



## **ACEA E9-08**

### **Overview**

ACEA E9 is a new mid SAPS<sup>1</sup> requirement for Super High Performance Diesel (SHPD) lubricants for use in mid drain applications. ACEA E9 contains many elements of the North American API CJ-4 specification.

ACEA recommend ACEA E9 for use in vehicles fitted with advanced exhaust aftertreatment systems for the reduction of particulate matter (DPFs) and the oxides of nitrogen (EGR and/or SCR) in combination with low sulphur diesel fuel.

ACEA E9 oils are expected to be SAE 15W-40 based on API Group II base oils. The main physical and chemical requirements anticipated for ACEA E9 are shown below:

The unique inclusion of the Mack T-11 engine test in this category places an emphasis on enhanced soot handling performance and means ACEA E9 takes a global position, aligning with global OEM specifications such as Daimler MB228.31 and Volvo VDS-4.

E9 anticipates baseline performance for Euro VI emission legislation, which will likely demand mandatory DPF on all vehicles in Europe (aligning with EPA 2010).

Note 1 : SAPS refers to Sulphated Ash, Phosphorus and Sulphur, the levels of which are often restricted in the latest performance specifications.

### **Changes**

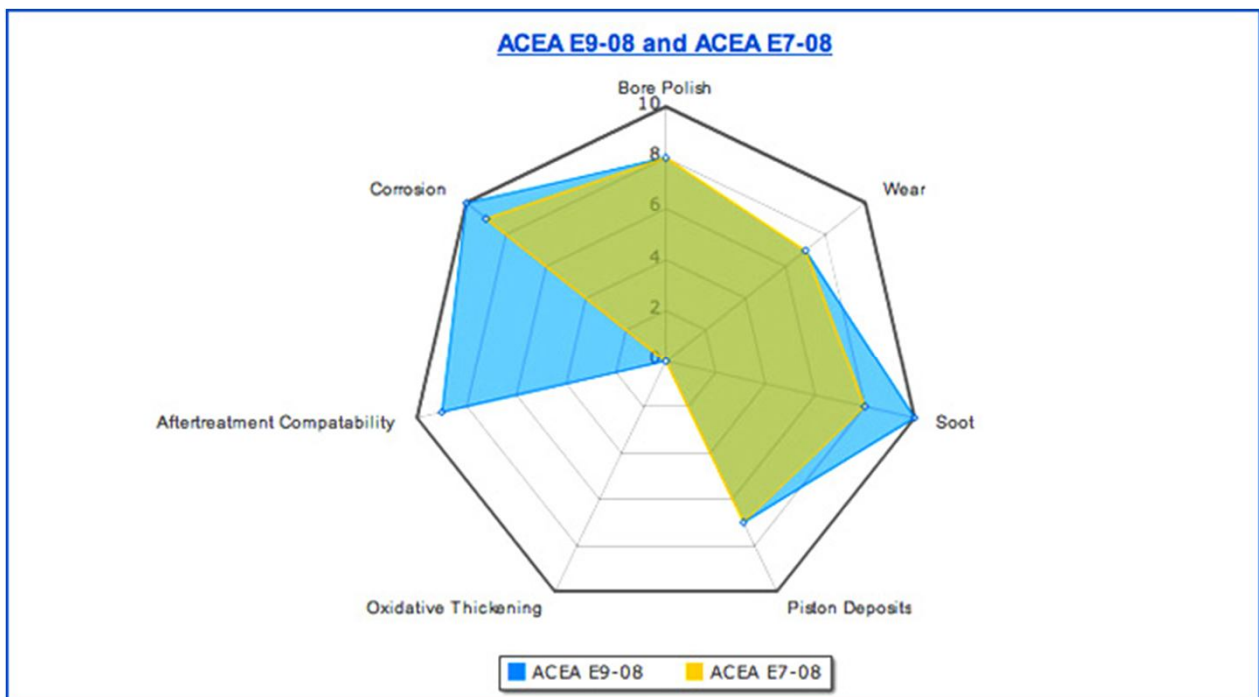
As ACEA E9 is a new category within the heavy duty oil sequences.

### **Relative Performance**

The relative performance diagrams presented below compare Lubrizol's interpretation of the performance requirements of ACEA 2008 E9 oil sequence with the ACEA 2008 E7 oil sequence.

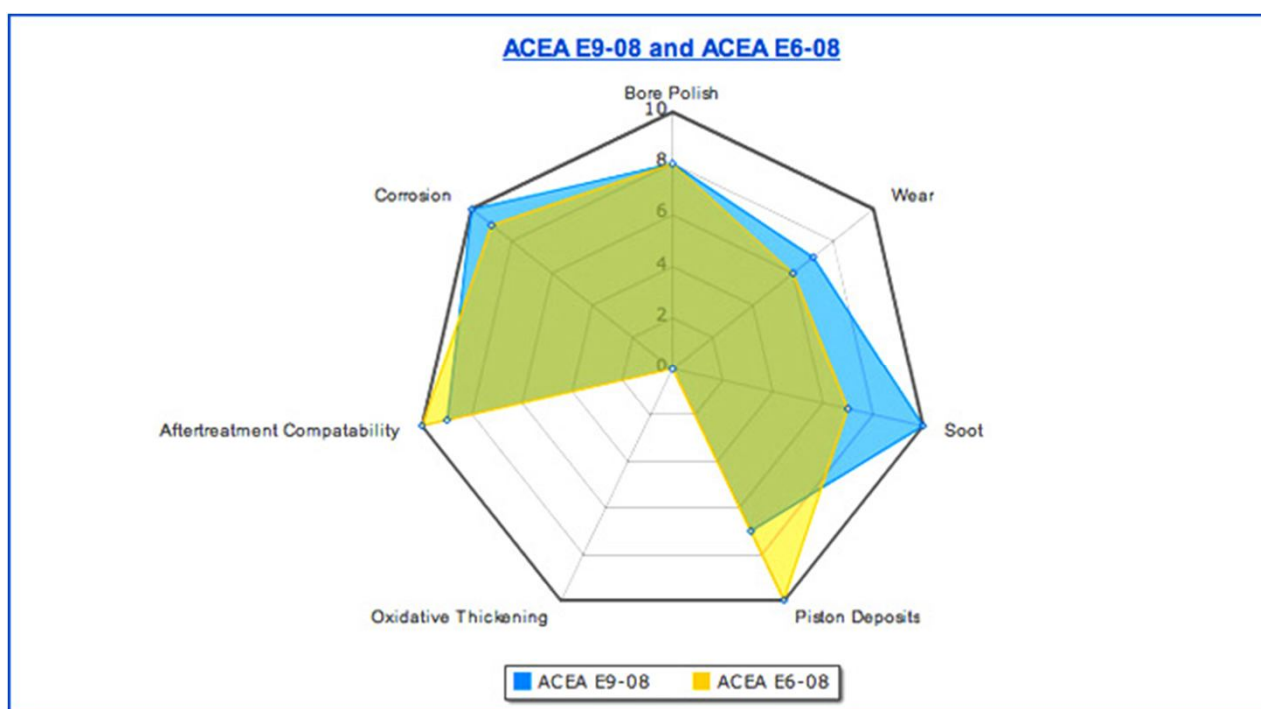
This comparison illustrates how both sequences are expected to provide similar performance in terms of bore polishing, wear protection and piston cleanliness. However, ACEA E9 is expected to provide a higher level of performance in terms of corrosion protection, soot handling and aftertreatment compatibility than ACEA E7. The relative performance diagrams presented below compare Lubrizol's interpretation of the performance of the ACEA 2008 E9 oil sequence with the ACEA 2008 E6 oil sequence.

This comparison illustrates how ACEA E9 is expected to provide a greater level of performance in terms of corrosion protection, wear protection and soot handling than ACEA E6. Both are expected to provide similar performance in terms of bore polish and ACEA E6 has a higher level of aftertreatment system compatibility and piston cleanliness.



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The relative performance diagrams presented below compare Lubrizol's interpretation of the performance of the ACEA 2008 E9 oil sequence with the ACEA 2008 E6 oil sequence.



This comparison illustrates how ACEA E9 is expected to provide a greater level of corrosion protection, wear protection and soot handling than ACEA E6. Both are expected to provide similar performance in terms of bore polish and ACEA E6 has a higher level of aftertreatment system compatibility and piston cleanliness.