

## **BACKGROUND: DRIVERS FOR PC-10**

### **The Next Heavy Duty Diesel ASTM**

#### **Lubricant Specification**

The current performance category for emission-controlled, four-stroke cycle heavy duty diesel engines is API CI-4, which was available for licensing in September 2002. While the tests for this category were under development by the ASTM Heavy Duty Engine Oil Classification Panel, it was known as PC-9, or proposed "C" category, 9<sup>th</sup> change. These oils were intended for use in on-highway heavy duty trucks using advanced emission-control systems such as exhaust gas recirculation (EGR) or the proprietary Caterpillar ACERT (R-TM) system.

The Engine Manufacturers Association (EMA) has advised the DEOAP that a new performance category will be required by the third quarter of 2006 to match the availability of ULSD arriving in June 2006. The desire is to have licensing and market availability of these new oils in the third quarter, even though the new emission limits do not take effect until January 2007. This timing is driven by the OEMs desire to begin introducing their new engines as soon as the ULSD fuel is readily available. In order to meet this timing and still allow time for a major reformulation of all HD oils, the ASTM new test development work must be complete by the third quarter of 2005, or roughly one year from now.

This new category is currently being referred to within ASTM as PC-10. The primary focus of PC-10 is to develop a category to define oils for use in heavy duty diesel engines that are equipped with exhaust aftertreatment devices to control emissions to 2007 limits. Ideally, all parties involved in PC-10 development would prefer to have a performance test to measure the impact of lubricant formulations on exhaust aftertreatment devices. However, the short time available, the costs involved in test development and the demonstrated difficulty in developing such tests have led to the use of chemical limits on PC-10 formulations in lieu of an available test.

As of early fourth quarter 2004, none of the proposed new tests for PC-10 has reached the point of being ready to start precision matrix testing, and at least one new test is not even available yet. Given the short time available until the desired first license date, meeting the target completion date seems very optimistic.