

#### **Eni Automotive Lubricants**

Performance and protection run on the same car



April 2021 edition

Automotive lubricants and special products



Eni's research has developed a complete range of products capable of providing high performance, reliability and engine protection for cars and light commercial vehicles.

The range is divided into different lines that include products specifically formulated to meet the various lubrication needs of all vehicles and is able to provide the right solution to the needs of each user.

In addition to engine oils, to meet further application requirements, Eni offers a series of specialized products such as transmission oils, coolants, brake fluids, greases and car care products.



#### Index

😑 • Engine oils	2
• Transmission oils	
Coolants	26
Brake fluids	28
<b>₩</b> • Greases	
• Car care and cleaning	



## Engine oils

The wide range of Eni's passenger car lubricants comprises products specially formulated to meet the various lubrication needs of engines, in accordance with the requirements set by the manufacturers.





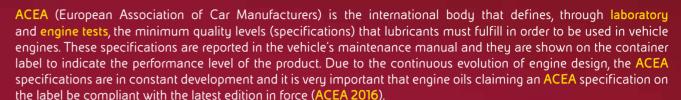






				Section	
	Eni i-Sint	Eni i-Sint tech	Eni i-Sint professional	Eni i-Base	Eni i-Base professional
FEATURES	High-performance oils for gasoline or diesel cars, with or without particulate filters. They meet the main performance specifications requested by the manufacturers.	High-performance oils, specifically designed to meet performance specifications requested by individual manufacturers.	Oils dedicated to professional operators, such as garage owners and auto parts dealers, with an excellent price/quality ratio.	Mineral oils dedicated to traditional cars, meeting the main performance specifications.	Mineral oils dedicated to traditional cars, meeting API standards.
TECHNOLOGY	Synthetic technology and Top synthetic	Synthetic technology and Top synthetic	Synthetic technology	Mineral	Mineral





There are two ACEA performance classes dedicated to light duty vehicles and they are identified with the letters A/B and C. Class A/B covers oils for traditional gasoline and diesel engines; class C defines the requirements for "catalyst compatible" engine oils for gasoline or diesel engines with exhaust gas after treatment systems. Within the various classes there is a further distinction based on the HTHS viscosity (High Temperature High Shear) value, which gives an important indication on the behaviour of the oil in severe operating conditions.

The table below shows an overview of the main differences between these specifications:

		LOW/MID SAPS <sup>(*)</sup>	FULL SAPS(*)
HTHS (mPa·s)	>= 2.6 and < 2.9	C5	
	≥ 2.9	C1 C2	A5/B5(**)
	≥ 3.5	C3 C4	A3/B3 A3/B4

<sup>(\*)</sup> For further information see "NOT EVERYBODY KNOWS THAT."



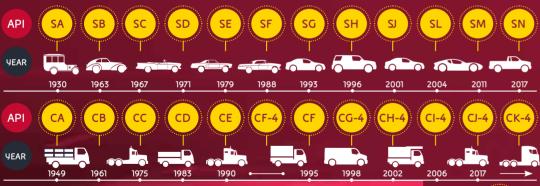
<sup>(\*\*)</sup> A5/B5 category can be combined with Low/Mid SAPS categories.



### WHAT ARE THE API SPECIFICATIONS?

API (American Petroleum Institute) defines the quality standards for engine oils using two service categories for gasoline ("S") and diesel ("C and F") engines respectively.

- the two letters are followed by a further progressive indication according to the updates
- products meeting each level are officially suitable where previous levels are required
- new API FA-4 specification for Diesel engines is not backward compatible with the previous ones.







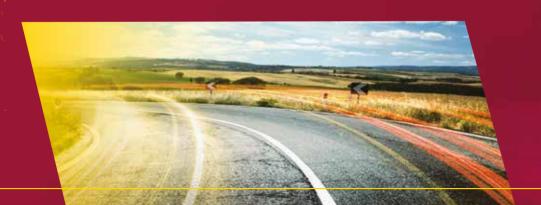
### Eni i-Sint

Eni i-Sint is the line of high performance lubricants suitable for lubrication of most of circulating cars.

Thanks to the careful selection of raw materials and an accurate balancing of all the components, the Eni i-Sint line ensures high reliability and smooth drive in all operating conditions, for all types of cars, from compact to sport cars, with gasoline or diesel engines.

All Eni i-Sint lubricants meet the severe qualification standards required by international bodies (API, ACEA, ILSAC) and are officially approved by the main engine manufacturers.

In addition to tried-and-tested technology products, the Eni i-Sint range includes lubricants with modern formulations specifically suitable for cars equipped with particulate filters (Mid SAPS products) and very fluid oils whose use, if allowed by the manufacturer, offers a significant reduction in the fuel consumption (fuel economy).



#### Eni i-Sint MID SAPS



#### 5W-30

top synthetic



ACEA C3 API SN BMW LL-04(\*) MB-Approval 229.51(\*) Porsche C30(\*) VW 504 00, 507 00<sup>(\*)</sup>

#### MS 5W-30

synthetic technology



ACEA C3 MB 229.31 Opel Vauxhall OV0401547 BMW LL-04 (\*) MB-Approval 229.52 (\*) MB-Approval 229.51 (\*) VW 502 00.505 00.505 01 (Suitable for use)

API SN PLUS

ACEA C5

#### MS 5W-40

synthetic technology



ACEA C3 API SN PLUS MB 229.31 BMW LL-04(\*) MB-Approval 229.52 MB-Approval 229.51 VW 505 00, 505 01 (Suitable for use)

#### FE 5W-30

synthetic technology



ACEA C2 API SN PLUS ILSAC GF-5 BMW LL-12 FE(\*)

FIAT 9.55535 S1

(Suitable for use)



XEF OW-20



API SN PLUS RC Ford WSS-M2C947-B1 ILSAC GF-5 JLR.03.5006-16 Opel Vauxhall OV0401547 MB-Approval 229.71(\*) BMW LL-17 FE+(\*) meets FIAT 9.55535-GSX meets Chrysler MS-12145



#### WHAT IS THE DIFFERENCE BETWEEN "SYNTHETIC TECHNOLOGY" AND "TOP SYNTHETIC" SHOWN IN THE ENI I-SINT LUBRICANT LABELS?

The difference is in the technology of the base oils used. In top synthetic products, we use synthetic high-quality base stocks, which make it possible to formulate even better top performance lubricants. It is important to point out that these definitions offer additional information but this must not constrain the consumer's choice: the suitability for the use of a lubricant must always be based on its SAE viscosity grade and performance specifications.



## Eni i-Sint FULL SAPS



0W-20

synthetic technology



API SN RC ILSAC GF-5



top synthetic

BMW LL-01 Ford WSS-M2C937-A MB-Approval 229.5 MB 226.5 Renault RN 0700, 0710 Porsche A40<sup>(\*)</sup> VW 502 00, 505 00<sup>(\*)</sup>

ACEA A3/B4

5W-40



ACEA A3/B4 API SN

MB 229.5 PSA B71 2296 Renault RN 0700.0710 BMW LL-01(\*) MB-Approval 229.3(\*) VW 502 00, 505 00<sup>(\*)</sup>

10W-40

ACEA A3/B4

API SN MB-Approval 229.3(\*)

Designed

for specific engine solutions



0W-30 VW 503 00, 506 00, 506 01(\*)



VW 508 00, 509 00<sup>(\*)</sup> top synthetic



VW 504 00, 507 00<sup>(\*)</sup> ACEA C3 top synthetic



ACEA C5 synthetic technology

MAZDA



Volvo RBS0-2AE

high performance lubricants, specifically developed to meet the individual needs of

Eni i-Sint tech

Formulated with very high quality base oils and highly innovative additives, Eni i-Sint tech lubricants are the technological answer to the specific requirements of manufacturers.

required by the vehicle

Eni i-Sint tech is the line generation some of world's leading car manufacturers.

> PSA B71 2312(\*) P 0W-30 top synthetic



ACEA C2

PSA



synthetic technology

PSA B71 2290(\* ACEA C2



ACEA C3



R 5W-30

RENAULT

Renault RN0720(\*) ACEA C3, C4 synthetic technology MB 229.51, 226.51



15W-30

ynthetic technology ACEA C1

Ford WSS-M2C934-B



FORD

In order to protect the environment and people's health, the application of strict limits to car manufacturers regarding CO<sub>2</sub> emissions from exhaust is spreading worldwide. To comply with these restrictions, vehicle manufacturers have developed innovative and particular engine solutions and they have improved the efficiency of exhaust gas aftertreatment systems. At the same time, lubricant manufacturers have developed fluids with peculiar characteristics, formulated ad hoc to meet the particular performance specifications

ECO F 5W-20

synthetic technology



Ford WSS-M2C948-B(\*) API SN ACEA C5 JLR.03.5004



Ford WSS-M2C950-A F 0W-30 ACEA C2 top synthetic

Fiat 9.55535-DS1 (suitable for use) Fiat 9.55535-GS1

(suitable for use)



ACEA A5/B5 synthetic technology API SL/CF



Renault RN 0700

Ford WSS-M2C913-D(\*)





### Eni i-Sint BIO tech

Ultra fluid top **synthetic lubricant** for gasoline or hybrid cars. Thanks to the special additives and the use of **bio-esters**, it is a lubricant that offers high performance in terms of fuel economy compared to the traditional **SAE 0W-20** products.

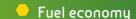
It also meets the stringent requirements of API SN PLUS RC, which requires passing the LSPI test (Low Speed Pre Ignition).



API SN PLUS RC ILSAC GF-5







- High performance
- For latest generation engines



#### WHAT IS LSPI?

LSPI is an abnormal combustion event in which the fuel-air mixture ignites before the intended moment.
LSPI is most common in modern dowsizing tubocharged gasoline engines, with direct fuel injection (GDI). In mild cases, this can cause engine noise, but when it is severe enough, LSPI can cause serious engine damage. The use of Eni i-Sint Bio tech OW-20 helps to avoid this phenomenon.

# Eni i-Sint professional

**Eni i-Sint professional** is the line specifically designed for professional operators, such as garage owners and auto parts dealers.

**Eni i-Sint professional** lubricants meet the performance specifications of the most important European and American Standards bodies, optimizing the price/quality ratio.

For special needs and technical or commercial support contact us through the area of interest available at the link:

https://oilproducts.eni.com/en\_GB/contacts

## Eni i-Sint professional



5W-40 synthetic technology



API SL/CF MB 229.1 VW 501 01, 505 00 ACEA A3/B4 (Suitable for use) 10W-30

API SN/CF

MB 229.51

synthetic technology



10W-40

synthetic technology

VW 501 01, 505 00 ACEA A3/B4 (Suitable for use)

API SN/CF

MB 229.1

0W-50

API SN/CF

synthetic technology



MS 5W-30

synthetic technology





### Eni i-Base

Eni i-Base is a line of mineral lubricants dedicated to traditional engines, characterized by great reliability and compliance with the main performance specifications. The products of the Eni i-Base line guarantee protection and cleanliness of all mechanical components, allowing full compliance with the manufacturer maintenance schedules.



## Eni i-Base professional

Eni i-Base professional is a line of mineral lubricants dedicated to older cars. By meeting the requirements of international API standards, Eni i-Base lubricants ensure protection of the engine against wear and deposits.

15W-40



API SM/CF MB 229.1 VW 501 01, 505 00 ACEA A3/B4-10 (Suitable for use)

20W-50

mineral

API SM/CF MB 229.1 VW 501 01, 505 00 ACEA A3/B4-10 (Suitable for use)





10W-40



mineral

API SL/CF

mineral



L 20W-50

API SL/CF



API SL/CF

## Not everybody knows that



#### WHAT DOES SAPS MEAN?

SAPS stands for Sulphated Ash, Phosphorus and Sulfur



The entry into force of regulations on CO<sub>2</sub> emissions has forced car manufacturers to adopt very sophisticated exhaust gas post-treatment systems such as catalysts and particulate filters. The particulate filters specifically act as traps for all combustion residues, including the lubricant that leaks into the combustion chamber.

The metallic elements of the lubricant, subjected to high temperatures, form solid compounds (the so-called "ashes") that can cause filter clogging with a considerable decrease in the performance of the vehicle. Thanks to their particular composition, Mid SAPS lubricants preserve the functionality of modern exhaust gas post-treatment devices.



## CAN A FULL SAPS LUBRICANT BE USED IF A MID SAPS LUBRICANT IS REQUIRED?

No, because a product with a high SAPS content can damage modern exhaust after-treatment systems. The reverse, on the other hand, does not generate critical issues, although a Mid SAPS product is specifically formulated for vehicles equipped with modern particulate filters.



#### HOW OFTEN SHOULD THE OIL BE CHANGED?

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



#### WHAT IS SAE VISCOSITY GRADE?

SAE viscosity grade classifies lubricants based on their viscosity at low and high temperatures, providing useful information on the choice of oil according to the different climatic conditions and engine operating temperatures (cold starts and high speeds). In multigrade oils it is indicated by two parts separated by a dash:

- left side: refers to the cold viscosity (W = winter).
- right side: refers to the viscosity at high temperatures (100°C).



To find out the exact viscosity values at the various temperatures, refer to the SAE J300 table.



#### WHAT IS HTHS VISCOSITY?

Inside an engine in severe operating conditions (high temperatures, high revs and high loads), the oil present in the mechanical couplings between components is subjected to considerable shear stresses which give rise to a temporary loss of viscosity. The HTHS (High Temperature High Shear) viscosity value provides a measure of the lubricant viscosity under these operating conditions and therefore is indicative of the product's ability to maintain its performance even under stress. The most modern and sophisticated engines are designed to operate with ever more fluid oils (with low HTHS), which allow you to maximize efficiency and therefore achieve fuel savings while ensuring, thanks to the particular choice of formulation, protection and durability in time. It is very important to use low HTHS oils only if prescribed by the manufacturer.



## HOW CAN I CHOOSE THE RIGHT LUBRICANT FOR MY CAR?

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





#### Eni Rotra MP 85W-140

API GL-5 MIL-L-2105D ZF TE-ML 05A, 12E, 16D, 21A<sup>(\*)</sup> ZF TE-ML 07A, 08, 16C Volvo 1273.10

#### Eni Rotra MP DB 85W-90

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

#### Eni Rotra MP/S 85W-90

API GL-5 ZF TE-ML 05C, 12C,16E, 210

#### Eni Rotra GL 80W-90

API GL-5 MIL-L-2105[

#### Eni Rotra GL 85W-140

API GL-5

#### Eni Rotra HY DB Synth 75W-90

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

#### Eni Rotra MP 75W-90

API GL-4 + GL-5 API MT-1 SAE J2360, MAN 341 type Z2 MAN 342 type M3 Scania STO 1 : 0 ZF TE-ML 02B, 05A, 12L, 12N<sup>10</sup> ZF TE-ML 16B, 17B, 19C, 21A<sup>11</sup>)

#### Eni Rotra LSX 75W-90

API GL-4 + GL-5
API MT-1
SAE J 2360
MAN 341 type Z2<sup>(\*)</sup>
MAN 342 type S1<sup>(\*)</sup>
MB-Approval 235.8<sup>(\*)</sup>
Scania STO 2: 0 A FS
Volvo 97312
MACK GO-J
ZF TE-ML 02B, 05A, 12L, 12N, 16F
17B, 19C, 21A<sup>(\*)</sup>

#### Eni Rotra Multigear 75W-80

API GL-4
ZF TE-ML 01L, 02L, 16K<sup>(\*)</sup>
ZF TE-ML 08, 13, 24A
MAN 341 type Z4<sup>(\*)</sup>
DAF, Volvo 97307<sup>(\*)</sup>
IVECO, Renault Note
Technique B0032/2 Annex 3
Eaton PS-321

#### Eni Rotra HY DB 80W

API GL-4, ZF TE-ML 2B, 17A MB-Approval 235.1(\*)

#### Eni Rotra FE 75W-80

API GL-4, MB 235.1 ZF TE-ML 06<u>L</u>, 08, 17A<u>, 24A</u>

#### Eni Rotra FE 75W-90

API GL-4 VW 501 50 (G50

#### Eni Rotra HY 80W-90

API GL-4 ZF TE-ML 02A, 16A, 17A, 19A

#### Eni Rotra HY 90

API GL-4

#### Eni Rotra HY 140

API GL-4

## NOT EVE

#### NOT EVERYBODY KNOWS THAT

For manual transmission oils, the API levels are not progressive, as it is the case for engine oils (S and C series). An API CL-S level lubricant, in fact, is not suitable for use where the manufacturer prescribes a GL-4 level, because its strong-acting additives could damage the materials of the synchronizers. Only some products have a balanced composition that satisfies both the GL-4 and the GL-5 levels, and this information is always reported on the product label. Also the ZF specifications, like API's, do not follow a progressive logic: the alpha-numeric codes of the specifications have each a well-defined meaning.

It is therefore absolutely necessary to refer to the vehicle use and maintenance manual to identify the correct lubricant to be used.

#### (\*)Approved

Eni Rotra

80W-90

Eni Rotra

85W-140



T (

#### Transmission oils - Automatic



#### ATF VI

GM DEXRON VI Ford MERCON LV

#### ATF III

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

#### ATF IID

#### ATF Multi

NISSAN MATIC D.J.K 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 Hyundai/KIA SP-II, SP-III VW/Audi G 052 025 (09M), G 052 990 (09A) Volvo 97340, Volvo 97341

oilproducts.eni.com



## Coolants



**Eni Antifreeze** is the line of special ethylene glycol-based coolants, formulated without Nitrites, Amines and Phosphates (N.A.P. free) and recommended for an outstanding protection of the cooling circuits in modern vehicles.

Propylene glycol based fluids complete the range. For further information, consult: oilproducts.eni.com

#### WHAT IS THE COOLANT USED FOR?

The **coolant circulates** in the cooling systems and transfers heat from hot parts (engine) to cold area (radiator). To avoid damage to the circuit itself, the coolant must both resist freezing at low temperatures and boiling at temperatures over 100 °C. It must also protect metal parts from corrosion, prevent the formation of deposits and inhibit wear (cavitation) of the water pump.



#### Eni Antifreeze

#### Eni Antifreeze Spezial

Concentrated product. Formulated with organic corrosic 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 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 Extra

Concentrated product. Formulated with inorgan inhibitors.

ASTM D 3306 CUNA NC 956-16 (ed. '12) AFNOR NFR 15-601 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 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 tupe Si-OAT(\*) Cummins CES 14603 MTU MTL 5048 Liebherr Minimum LH-01-COL3A Deutz DOC CC-14 IRIZAR, S. COOP from Sep. 2016 **ASTM D 3306 ASTM D 4985** 





#### Eni Brake Fluid



## Brake fluids

Eni Brake Fluid is the range of products specifically developed to ensure the best braking system performance in extreme conditions. Their special formulations prevent the dangerous phenomenon of "vapor lock" and guarantee the perfect efficiency of the braking circuit, thanks to its anti-corrosive properties against metals and chemical compatibility with rubber seals.



#### WHAT IS THE VAPOR LOCK PHENOMENON?

It is the formation of vapor bubbles that can occur inside the brake fluid, when the braking circuit is subjected to continuous stresses which cause a noticeable rise in temperature.

Vapor lock is a very dangerous phenomenon because it can unexpectedly stop an effective braking action.

#### DOT 4

#### HIGH BOILING POINT

- Dry boiling point: >260°C
- Wet boiling point: >160°C
- Viscosity @-40°C: <1500 mm<sup>2</sup>/s

#### SPECIFICATIONS

- FMVSS 116 DOT 4
- SAF | 1704
- ISO 4925/05 (CLASS 4)

#### DOT 4 Plus

#### **VERY HIGH BOILING POINT**

- Dry boiling point: >290°C
- Wet boiling point: >200°C
- iscosity @-40°C: 1000÷ 1700 mm²/s

#### SPECIFICATIONS

- FMVSS 116 DOT
- . SAF L 170
- ISO 4925/05 (CLASS

#### **DOT 5.1**

## HIGH BOILING POINT AND LOW VISCOSITY

- Dry boiling point: >260°C
- Wet boiling point: >180°C
- Viscosity @-40°C: <900 mm²/s</li>

#### SPECIFICATIONS

- FMVSS 116 DOT 5
- SAF 11703
- ISO 4925/05 (CLASS 5-1)





## Greases

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

		Thickener	Specifications
	Eni Grease 15	Calcium	ISO 12924 L-XBBGA 1 DIN 51825 K 1G -20 ASTM D 4950 LA
Lubrication of vehicle chassis	Eni Grease 16	Calcium	ISO 12924 L-XBBGA 2 DIN 51825 K 2G -20 ASTM D 4950 LA
Lubrication of joints, pins, plain and rolling bearings, open gears	Eni MP Grease	Lithium	ASTM D 4950 LB ASTM D 4950 GB ISO 12924 L-XBCHB 2 DIN 51825 KP 2K -20
Lubrication of wheel hub bearings	Eni Grease 33 FD	Bentonite	ASTM D 4950 GA DIN 51825 K 3N -10 ISO 12924 L-XADGA 3
Multi-purpose grease	Eni Grease 30	Lithium	ASTM D 4950 GB ISO 12924 L-XBCHA 2 DIN 51825 K 2K -20 MB-Approval 267.0 <sup>(*)</sup>



## Car care and cleaning

Meeting the driver's needs is our daily mission, that we carry out by offering a complete range of products and services, including car care.

**Ent i-Care** line offers high quality and easy-to-apply products, specifically formulated for interiors and exteriors car care and for special maintenance of the vehicle.



Discover the full product line on oilproducts.eni.com

## Eni at your service

#### RESEARCH CENTRE

i-care

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. In line with the company's marketing strategies, the Eni research involves performing important technical activities in collaboration with important machinery manufacturers, regulatory authorities and several prestigious Italian universities.

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.

#### Laboratory assistance

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