

April 2021 edition

Lubricants and special products for heavy-duty commercial vehicles



Eni has developed a complete range of lubricants which guarantee high efficiency, reliability and protection for heavy-duty Diesel commercial vehicles.

The i-Sigma engine lubricant line includes products employing reliable, tried-and-tested formulations as well as leading-edge technologies, suitable for modern engines such as those equipped with exhaust gas after-treatment systems.

In particular, a series of lubricants have been specially formulated to provide better fuel economy, high protection in any weather conditions, respect for the environment and long-lasting performance.

Eni also offers a series of specialized products as transmission oils, greases and coolants which are able to satisfy any additional application requirements.



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Engine oils

The i-Sigma line of lubricants includes:

High performance engine oils designed to meet the highest quality level requested by international bodies (API and ACEA), and having a wide range of manufacturer approvals.



TOP MS - Oils with a low content of sulfated ash, phosphorus and sulfur (Mid SAPS), specifically formulated in order to maintain the efficiency of the modern exhaust gas after-treatment devices.



TOP - Oils with a high content of sulfated ash, phosphorus and sulfur (Full SAPS), specifically formulated for traditional vehicles fitted with less recent exhaust gas after-treatment devices.



High performance engine oils with a high content of sulfated ash, phosphorus and sulfur (Full SAPS). They have a good quality/price ratio.

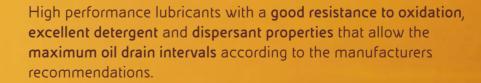


PERFORMANCE - Oils designed to meet the international quality levels (API and ACEA) and having a wide range of manufacturer approvals.

High performance engine oils with a high content of sulfated ash, phosphorus and sulfur (Full SAPS) that guarantee the same quality standards in any application field.



UNIVERSAL - An ideal solution for the lubrication of mixed vehicles fleets comprising both heavy and light duty vehicles powered by gasoline and Diesel engines.







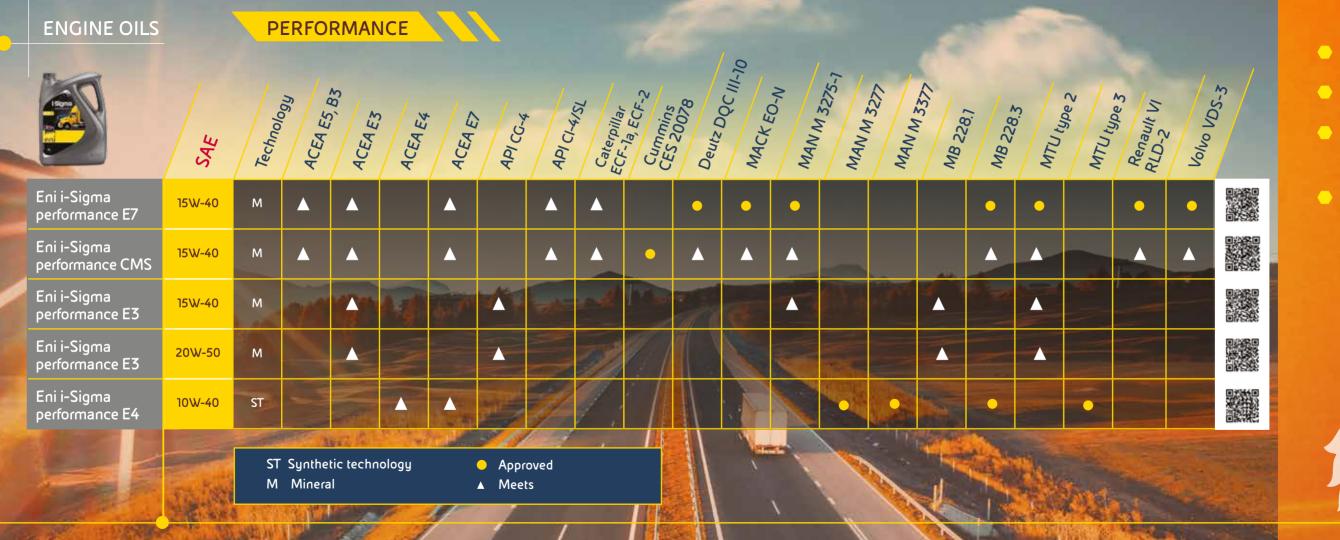
- Mid SAPS
- Excellent performance
- Fuel economy
- ReducedCO₂ emission
- Extended oil drain intervals





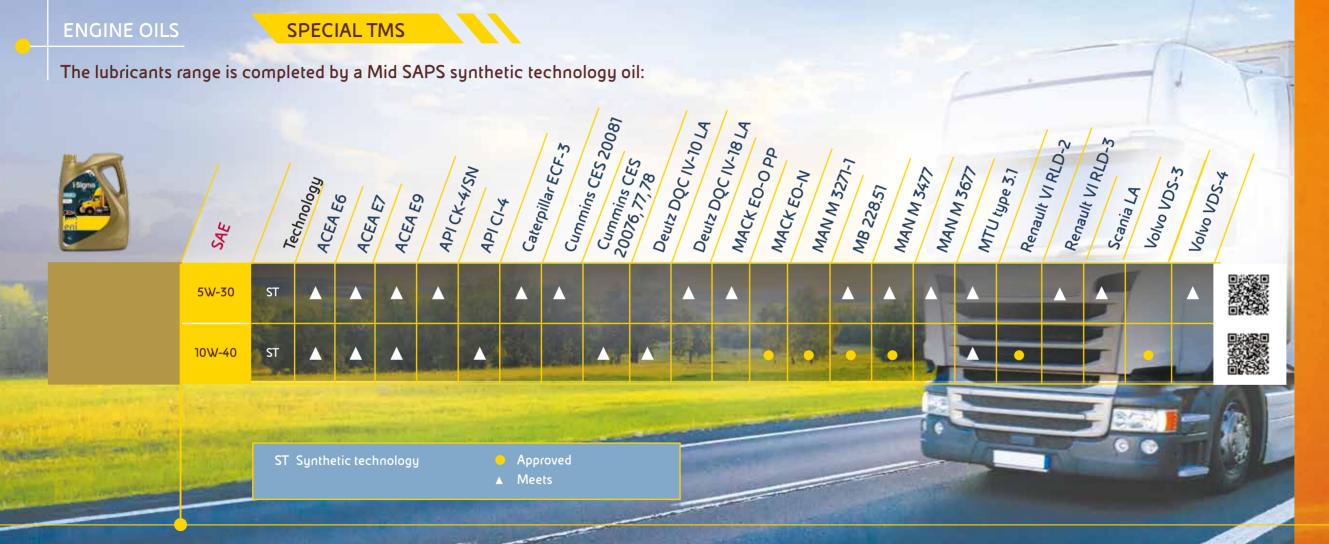
- Full SAPS
- High performance
- Extended oil drain intervals
- Fuel economy





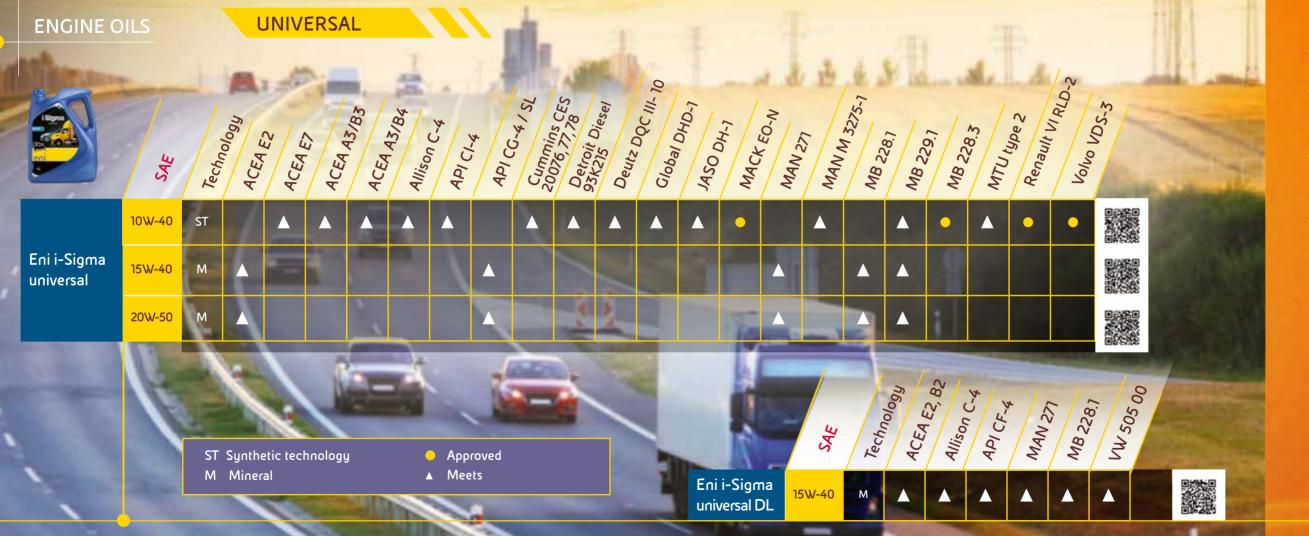
- Full SAPS
- High performance
- Extended oil drain intervals
- Ideal for the most common vehicles





- Mid SAPS
- Good quality/ price ratio
- Extended oil drain intervals
- Maximum reliability





- Full SAPS
- Good quality/ price ratio
- Extended oil drain intervals
- Ideal for mixed fleets







- Full SAPS
- High performance
- Extended oil drain intervals
- Bio-based components from renewable sources



Products for specific markets					Other products					
			SAE	BN (mgKOH/g)	Performance levels			100		
	Engine lubricants especially formulated	Eni i-Sigma		ACEA E7, E5, E3, B3 API CI-4/SL MAN M 3275-1			SAE	Performance levels		
	to meet specific needs:	performance CI HBN	15W-40	12,3	MB 228.3 MTU type 2 Volvo VDS-3			30	API CF/SJ Allison C-3 MIL-L-2104D MIL-L-46152C	
	 vehicles requiring specific international and manufacturers performance levels 	Eni i-Sigma performance CH HBN	15W-40	12,3	ACEA E7, E5, E3, B3 API CH-4/SL MAN M 3275-1 MB 228.3 MTU type 2		Eni i-Sigma	40	API CF/SJ MIL-L-2104D MIL-L-46152C	
	high sulphur content fuels				Volvo VDS-3 ACEA E2, B2		monograde	50	API CF/SJ MIL-L-2104D MIL-L-46152C	
	demanding weather conditions	Eni i-Sigma performance CF HBN	15W-40	12,0	API CF-4/SG MAN M 271 MB 228.1 VW 505 00	MAN M 271			451.55/51	
	Conditions							10W-20	API CF/SJ Allison C-3 MIL-L-2104D	
	For specific needs, assistance, technical or commercial support, visit: oilproducts.eni.com	Eni i-Sigma	10W		API CF/SJ				MIL-L-46152C	
			50	11,5	API CF/S		Eni i-Sigma monograde CC	50	API CC/SC MIL-L-2104B	
			40		API CF/SJ					17

NOT EVERYONE KNOWS THAT

ACEA is the European Automobile Manufacturers' Association.

It defines through laboratory and engine tests the minimum quality levels (specifications) that lubricants must meet to be used in engines. These specifications are reported in the vehicle use and maintenance manuals as a reference for the choice of the lubricant, and are shown on the labels of lubricants to indicate their level of performance. ACEA performance levels for heavy duty Diesel vehicles are identified with the letter "E" and are four: E4, E6, E7, E9.

The image below shows the main differences between these specifications:

	Full SAPS	Mid SAPS
Extended oil drain interval	E4	E6
Mid oil drain interval	E7	E9

WHAT DIFFERENCE IS THERE BETWEEN FULLY SYNTHETIC, SEMI-SYNTHETIC, TOP SYNTHETIC LUBRICANTS, ETC.?

These claims reflect marketing issues rather than a technical content, and are not attributed on the basis of a universally recognized standard. Each manufacturer adopts its own criterion, so the comparison between different products and assessment of suitability for use must be based on the viscosity grade and the performance specifications.

However, this table provides only a general overview, and it is necessary to refer to the vehicle maintenance manual, considering load, road and climatic conditions.

WHAT DOES SAPS MEAN?

SAPS stands for Sulphated Ash, Phosphorus and Sulphur.

WHY HAVE MID SAPS LUBRICANTS BEEN DEVELOPED?

The entry into force of progressively more stringent emission standards has obliged the engine manufacturers to adopt sophisticated exhaust gas after-treatment systems. These systems are sensitive also to the composition of the lubricant that passes in the combustion chamber, as it can give rise to undesirable phenomena such as filter clogging or interference in the process of catalytic conversion of contaminants. The consequences are a loss of engine power with an increase of fuel consumption. or an increase of emission of pollutants from the exhaust pipe. Mid SAPS lubricants are specificallu formulated to reduce the negative impact of the lubricant on these systems, quaranteeing their maximum performance.

IS IT POSSIBLE TO ADVISE A FULL SAPS PRODUCT WHERE A MID SAPS PRODUCT IS REOUIRED?

No, because a lubricant with a high SAPS content might damage a modern exhaust gas after-treatment system.

HOW OFTEN SHOULD YOU CHANGE THE ENGINE OIL?

Oil change interval depends on lubricant, performance specifications and operating conditions. It is therefore good practice to follow the use and maintenance vehicle manual or the indications of the on-board system.

HOW SHOULD YOU CHOOSE THE RIGHT LUBRICANT FOR YOUR VEHICLE?

Consult the Lubefinder tool on the OilProducts website and available at following link: http://eni-ita.lubricantadvisor.com

WHAT IS THE IMPORTANCE OF THE BASE NUMBER (BN)?

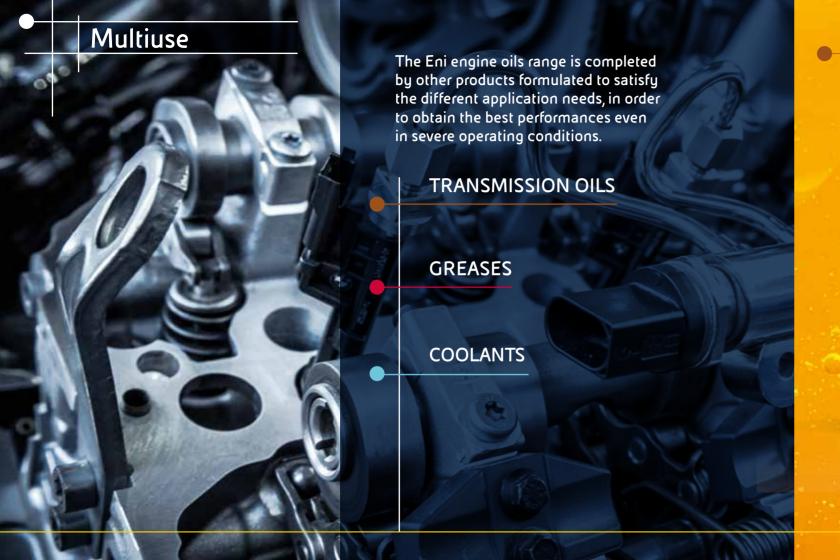
The Base Number is one of the most important parameter to evaluate the quality of a lubricant, especially in the long term. It measures the capacity of a lubricant to neutralize the acids that are produced during the combustion process, or arising from the high temperature oxidation of the lubricant itself. These phenomena are more relevant in those countries where motor fuels have a high sulfur content. In these cases, Eni offers lubricants with high BN, named Eni i-Sigma performance HBN and Eni i-Sigma monograde HBN.

WHY IN GAS FUELED VEHICLES IT IS RECOMMENDED THE USE OF LOW ASH PRODUCTS (MID SAPS)?

An engine fueled by compressed or liquefied natural gas may show a problem of pre-ignition, due to the formation in the combustion chamber of metallic deposits resulting from lubricant additives. Mid SAPS lubricants are able to prevent this phenomenon.







TRANSMISSION OILS

MANUAL

A range of products specifically designed to satisfy the most important application needs of heavy duty gearboxes and differentials, either manual or automatic. They meet the highest performance level requested by the international bodies (API and ACEA) and heavy duty vehicle manufacturers.



(*) Approved

Eni Rotra LSX 75W-90

API GL-4, GL-5

API MT-1

SAE J 2360

MAN 341 type Z2(*)

MAN 342 type S1(*)

MB-Approval 235.8(*)

Scania STO 2 : 0 A FS

Scania STO 2

Volvo 97312

MACK GO-J

ZF TE-ML 02B, 05A, 12L, 12N, 16F

17B, 19C, 21A(*)

Eni Rotra MP 75W-90

API GL-4 + GL-5

API MT-1

SAE J2360

MAN 341 tupe Z2

MAN 342 type M3

Scania STO 1:0

(*) ZF TE-ML 02B, 05A,

12L, 12N

(*) ZF TE-ML 16B, 17B,

19C, 21A

TRANSMISSION OILS

MANUAL

Eni Rotra MP 80W-90

API GL-5

MIL-L-2105D

MAN 342 type M1

MAN 342 type M2^(*)

ZF TE-ML 05A, 12E(*)

ZF TE-ML 16B, 17B, 19B, 21A(*)

ZF TE-ML 07A, 08

(*) Approved

Eni Rotra MP/S 85W-90 API GL-5

MIL-L-2105D ZF TE-ML 05A, 12E, 16D, 21A^(*) ZF TE-ML 07A, 08, 16C Volvo 1273.10

Eni Rotra MP 85W-140

API GL-5 MIL-L-2105 D ZF TE-ML 05A, 12E ZF TE-ML 16D, 21A^(*) ZF TE-ML 07A, 08, 16D Volvo 1273.10 Eni Rotra MP DB 85W-90

API GL-5 MB 235.0 MIL-L-2105D

Eni Rotra Truck gear 75W-140

API GL-4, GL-5, MT-1 MIL-PRF-2105 E IVECO DAF MACK GO-J SAE J2360 Renault Scania STO 1: 0 ZF TE-ML 05B, 07A.

12B, 16F, 21B

Eni Rotra Truck gear 85W-140

API GL-4, GL-5, MT-1 ZF TE-ML 2B, 5A, 7A, 12E, 16D, 21A Scania STO 1 : 0 SAE J2360 Eni Rotra Multigear 75W-80

API GL-4

" ZF TE-ML 01L, 02L, 16K

ZF TE-ML 08, 13, 24A

" MAN 341 type Z4

DAF

(*) Volvo 97307

IVECO

Renault Note Technique B0032/2

Annex 3
Eaton PS-321

Eni Rotra HY DB Synth 75W-90

API GL-4
MB-Approval 235.11
ZF TE-ML 08

Eni Rotra HY DB 80W

API GL-4

ZF TE-ML 2B, 17A

(*) Approved

(*) MB-Approval 235.1

TRANSMISSION OILS

AUTOMATIC

Eni Rotra ATF VI

GM DEXRON VI Ford MERCON LV JASO 1-A



Eni Rotra ATF III

GM DEXRON III H
Ford MERCON
Allison C-4 (Suitable for use)
Aliison TES 389 (Suitable for use)

Eni Rotra ATF IID

GM DEXRON IID
Ford MERCON
Allison C-4
Caterpillar TO-2
MAN 339 type VI(*)
MAN 339 type ZI
MB 236.6
Voith H55.6335.xx
ZF TE-ML 05L, 09, 17C
ZF TE-ML 04D, 11A, 14A(*)

(*) Approved

Eni Rotra ATF Multi

GM DEXRON IIIH BMW LT 71141 JASO 1-A AISIN JWS 3309 Toyota T-IV NISSAN MATIC D, J, K CHRYSLER ATF+3/+4 MB-Approval 236.9 (*) Ford MERCON/MERCON V ZF TE-ML 04D, 14B, 20B, 25B (*) MAN 339 type V1 MAN 339 type Z2 MAN 339 type Z11 Voith H55.6335 (G607) level HONDA ATF Z-1 Mazda ATF M-III Huundai/KIA SP-II, SP-III VW/Audi G 052 025 (09M), G 052 990 (09A) Volvo 97340, Volvo 97341

For specific needs, assistance, technical or commercial support, visit: oilproducts.eni.com

If necessary, the full Eni range of lubricants and special products is available to offer the right solution to specific needs:

	SAE	Performance levels	
Eni Rotra GL	80W-90	API GL-5 MIL-L-2105D	
Eni Rotra GL	85W-140	API GL-5 MIL-L-2105D	
Eni Rotra HY	90	API GL-4	
Eni Rotra HY	140	API GL-4	
Eni Rotra HY	80W-90	API GL-4 ZF TE-ML 02A, 16A, 17A, 19A	
Eni Rotra	80W-90	API GL-3	
Eni Rotra	85W-140	API GL-3	
Eni Rotra	90	API GL-1	
Eni Rotra	140	API GL-1	

GREASES

Eni offers a wide range of greases meeting all application needs.

Greases for special applications at extremely low temperatures and heavy loads are also available.

Eni Grease 15

NLGI: 1

Thickener: Calcium Anhydrous

Colour: Green

ISO 12924 L-XBBGA 1 DIN 51825 K 1G -20 ASTM D 4950 LA

High adhesiveness and resistance to vibrations.

Thanks to its water repellent and anti-wear properties it is suitable for use in wet environments and in contact with water.

Ideal for the lubrication of vehicle chassis.

Eni Grease 16

NLGI: 2

Thickener: Calcium Anhydrous Colour: Green

ISO 12924 L-XBBGA 2 DIN 51825 K 2G -20 ASTM D 4950 LA

High adhesiveness and resistance to vibrations.

Thanks to its water repellent and anti-wear properties it is suitable for use in wet environments and in contact with water.

Ideal for the lubrication of vehicle chassis.

Eni Grease 30

NLGI: 2 Thickener: Lithium Colour: Yellow Brown

ASTM D 4950 GB ISO 12924 L-XBCHA 2 DIN 51825 K 2K -20 MB-Approval 267.0(*)

'Multi-purpose' grease for bearings, wheel hubs, water pump, dynamo, starter motor, chassis, etc.

High dropping point useful for parts exposed to high temperatures.

Strong mechanical and chemical stability even after intense and prolonged mechanical stresses.

Thanks to its water repellent and anti-wear properties it is suitable for use in wet environments and in contact with water.

Eni MP grease

NLGI: 2 Thickener: Lithium Colour: Dark Brown

ASTM D 4950 LB ASTM D 4950 GB ISO 12924 L-XBCHB 2 DIN 51825 KP 2K -20

Contains E.P. additives (Extreme Pressure).

Available in cartridges packages. It is suitable for use in a wide range of industrial and automotive applications.

(*) Approved

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COOLANTS

Special ethylene glycol-based coolants, formulated without Nitrites,
Amines and Phosphates (N.A.P. free) recommended for an outstanding protection
of the cooling circuits in modern heavy duty vehicles. Their special formulations guarantee
heat exchange efficiency in the radiator, ensuring safe engine operation even
in the most severe operating conditions.

Eni Antifreeze Spezial

Concentrated product. Formulated with organic corrosion inhibitors (OAT technology)

ASTM D 3306 CUNA NC 956-16 (ed. 12) MAN 324 type SNF MB 325.3 Ford WSS-M97B44-D VW TL 774D / F (G12/G12+) AFNOR NFR 15-601 JIS K 2234:2006

Eni Antifreeze Extra

Concentrated product.
Formulated with inorganic inhibitors

ASTM D 3306 CUNA NC 956-16 (ed. '12) AFNOR NFR 15-601 JIS K 2234:2006

Eni Antifreeze Plus

Concentrated product. Formulated with organic acids and mineral inhibitors (hybrid technology)

ASTM D 3306 CUNA NC 956-16 (ed. 12) MAN 324 type NF VW TL 774C MB 325.0 JIS K 2234:2006

Eni Antifreeze Ready

Prediluted, ready-to-use product. Formulated with organic acids and mineral inhibitors (hybrid technology).

ASTM D 3306 CUNA NC 956-16 (ed. 12)



Eni Antifreeze Spezial 12++

Concentrated product. Formulated with organic acids and silicate inhibitors (Si-OAT).

AS 2108-2004

(*) Approved

SAE J1034 O-Norm V 5123 CUNA NC 956-16 (ed. 12) JIS K 2234:2006 SANS 1251:2005 China GB 29743-2013 BS 6580:2010 VW/Audi/Seat/Skoda/Lamborghini/ Bentley/Bugatti TL 774-G Porsche from MY 1996 (*) MB-Approval 325.5 (*) MB-Approval 325.6 (*) MAN 324 type Si-OAT Cummins CES 14603 MTU MTL 5048 Liebherr Minimum LH-01-COL3A Deutz DQC CC-14 IRIZAR, S. COOP from Sep. 2016 **ASTM D 3306 ASTM D 4985**



AdBlue®

AdBlue® is an aqueous solution of urea (32,5% on average) that is used to reduce the level of NOx tailpipe emissions in Diesel engines equipped with SCR (Selective Catalytic Reduction) technology, employed by the major European truck makers.

It is a transparent, odorless liquid whose characteristics are regulated at European level by the ISO 22241 standard.

AdBlue® is not a fuel, as it is not injected into the combustion chamber, and is therefore not subject to excise tax or other duties.

It is not classified as harmful to human health or the environment.

It is not flammable or explosive.

The AdBlue® trademark is owned by the German Association of the Automotive Industry (VDA) which guarantees that the quality standards are maintained in accordance with the specifications of ISO 22241. Check that the product you buy for your vehicles has the AdBlue® registered trademark on the label. If you buy AdBlue® at Eni service stations, you can be sure you have purchased synthetic quality AdBlue® that is fully compliant with the specifications established for its use with SCR technology.

The use of AdBlue® ensures that exhaust NOx emissions remain below the limits established by law.

The presence of AdBlue® at our service stations demonstrates our commitment to improving the quality of the services and products offered, to meet the needs of all engines and all vehicles while respecting environmental issues.



RESEARCH CENTRE

The Eni Research Centre in San Donato Milanese has state-of-the-art laboratories featuring advanced equipment for studying, developing and fully identifying the characteristics of raw materials for high performance lubricants.



The Eni Research Centre complies with the UNI EN ISO 9001 standard in relation to the activities of "Applied research, technical support and laboratory analyses in the energy sector: lubricants, additives, bitumens, special products for motor vehicles and for industrial use" and "Production on pilot systems of lubricants, propellants and fuels" (sector EA 34,35 - certificate no. 676).

QUALITY

The long time established Eni Refining & Marketing Quality Management System obtained the updated UNI EN ISO 9001:2015 certification about commercial and industrial processes covering the whole lubricant and additives industrial cycle and including project design, process development, supplying activities, production operation, blending, packaging and client delivery.





OUR COMMITMENT TO ENSURE CUSTOMER SATISFACTION

The Eni Refining & Marketing organization is able to support customers for any need regarding lubrication oils and to consolidate a strong relationship based on integrated technical support services.



SALES ASSISTANCE

The Eni sales network, present on the territory, provides information on the range of lubricating oils and assists customers in all the product procurement phases.



TECHNICAL ASSISTANCE

Eni technicians are available to help solving any operative issue and can provide their assistance to arrange lubrication guides, to follow the oil charge monitoring and to offer training courses regarding lubrication.



I ABORATORU ASSISTANCI

The Eni laboratories give their full assistance to customers for the oil charge control by periodic monitoring in order to guarantee the best operating efficiency of lubricated machineries.







Eni S.p.A. - Refining & Marketing

Viale Giorgio Ribotta, 51 00144 Rome-Italy Tel. 0039 06 59881 Affix distributor's stamp here