

ACEA 2008 is coming...  
Will you have the right oils?

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# UEIL 2008 : ACEA 2008 is coming...



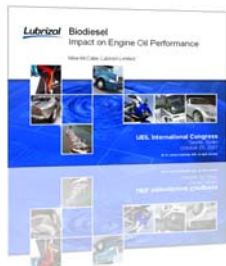
## UEIL Congress 2005

The introduction of Euro 4 has led to a new generation of aftertreatment compatible Lower SAPS<sup>1</sup> engine oils.



## UEIL Congress 2006

Lower SAPS engine oils are essential components in maintaining vehicle emissions compliance throughout the life of the vehicle.



## UEIL Congress 2007

Increasing biodiesel usage will have an impact on engine oil durability and using the right engine oil is essential to ensure the engine is protected.

## UEIL 2008 : ACEA 2008 is coming...

- ACEA<sup>2</sup> 2008 draws together the changes we have seen in engine oils over the last 5 years



- New engine oil technology for aftertreatment system compatibility
  - Increased engine oil durability & fuel economy improvement
  - Increased engine oil performance for new engine designs
- As proposed ACEA 2008 represents the biggest performance upgrade since the introduction of the ACEA Sequences
  - All existing engine oils will need testing to meet ACEA 2008 and some will be unable to meet this new challenge

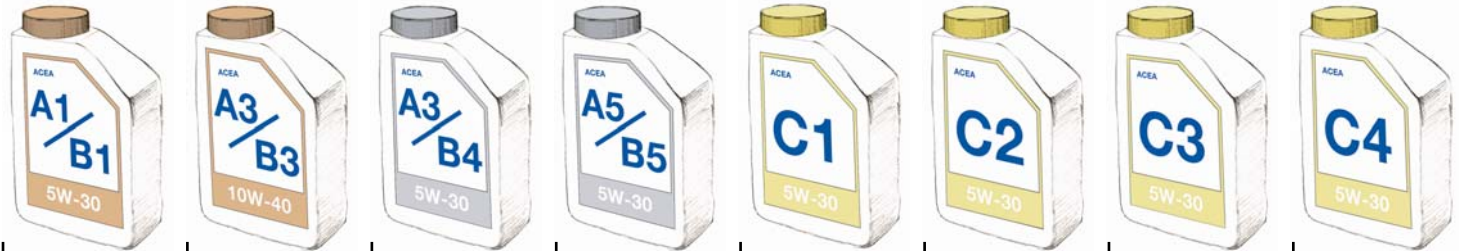
# Why is ACEA 2008 needed?

- The vehicle parc<sup>3</sup> has changed
  - The majority of vehicles in the EU<sup>4</sup> meet Euro 3 or later and were designed to use a higher performance engine oil
  - The minimum performance levels in ACEA need raising to ensure adequate protection for older vehicles
- The operating environment has changed
  - Higher power density engines and alternative fuels have created a more severe operating environment
  - This requires a higher performance engine oil
- Some of the tests are obsolete
  - Some engine tests need updating to newer engine technology
- ACEA is seen throughout the world
  - ACEA performance engine oils need to provide suitable performance across a wider range of fuel qualities and service

# ACEA 2008

- Timing
  - Under development for over 2 years
  - Expected to be issued before the end of 2008
  - Existing ACEA 2007 performance claims are expected to be valid for up to 2 years after ACEA 2008 is introduced
- Main proposed changes
  - Increased sludge handling
  - Increased direct injection diesel performance
  - Minimum new oil Total Base Number (TBN) requirements
  - New HD sequence introduced and an older one removed
  - New engine tests to replace older tests

# Example 1 : Increasing sludge handling

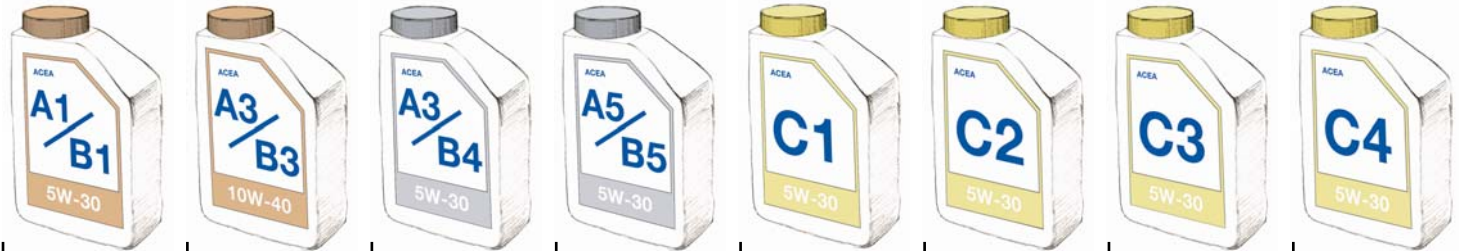


<b>ACEA 2007</b>	Sludge performance $\geq$ reference oil	> ref. +4 $\sigma$
<b>ACEA 2008</b>	Sludge performance $\geq$ reference oil +4 $\sigma$	

These changes are proposed by ACEA to increase engine oil durability to ensure engine oils are suitable for use in smaller, higher power density turbo-charged gasoline engines and in areas of poorer fuel quality.

***This aligns all Sequences with top tier engine oil performance***

## Example 2 : Increasing diesel piston cleanliness

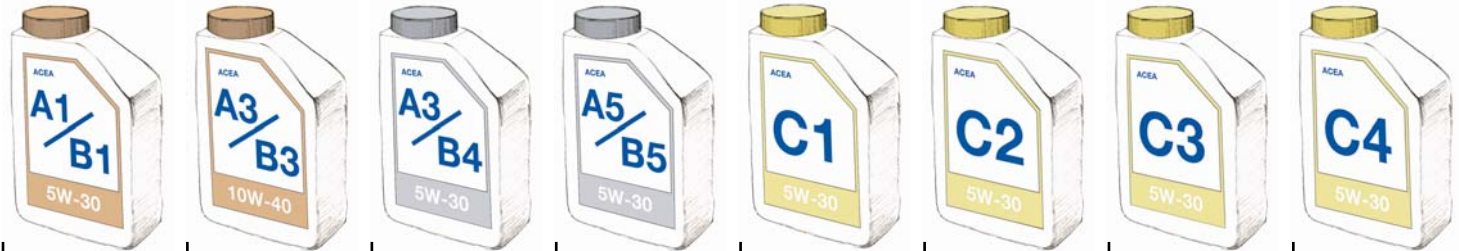


<b>ACEA 2007</b>	Indirect injection only	$\geq$ ref. -3 pts	DI diesel piston cleanliness $\geq$ reference oil
<b>ACEA 2008</b>	$\geq$ ref -4 points	Direct injection diesel piston cleanliness $\geq$ reference oil	

These changes are proposed by ACEA to raise engine oil durability due to the usage of biofuels, increased fuel dilution levels from DPF<sup>4</sup> regeneration and to ensure all engine oils are suitable for use in direct injection diesel engines.

***This aligns all Sequences with top tier engine oil performance***

## Example 3 : Minimum new oil TBN levels











<b>ACEA 2007</b>			$\geq 6 \text{ mg KOH/g}$
<b>ACEA 2008</b>	$\text{TBN} \geq 8 \text{ mg KOH/g}$		$\geq 6 \text{ mg KOH/g}$

These changes are proposed by ACEA to ensure the durability of engine oils used in areas of poorer fuel quality is maintained and will result in ACEA C Sequence oils being unsuitable for use in applications specifying ACEA A/B.

***This will lead to greater fragmentation as older oils remain used***

## Example 4 : New HD sequence introduced

<b>ACEA 2007</b>					
<b>ACEA 2008</b>					

ACEA are proposing to remove the ACEA E2 sequence and introduce a new performance category, ACEA E9, for use in mid drain applications in vehicles fitted with advanced aftertreatment systems.

***This raises performance for all Sequences to the SHPD<sup>5</sup> level***

## Example 4 : New HD sequence introduced



- ACEA E9 is expected to be for use in
  - Mid-drain applications
  - Vehicles fitted with advanced aftertreatment systems such as DPFs
- ACEA E9 is expected to be aligned with
  - API CJ-4
  - Daimler MB-Approval 228.31
  - Volvo VDS-4
- ACEA E9 engine oils are expected to be
  - SAE 15W-40
  - API Group II based
- ACEA E9 is expected to
  - Drive API Group II usage in Europe
  - Be used worldwide
  - Be a major oil quality level for Euro VI vehicles

## Example 5 : New engine tests

ACEA 2007	ACEA 2008	
VW ICTD	VW TDI	ACEA A1/B1 & A3/B3 only
OM602A	OM646LA	All ACEA Oil Sequences
OM441LA	OM501LA	All ACEA E Oil Sequences
Mack M11 EGR	Cummins ISM	ACEA E6, E7 & E9 only
Mack T10	Mack T12	ACEA E6, E7 & E9 only
-	Mack T11	ACEA E9 only <sup>6</sup>

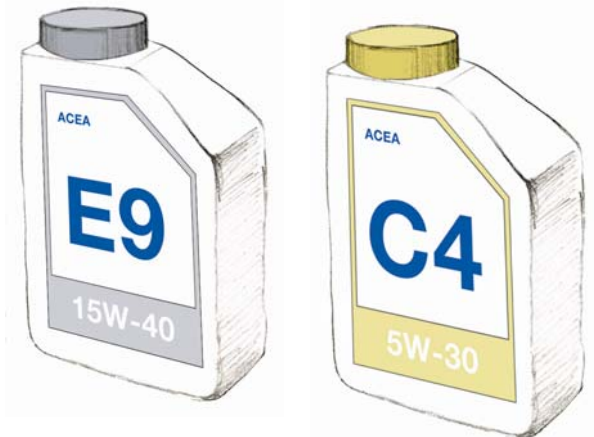
ACEA are proposing to replace a number of older engine tests. Including the OM646LA and OM501LA which will be the first to use 5% biodiesel.

***Every engine oil will need additional test data to meet ACEA 2008***

## ACEA 2008 is coming...

- ACEA 2008 will draw together many of the changes seen in engine oil performance over the last 5 years
- As proposed ACEA 2008 represents the biggest performance upgrade since the introduction of the ACEA Sequences
- All existing engine oils will need testing to meet ACEA 2008
- Some will be unable to meet this new challenge and this may lead to a slower rate of adoption of ACEA 2008

***As proposed ACEA 2008 raises the minimum level of performance for service fill engine oils to a high performance premium engine oil***



***Lubrizol***

