

## **PC – 10: The development of the next heavy duty engine oil quality level is underway.**

The next EPA emission target becomes effective in 2006 and the process of defining engine oils to meet these new lower emission engines are well underway and is named PC-10 during the development process. Ultimately, the set of requirements will become the next API category for heavy duty diesel engines.

Later this year, for the first time, chemical limits will be placed on heavy duty engine oils of the future. Since all diesel engines will be equipped with particulate traps, there will be a limit on sulfated ash, sulfur and phosphorous levels.

There are eight proposed engine test for PC-10 to meet the expectations of the various OEM's as is illustrated in the following tabulation.

<b>Parameter</b>	<b>Engine Test and Sponsor</b>							
	<b>Cummins</b>	<b>Cummins</b>	<b>GM</b>	<b>CAT</b>	<b>Mack</b>	<b>Mack</b>	<b>GM</b>	<b>Navistar</b>
	<b><u>ISM</u></b>	<b><u>ISB</u></b>	<b><u>6.5L</u></b>	<b><u>C-13</u></b>	<b><u>T-12</u></b>	<b><u>T-11</u></b>	<b><u>III G</u></b>	<b><u>7.3L</u></b>
<b>Valve train wear</b>	X	X	X					
<b>Liner wear</b>					X			
<b>Ring wear</b>	X				X			
<b>Bearing corrosion</b>					X			
<b>Oxidation viscosity increase</b>					X		X	
<b>Oil consumption</b>				X	X			
<b>Piston deposit</b>				X				
<b>Soot viscosity increase</b>						X		
<b>Sludge</b>	X							
<b>Filter plugging</b>	X							
<b>Aeration</b>								X

Source: Lubes n Greases, February 2004  
 Universal Lubricants, Inc  
 Technical Services  
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