

PC-11 TECH BULLETIN

What is different about PC-11 oils?

Both of the PC-11 specifications have been carefully designed to work with new engines designed to improve the fuel efficiency and performance of trucks. The new lubricants will provide greater durability to support engine protection, while allowing engines to run more efficiently and use less fuel.

However, the key aspect all end users of heavy-duty engine oils must become familiar with is the difference in viscosity between the API (American Petroleum Institute) CK-4 and FA-4 oils.

- **API CK-4 (PC-11A)** engine oils will be an upgrade to the current CJ-4 lubricant specification and be completely backwards compatible with older diesel engine oil categories. The oils will be designed with improved oxidation resistance (reducing long term oil degradation), shear stability (known as the ability to maintain fresh oil viscosity properties under high stress conditions) and aeration control (which is critical in modern high temperature engines).
- **API FA-4 (PC-11B)** engine oils will have all the benefits of CK-4 (PC-11A) oils, plus optimized viscosity grades for enhanced fuel economy, which supports the reduction in fuel consumption and CO₂. However, these oils will have limited backwards compatibility because some older engines are not designed to operate with such low HTHS (High Temp High Shear) viscosity oils.

What does this mean for the industry?

Every part of the international automotive industry is undoubtedly affected by tightening emission legislations. Original Equipment Manufacturers (OEMs) are responding by improving component manufacturing and producing innovative hardware which utilise the latest surface materials and reduce friction in engines.

For the lubricants and additives industry these advancements in hardware technology have helped meet the challenge created by the shift towards hydrodynamic engines, which simultaneously address engine friction and improve fuel economy.

What is the future for Europe?

Although PC-11 oils have been specifically designed for the North American market, it is clear that similar drivers for innovation are already under way in Europe. The early adoption of lubricants that promote fuel economy creates an opportunity for the proactive fleet manager to both reduce their fuel costs and improve the performance of their fleets and for the wider industry to meet its ambitious reduction targets.

It makes sense on a business level too. PC-11 engine oils have been developed with increased durability at the forefront of the specification, meaning greater engine protection over longer periods and potentially fewer oil changes, which can result in a reduction in downtime for heavy duty vehicles – a major source of lost income for fleet owners.

The evolution of industry standards and legislated commitments are undoubtedly forcing OEMs to take more proactive measures to reduce environmental impact of equipment throughout its usable life. In Europe, this has manifested a market shift in the European base oils market from lower performance Group I products to higher performance Group II and Group III.

With a strong track record / history in the manufacturing of high performance base oils, Champion Oil, is well positioned to support this new oil category market shift.