



Update on ACEA Engine Oil Sequences

May, 2021-8th CIS Base Oil & Lubricants Conference-19-20 May 2021

ACEA updated LD sequences April 2021

- ACEA Oil Sequences have been updated periodically since 1996
- Ensures that engine oils are able to meet the ever-changing requirements of the latest engine technologies
- For the first time, ACEA 2021 has separated the Light Duty and Heavy Duty Oil Sequences to allow a more flexible approach to updating the specifications

ACEA 2021 : New engine tests

- 6 new tests are introduced, two old tests are deleted
- Codes of Practice allow marketers to continue oils with proven field performance

	Test	Parameter	ACEA Categories
New	ASTM D 5830 (Seq IVB, Toyota 2NR-FE)	Valve train wear	All A/B and C
New	JASO FE M366 (Toyota 2ZR-FXE)	Fuel Economy	C6 only
New	CEC L-114-19 (Toyota 1KD-FTV)	Turbo charger deposits (diesel)	A7/B7 and C6
New	ASTM D8291-19 (Seq IX, Ford)	Low speed pre-ignition GDI turbo	A7/B7 and C6
New	ASTM D8279-19 (Seq X, Ford)	Chain wear GDI	A7/B7 and C6
Successor	CEC L-117-20 (VW TDI 3)	DI diesel piston cleanliness/ring stick	All A/B and C
Deletion	CEC L-099-08 (OM 646LA)	Diesel engine wear	n/a
Deletion	CEC L-104-16 (OM 646 BIO)	Effects of bio-diesel	n/a

2 new categories, A7/B7 and C6

- Low viscosity categories, introducing:
 - ASTM Low Speed Pre-Ignition test
 - ASTM Timing chain wear test
 - CEC Diesel turbocharger deposits test
 - JASO Fuel economy test (for ACEA C6 category)

	ACEA A7/B7	ACEA C6
HTHS viscosity @150°C	$\geq 2.9\text{cP} \ \& \ \leq 3.5\text{cP}$	$\geq 2.6\text{cP} \ \& \ < 2.9\text{cP}$
SAPS	“High”	“Low”
TBN (ASTM D4739)	$\geq 6.0 \text{ mg KOH/g}$	$\geq 4.0 \text{ mg KOH/g}$
S.Ash (ASTM D874)	$\leq 1.6\%$	$\leq 0.8\%$
Phosphorus (ASTM D5185)	-	$\geq 0.07 \ \& \ \leq 0.09$

ATIEL contributes significantly in collaboration with ACEA and ATC

- New ACEA 2021 Light-Duty Sequences is a positive outcome for all automotive industry stakeholders, and particularly for consumers
- ACEA Sequences and ATIEL Code of Practice are key elements of the current framework of European Engine Lubricant Quality Management System, EELQMS
- The good cooperation between ACEA, ATIEL and ATC underlines the value of developing specifications that take into account the needs of both vehicle hardware and lubricant technology, to allow the right quality lubricants to become widely available across the market



EELQMS
A guide to the European Engine Lubricants
Quality Management System

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