

IMPACT OF THE FUEL-BORNE CATALYST MMT ON DIESEL PARTICULATE FILTERS AND LEAN NO_x TRAP PERFORMANCE

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ABSTRACT

This presentation builds on the work summarized by Ethyl at the DEER 2002 Conference by examining the role that MMT can play in catalyzed diesel particulate filter systems and lean NO_x traps (LNT's) using a contemporary Model Year 2002 medium-duty Cummins 5.9L ISB diesel engine. Balance point and filter loading were investigated at a series of engine speed and load combinations, with soot accumulation and balance point being reduced in all

cases. Soot accumulation was affected as MMT lowered the amount of elemental carbon emissions (dry particulate). MMT was also found to protect lean NO_x traps by scavenging the fuel sulfur and engine oil-derived phosphorus and incorporating them into the ash. Improvements in LNT performance and durability were demonstrated using MMT in ultra-low sulfur fuel.