Group, Inc. reported on the issues associated with utilizing E85 (85% Ethanol, 15% gasoline) in 2-cycle equipment. These issues involved gumming and/or deposit build up within the carburetor. It was our recommendation at the time that the use of E85 fuel with our conventional Brad Penn® Low Pour Universal 2 Stroke Engine Oil (#7253) be avoided and considered a misapplication, as the use of ethanol concentrations greater than 10% will likely equate to the unfavorable (and harmful) issues previously mentioned. Furthermore, ARG also reported that a major OEM (Original Equipment Manufacturer) of 2-cycle equipment provided notification that they do not authorize the use of E85 fuel in their 2-cycle equipment. It was this OEM's belief that the E85 fuel will cause catastrophic damage to their engine(s).

Our continuing research on the subject has shown that the E85 issue(s) are not only confined to 2-cycle equipment, but also include 4-cycle engines. We are now hearing from passenger car customers, specifically owners/operators of older "vintage" or "legacy" vehicles that are encountering similar gumming and/or deposit issues. As a matter of fact, the issue is compounded when used oil is left in the crankcase during lengthy cold ambient temperature storage conditions. One commonality between affected applications is the utilization of E85 fuel with older API Service Category engine oils. Although these very same oils are well suited for use in designated older engine applications, they should not be considered for use with E85 fuel. Prior to the very latest PCMO ILSAC GF-5 / API SN (Resource Conserving) classification, most motor oils were not specifically designed to handle E85 fuels.

As flex fuel vehicle (FFV) manufacturing is expanding, so is the range of available ethanol-containing fuels. As you may know, (FFVs) are capable of operating on gasoline, E85, or a mixture of both. The latest ILSAC GF-5 /API SN (Resource Conserving) specification addresses improved rust protection and emulsion retention with E85 fuels. Since alcohol fuels tend to attract and hold water, motor oils meeting ILSAC GF-5 / API SN (Resource Conserving) are formulated to prevent phase separation (free water) of the crankcase oil due to fuel dilution. The technology developed for ILSAC GF-5 / API SN (Resource Conserving) engine oils was designed to prevent both premature and catastrophic engine failure by keeping oil, ethanol, and water in one phase.

Bottom line....we recommend motor oils meeting ILSAC GF-5 / API SN (Resource Conserving) requirements for FFVs utilizing E85 fuel. The use of E85 fuel in gasoline engines utilizing older API category engine oils should be avoided.

Should you have any questions regarding this information, please contact your Regional Sales Manager or **BRAD PENN**® Technical Services Department.