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**Emissions Evaluations of Diesel Engines Operated with JP-8 and a 50/50  
Fischer-Tropsch/JP-8 Blend**

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The emissions of diesel engines operating on JP-8 and a 50/50 JP-8/Fischer-Tropsch (FT) blend were assessed. Particulate matter (PM) and gaseous emissions were measured from three diesel engines operating with the two alternative fuels and No. 2 diesel. The engines evaluated are used to power R-11 and R-12 military refueling trucks. The exhaust sample was extracted from the engine tail pipe to measure mostly non-volatile (i.e., soot) PM emissions. The particle number, PM size, mass and smoke numbers were characterized using primarily commercially available aerosol instrumentation. Gaseous species measured include CO and NO<sub>x</sub>. Engine performance with the alternative fuels was also assessed, and discussed briefly in this paper. In general, the diesel engines operated satisfactorily with the alternative fuels. Although the engine particle number emissions did not follow clear trends relative to fuel type or engine power, in general, lower PM emissions (mass and size) were observed for the three engines during operation with the alternative fuels compared to diesel. Statistically significant lower CO and NO<sub>x</sub> emissions were also observed with the alternative fuels. Discussions on the emissions results, engine performance and the potential impact of fuel chemical and physical properties on the resulting emissions are presented.