

Acea Oil Sequences – Valid Compatible Change

The technical association of
the European lubricants industry

ATIEL is a non-profit association (ASBL) representing the combined knowledge and experience of leading European and international engine oil manufacturers and marketers.

Through its members' combined knowledge and experience, it develops scientifically sound guidelines, best practices and standards to key technical, environmental and quality issues that benefit all stakeholders, manufacturers, end-users and the lubricants industry. **ATIEL** promotes the availability of superior quality products in the marketplace.

In addition, ATIEL promotes consensus on key technical, product stewardship and sustainability issues, ensuring that engine oils continue to contribute to improved wear protection, deposit control, lower emissions, and engine efficiency for increased fuel economy and CO₂ reductions.

ATIEL also aims to enhance the reputation of the lubricants industry by providing expert advice to regulators and industry partners.



Vision & Mission

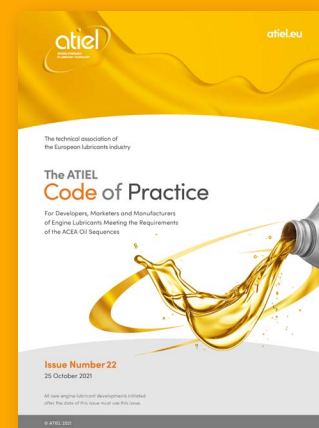
To be recognised as the technical and innovative hub of the manufacturers, the developers, and marketers in the European Lubricants industry.

To engage and be influential with all relevant stakeholders



ATIEL Code of Practice

Visit atiel.eu to download the latest version of the **ATIEL Code of Practice** that provides guidelines for the development of engine oils that meet the latest European ACEA specifications.



Guidance on making valid combined ACEA Category performance claims



Lubricants marketers, who are responsible for all aspects of product liability, should ensure that engine oils making combined ACEA performance claims are fully compliant with the limits of ALL the engine and laboratory tests required for each individual Category before including such claims on product packaging and literature.

There are instances, however, where making a combined claim is either:

- technically impossible due to conflicting demands of two or more Categories or
- highly unlikely due to minimal overlap in physical and chemical properties required for that combination

The table below shows the technically possible and impossible combinations of claims that can be made against the ACEA European Oil Sequences 2016 for HD and 2021 for LD and also combinations that are possible but have restrictions that make the combination unlikely.

		TARGETED SEQUENCE											
		A3/B4	A5/B5	A7/B7	C2	C3	C4	C5	C6	E4	E6	E7	E9
VALIDATED SEQUENCE	A3/B4		HTHS	HTHS TBN	SA	SA	SA	HTHS	HTHS	TBN	SA P S		SA P S
	A5/B5	HTHS TBN SA		TBN	SA P S	HTHS SA P S	HTHS Noack SA P S	HTHS	HTHS	HTHS TBNs	HTHS SA P S	HTHS TBN	HTHS SA P S
	C1	HTHS TBN SA	TBN		TBN SA P S	HTHS SA P S	HTHS Noack SA P S	HTHS	HTHS	HTHS TBN	HTHS, TBN SA P S	HTHS TBN	HTHS, TBN SA P S
	C2	SA	HTHS TBN	HTHS TBN		HTHS TBN	HTHS Noack SA P S	HTHS	HTHS	HTHS TBN	HTHS TBN P	HTHS TBN	HTHS TBN
	C3	SA	HTHS TBN	HTHS TBN			Noack SA S	HTHS	HTHS	TBN	TBN P	TBN	TBN
	C4	SA	HTHS TBN	HTHS TBN	P	P		HTHS	HTHS	TBN	TBN P	TBN	TBN
	C5	HTHS	HTHS	HTHS	HTHS	HTHS	HTHS		TBN	HTHS	HTHS	HTHS	HTHS
	C6	HTHS	HTHS	HTHS	HTHS	HTHS	HTHS	TBN		HTHS	HTHS	HTHS	HTHS
	E4	SA	HTHS SA	HTHS, TBN SA	SA P S	SA P S	Noack SA P S	HTHS	HTHS		SA P S		SA P S
	E6	SA TBN	HTHS TBN	HTHS TBN	SA P	SA P	Noack SA S	HTHS	HTHS	TBN		TBN	
	E7	SA TBN	HTHS SA	HTHS TBN SA	SA P S	SA P S	Noack SA P S	HTHS	HTHS	TBN	SA P S		SA P S
	E9	SA TBN	HTHS TBN	HTHS TBN	SA P S	SA P S	Noack SA P S	HTHS	HTHS	TBN	P S	TBN	

NOT COMPATIBLE
POSSIBLE COMBINATIONS
POSSIBLE BUT NEEDS CARE DUE TO PHYSICAL AND CHEMICAL REQUIREMENTS

HTHS = HIGH TEMPERATURE HIGH SHEAR VISCOSITY
 SA = SULPHATED ASH
 TBN = TOTAL BASE NUMBER
 NV = NOACK VOLATILITY
 S = SULPHUR
 PHOS = PHOSPHORUS

This table is only based on chemical and physical requirements of the different ACEA Oil Sequences. Possibility to combine ACEA Oil Sequences also requires that all engine and lab tests requirements for the targeted Sequences are met.

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