أدنوك
ADNOC

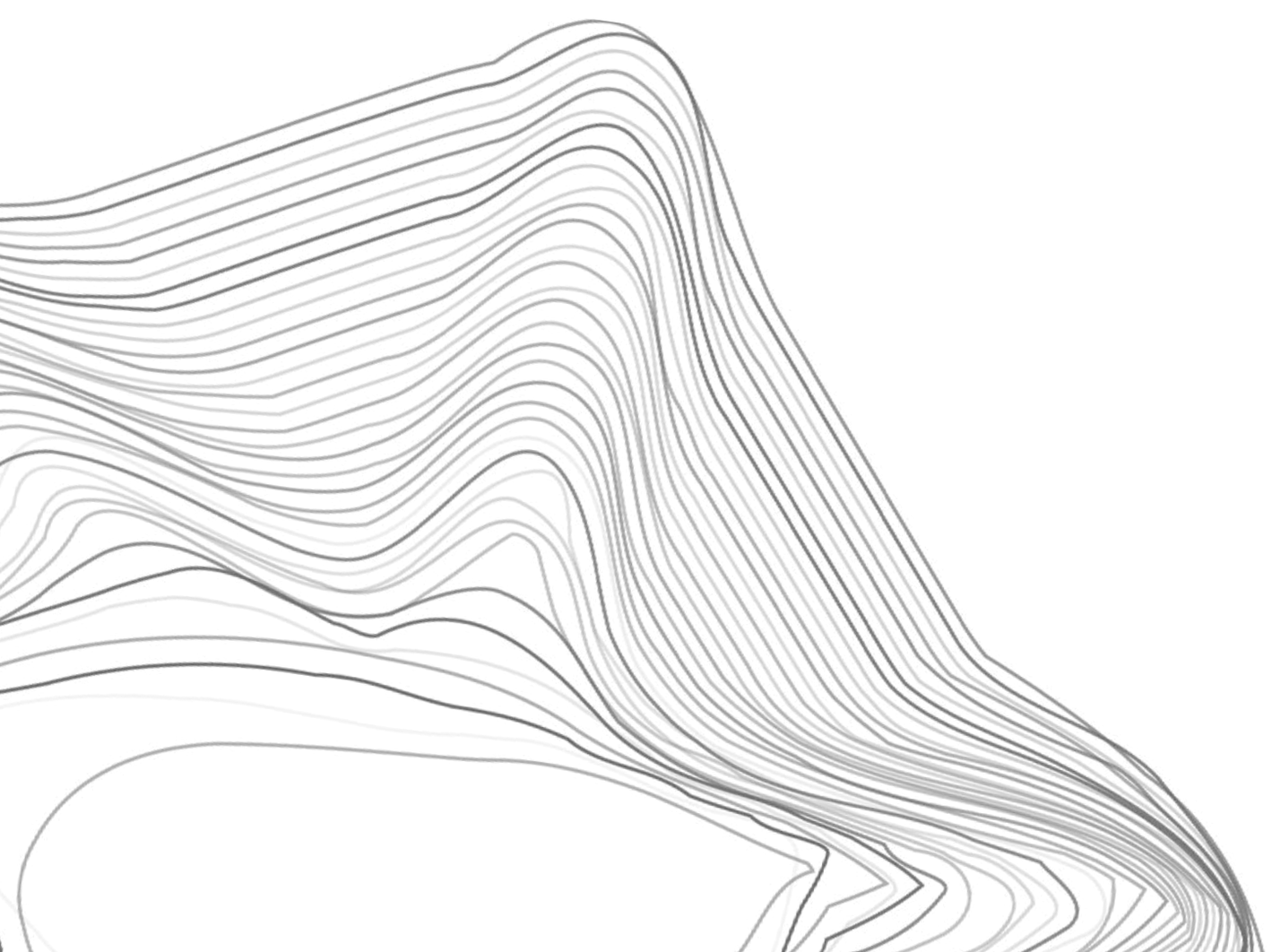
ADNOC LUBRICANTS

PRODUCT CATALOG

This catalog is designed to provide essential information of ADNOC Lubricants product range which meets the latest automotive, industrial and marine application and many others.

Detailed information related to any particular product can be obtained from ADNOC Lubricant sales and technical services teams.

Note:
The physical and chemical properties included in this handbook are typical values of current production. Minor variations are the norm.



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SPECIALTIES

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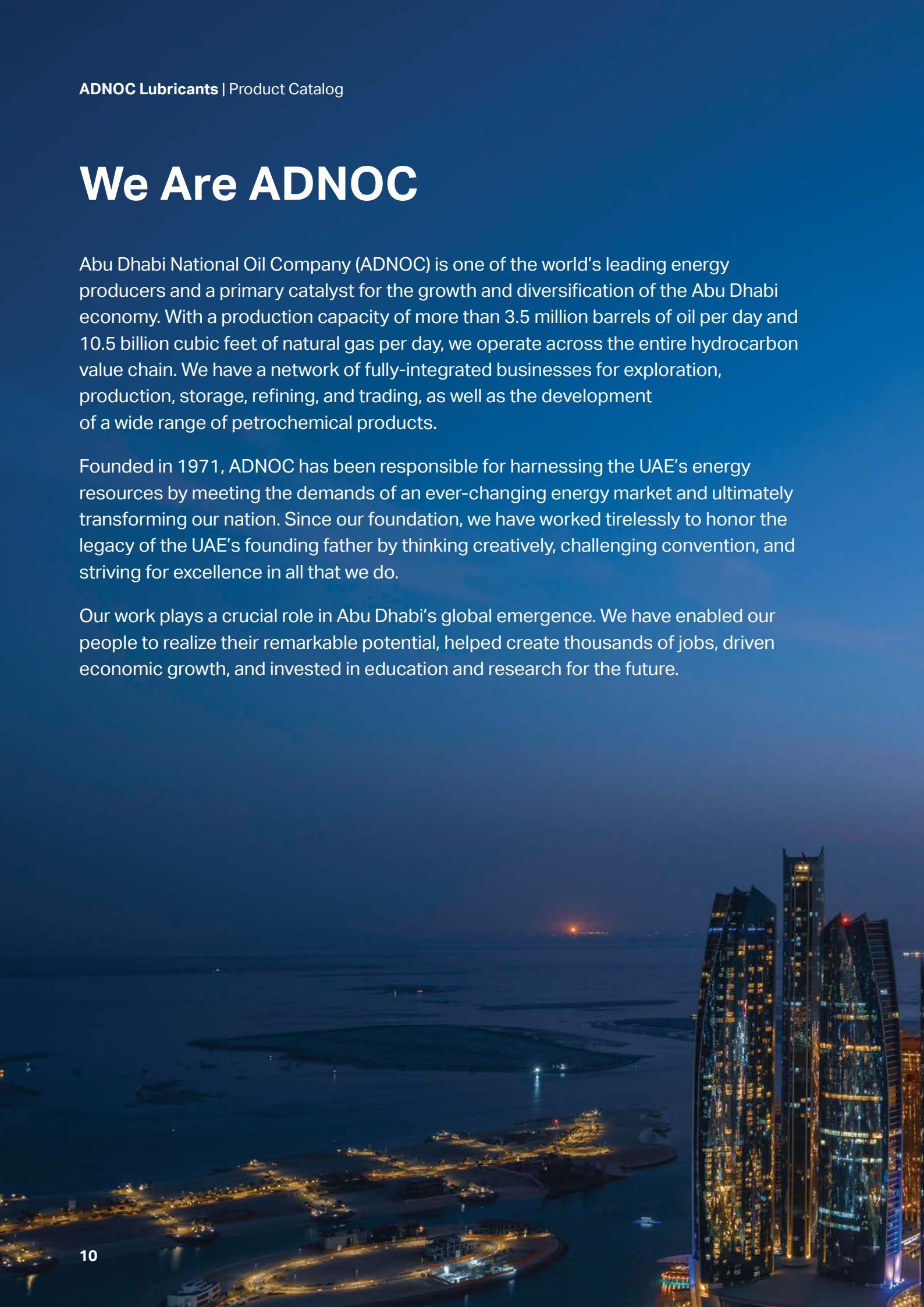
We Are ADNOC

Abu Dhabi National Oil Company (ADNOC) is one of the world's leading energy producers and a primary catalyst for the growth and diversification of the Abu Dhabi economy. With a production capacity of more than 3.5 million barrels of oil per day and 10.5 billion cubic feet of natural gas per day, we operate across the entire hydrocarbon value chain. We have a network of fully-integrated businesses for exploration, production, storage, refining, and trading, as well as the development of a wide range of petrochemical products.

Founded in 1971, ADNOC has been responsible for harnessing the UAE's energy resources by meeting the demands of an ever-changing energy market and ultimately transforming our nation. Since our foundation, we have worked tirelessly to honor the legacy of the UAE's founding father by thinking creatively, challenging convention, and striving for excellence in all that we do.

Our work plays a crucial role in Abu Dhabi's global emergence. We have enabled our people to realize their remarkable potential, helped create thousands of jobs, driven economic growth, and invested in education and research for the future.



Our diverse family comprises more than 50,000 people who originate from the UAE and beyond, with over 100 different nationalities represented across the company. Backed by their unique perspectives and wide-ranging skillsets, our people share a collective responsibility to accelerate progress, both here in the UAE and across the globe.

With an ambitious outlook for the future, we continue to look for innovative ways to maximize the value of our resources, while applying the latest technology, developing mutually-beneficial partnerships, and driving In-Country Value. Together, we are committed to sustaining our positive impact in the communities where we operate and the Abu Dhabi economy for generations to come.

12TH LARGEST OIL PRODUCER IN THE WORLD

50,000+ EMPLOYEES

About ADNOC Distribution

Headquartered in the nation's capital, ADNOC Distribution operate over 460 service stations, over 190 lube change centers and over 330 convenience stores spanning the United Arab Emirates and 12 service stations in the Kingdom of Saudi Arabia (as of 31 December 2021).

Marketing and distributing fuels, lubricants, and supporting services, ADNOC Distribution remains the partner of choice for retail, corporate, government, and aviation customers.

LARGEST NETWORK OF FUEL STATIONS IN UAE

ADNOC Lubricants

ADNOC Lubricants, a division of ADNOC Distribution, was established in 1979 to manufacture market and distribute locally in the UAE and in other international markets. Offering a complete lubrication solution, ADNOC Distribution produces and markets a wide range of premium high quality products covering automotive, industrial, marine and other specialty products, all under the ADNOC Voyager brand.

ADNOC Voyager is manufactured using ADNOC's high quality Group III base oil, ADbase, which is produced by ADNOC Refining using ADNOC's high paraffinic crude oil, Murban, at its state-of-the art Ruwais refinery in the UAE. The high Viscosity Index (VI) of ADbase makes it an ideal lubricant component, ensuring efficiency and fuel economy for high performance engines, whilst meeting ever stringent environmental regulations to ensure products and services exceed customers expectations.

The products themselves are formulated and field tested to meet the highest international specifications and performance standards such as API and ACEA, as well as meeting reputed OEM specifications. These lubricants are blended in a dedicated Lubricant & Grease Manufacturing Plant in Abu Dhabi.

In addition, the team provides a range of technical support services to take care of customer needs and exceed their expectations. This includes:

- Scheduled on–site field visits
- Product recommendation
- Sales and Technical Training
- Equipment condition monitoring programs
- Storage & Handling studies.
- Oil testing monitoring program & laboratory service

ISO 17025 ACCREDITED TESTING LABORATORY

ADNOC Lubricants Blending and Packaging

ADNOC Lubricants Blending and Packaging plant was set up in 1979. It has since undergone a series of developments and expansions to become one of the best in the region. The capacity has been increased more than five times to accommodate the increasing demand for ADNOC lubricants locally and internationally. In 1983, a grease production unit was commissioned, only the second of its kind in the world, to manufacture high quality greases.

- The plant comprises of the following units and facilities:
- State of the art lubricant blending, filling and packaging facility
- Modern grease manufacturing unit
- High tech brake fluid filling unit
- Modern transformer oil dehydration, cleaning and filling unit
- Extensive storage facilities to meet local and export commitments

Our central testing laboratory is equipped with the latest technology and versatile facilities to carry out comprehensive testing and quality control services. Its activities include:

- Testing of blended and imported products
- Routine quality control
- Development and approvals of new products prior to marketing
- Used oil analysis
- Fuel analysis

The plant runs an efficient management system:

- Quality Management System (ISO9001:2015)


أدنوك
ADNOC
VOYAGER
GOLD
FULLY SYNTHETIC
MOTOR OIL
FULLY SYNTHETIC BASE OIL ENSURES
EXTRA LONG OIL DRAIN INTERVAL
EXTRA PROTECTION
4L
API SERVICE SN
SAE 5W-40
SAE 5W-40
API SN
API AN APPROVED, ACEA A3/B4-16, MB 229.5 APPROVED,
VW 502.00 / 505.00 APPROVED, PORSCHE A40 APPROVED,
BMW LL - 01 MEETS, RENAULT RN 700 / 710
MANUFACTURED BY
ADNOC DISTRIBUTION, UAE

ADNOC Voyager

Experience sheer performance and protection in every drop.
With advanced formulation comprised of high quality base oils and balanced additives, ADNOC VOYAGER ensures top performance every time you hit the road.

ADNOC VOYAGER is the brand name of ADNOC Distribution's automotive engine oils used for passenger cars & light trucks, and marine lubricants.

With more than nine products categories and 125 different types and grades, ADNOC VOYAGER exceeds the highest international specifications, set by the American Petroleum Institute (API), the US Military Authorities, the British Defence Force (DEF/STAN) and the European Automobile Manufacturers Association (ACEA), as well as leading car manufacturers.

Why ADNOC Voyager?

Guardianship: VOYAGER goes beyond basic prevention of metal-to-metal contact to form a durable coating around the engine guarding against wear, rust and corrosion.

Endurance: VOYAGER enhances engine endurance through its oxidation stability properties that allow engines to perform at high temperatures, and for extended hours at a time. It also exceeds the performance standards of all major car manufacturers.

Security: VOYAGER bottles feature shroud closure system, making them tamper-proof, easier to stack and with an accurate lube-pouring capability

AUTOMOTIVE

AUTOMOTIVE

ADNOC VOYAGER SJ CP SAE 20W-50

DESCRIPTION

ADNOC Voyager SJ CP is a shear-stable, multigrade engine oil formulated with high quality base oils and carefully selected additives that ensure high oxidation resistance and provide effective protection against wear, corrosion and deposits build up.

APPLICATIONS

ADNOC Voyager SJ CP is recommended for petrol/ gasoline engines of passenger cars, vans, SUVs and light trucks running under both normal and harsh driving conditions. It is suitable for 2001 and older automotive engines of American, Japanese and Korean passenger cars.

BENEFITS

- Good shear stability, keeps viscosity stable
- Protects against rust, wear and sludge formation
- Low oil consumption
- Good engine cleaning power

PERFORMANCE LEVEL

API SJ

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		20W-50	
Density @15°C	kg/L	0.89	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	162.3	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	17.75	ASTM D445
Viscosity Index	-	120	ASTM D2270
CCS Viscosity	cP	8500	ASTM D5293
- CCS Temperature	°C	-15	
Pour Point	°C	-27	ASTM D97
Flash Point, COC	°C	240	ASTM D92
Color	-	RED	Visual

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER SJ SAE 40; 20W-50

DESCRIPTION

ADNOC Voyager SJ is a shear-stable, multigrade engine oil formulated with high quality base oils and carefully selected additives that ensure high oxidation resistance and provide effective protection against wear, corrosion and deposits build up.

APPLICATIONS

ADNOC Voyager SJ is recommended for petrol/ gasoline engines of passenger cars, vans, SUVs and light trucks running under both normal and harsh driving conditions. It is suitable for 2001 and older automotive engines of American, Japanese and Korean passenger cars.

BENEFITS

- Good shear stability, keeps viscosity stable
- Protects against rust, wear and sludge formation
- Low oil consumption
- Good engine cleaning power.

PERFORMANCE LEVEL

API SJ

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE		Test Methods
		40	20W-50	
Density @15°C	kg/L	0.885	0.890	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	135.0	162.3	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	13.75	17.75	ASTM D445
Viscosity Index	-	97	120	ASTM D2270
CCS Viscosity	cP	N/A	8500	ASTM D5293
- CCS Temperature	°C	N/A	-15	
Pour Point	°C	-15	-27	ASTM D97
Flash Point, COC	°C	250	240	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER BRONZE CP SAE 20W-50

DESCRIPTION

ADNOC Voyager Bronze CP is a shear-stable, multigrade engine oil formulated with high quality base oils and carefully selected additives that ensure high oxidation resistance and provide effective protection against wear, corrosion and deposits build up.

APPLICATIONS

ADNOC Voyager Bronze CP is recommended for petrol/gasoline engines of passenger cars, vans, SUVs and light trucks running under both normal and harsh driving conditions. It is suitable for 2004 and older automotive engines of American, Japanese and Korean passenger cars.

BENEFITS

- Excellent oxidation stability at high temperature
- Excellent shear stability, maintains stable viscosity
- Protects against rust, wear and sludge formation
- Low oil consumption
- Three-way catalyst protection
- Good engine cleaning power.

PERFORMANCE LEVEL

API SL

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		20W-50	
Density @15°C	kg/L	0.893	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	151.1	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	17.75	ASTM D445
Viscosity Index	-	130	ASTM D2270
CCS Viscosity	cP	8500	ASTM D5293
- CCS Temperature	°C	-15	
Pour Point	°C	-27	ASTM D97
Flash Point, COC	°C	240	ASTM D92
Color	-	RED	Visual

Minor variations in product typical test data are to be expected in normal manufacturing.

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ADNOC VOYAGER BRONZE SAE 20W-50

DESCRIPTION

ADNOC Voyager Bronze is a shear-stable, multigrade engine oil formulated with high quality base oils and carefully selected additives that ensure high oxidation resistance and provide effective protection against wear, corrosion and deposits build up.

APPLICATIONS

ADNOC Voyager Bronze is recommended for petrol/ gasoline engines of passenger cars, vans, SUVs and light trucks running under both normal and harsh driving conditions. It is suitable for 2004 and older automotive engines of American, Japanese and Korean passenger cars.

BENEFITS

- Excellent oxidation stability at high temperature
- Excellent shear stability, maintains stable viscosity
- Protects against rust, wear and sludge formation
- Low oil consumption
- Three-way catalyst protection
- Good engine cleaning power.

PERFORMANCE LEVEL

API SL

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		20W-50	
Density @15°C	kg/L	0.893	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	151.1	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	17.75	ASTM D445
Viscosity Index	-	130	ASTM D2270
CCS Viscosity	cP	8500	ASTM D5293
- CCS Temperature	°C	-15	
Pour Point	°C	-27	ASTM D97
Flash Point, COC	°C	240	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
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ADNOC VOYAGER BRONZE SPECIAL SAE 10W-30; 15W-40; 20W-50

DESCRIPTION

ADNOC Voyager Bronze Special is a shear-stable, multigrade engine oil formulated with high quality base oils and carefully selected additives that ensure high oxidation resistance and provide effective protection against wear, corrosion and deposits build up.

APPLICATIONS

ADNOC Voyager Bronze Special is recommended for petrol/gasoline engines of passenger cars, vans, SUVs and light trucks running under both normal and harsh driving conditions. It is suitable for 2004 and older automotive engines of American, Japanese and Korean passenger cars..

BENEFITS

- Excellent oxidation stability at high temperature
- Excellent shear stability, maintains stable viscosity
- Protects against rust, wear and sludge formation
- Low oil consumption
- Three-way catalyst protection
- Good engine cleaning power.

PERFORMANCE LEVEL

API SL

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE			Test Methods
		10W-30	15W-40	20W-50	
Density @15°C	kg/L	0.870	0.893	0.893	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	78.15	114.1	151.1	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	11.00	14.50	17.75	ASTM D445
Viscosity Index	-	130	130	130	ASTM D2270
CCS Viscosity	cP	5000	6000	8500	ASTM D5293
- CCS Temperature	°C	-25	-20	-15	
Pour Point	°C	-24	-24	-27	ASTM D97
Flash Point, COC	°C	225	225	240	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER SILVER SAE 10W-30; 10W-40

DESCRIPTION

ADNOC Voyager Silver is a high quality, multigrade, shear-stable, semi-synthetic engine oil designed to provide maximum engine protection against wear, deposits build up, sludge and varnish formation. It provides long service intervals and trouble free operation and keeps engine's performance at its maximum throughout the full oil service life even operating under severe conditions.

APPLICATIONS

ADNOC Voyager Silver is recommended for petrol and diesel engines of passenger cars, vans, light duty trucks and 4WD recreational vehicles. It is suitable for high performance engines with high power density, especially those fitted with turbo chargers and superchargers. It is suitable and exceeds the performance requirements of most European, Japanese and American car manufacturers that require the following specifications. It is not recommend for light duty diesel engines equipped with DPF (Diesel Particulate Filter).

BENEFITS

- Exceptional thermal stability and oxidation resistance
- Low oil consumption and long drain intervals with outstanding protection against wear, rust, corrosion and exceptional engine cleanliness
- Multi-viscosity characteristic ensure rapid oil circulation on start-up the engine
- Easy cold start and ideal. Lubrication at elevated temperatures ensures low oil consumption and cold start protection against wear.
- High Viscosity Index and excellent shear stability results in stable viscosity during operation.

PERFORMANCE LEVEL

ACEA A3/B4

API SN

MB 229.1/229.3

Renault RN0700/0710

VW 501 01 / VW 505 00

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE		Test Methods
		10W-30	10W-40	
Density @15°C	kg/L	0.858	0.860	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	69.17	95.85	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	11.42	14.54	ASTM D445
Viscosity Index	-	159	157	ASTM D2270
CCS Viscosity	cP	4000	6000	ASTM D5293
- CCS Temperature	°C	-25	-25	
Pour Point	°C	-39	-33	ASTM D97
Flash Point, COC	°C	210	230	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER SILVER PLUS ECO
SAE 0W-20; 0W-30; 5W-20; 5W-30; 10W-30

DESCRIPTION

ADNOC Voyager Silver Plus Eco is series of multigrade passenger car engine oils, formulated with high quality full synthetic base oils and carefully selected additives that ensure high oxidation resistance and provide exceptional protection against wear, deposits build up, sludge and varnish formation resulting in long service intervals and trouble free operation. It keeps engine's performance at its maximum throughout the full oil service life even operating under severe conditions. This product series is optimized for gasoline engines to provide fuel economy, three-way catalyst compatibility and mitigates the risk of LSPI (Low Speed Pre-Ignition) occurrence in turbocharged engines with gasoline direct injection (TGDI).

APPLICATIONS

ADNOC Voyager Silver Plus Eco is recommended for low and high power density and high performance petrol/gasoline engines of passenger cars, vans, SUVs and light trucks running under both normal and harsh driving conditions that require one of the available viscosities and API SN Plus and/or ILSAC GF-5 specifications. It is also recommended for direct injection, turbo/super charged gasoline engines (TGDI). It is specifically designed for GM, Ford as well as Japanese and Korean OEMs among others and can be used in old model vehicles due to its backward compatibility., Jaguar and Land Rover vehicles. It is also recommended for old and new other models of American, European, Japanese, Korean and other automobile makers that require the following specifications.

BENEFITS

- Exceptional engine and turbocharge cleanliness
- Exceptional thermal stability and oxidation resistance
- Low oil consumption and long drain intervals with outstanding protection against wear, rust, corrosion, deposits and varnish formation
- Mitigates the risk of LSPI (Low Speed Pre-Ignition) occurrence in turbocharged engines with gasoline direct injection
- Multi-viscosity characteristic ensure rapid oil circulation on engine start-up
- Optimized formulation to provide fuel economy
- Outstanding low temperature fluidity and excellent shear stability provides stable viscosity during operation
- Superior protection of exhaust emission control system, that maximizes three-way catalyst lifespan.

PERFORMANCE LEVEL

Specifications	SAE				
	0W-20	0W-30	5W-20	5W-30	10W-30
API SN+/Resource Conserving	X	X	X	X	X
API SN	X	X	X	X	X
ILSAC GF-5	X	X	X	X	X
Chrysler MS-6395	X		X	X	X
Ford WSS-M2C945-A1/B1			X		
Ford WSS-M2C946-A1/B1				X	
Ford WSS-M2C947-A1/B1	X				
GM dexos1 Generation 2	X			X	

ADNOC VOYAGER SILVER PLUS ECO
SAE 0W-20; 0W-30; 5W-20; 5W-30; 10W-30

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE					Test Methods
		0W-20	0W-30	5W-20	5W-30	10W-60	
Density @15°C	kg/L	0.844	0.850	0.845	0.846	0.854	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	45.00	60.00	48.00	65.00	73.40	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	8.450	10.80	8.500	10.63	11.23	ASTM D445
Viscosity Index	-	167	173	155	154	144	ASTM D2270
CCS Viscosity	cP	5000	5700	4000	4400	5800	ASTM D5293
- CCS Temperature	°C	-35	-35	-30	-30	-25	
Pour Point	°C	-45	-42	-42	-39	-36	ASTM D97
Flash Point, COC	°C	225	215	225	230	215	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER GOLD RL SAE 5W-20; 5W-30

DESCRIPTION

ADNOC Voyager Gold RL is a top of the range, multigrade, shear-stable, formulated with high quality full synthetic base oils and latest generation additives designed to provide maximum engine protection against wear, deposits build up, sludge and varnish formation. It provides long service intervals and trouble free operation and keeps engine's performance at its maximum throughout the full oil service life even operating under severe conditions.

APPLICATIONS

ADNOC Voyager Gold RL is recommended for petrol and diesel engines of passenger cars, vans, light duty trucks and 4WD recreational vehicles. It is suitable for high performance engines with high power density, especially those fitted with turbo chargers and superchargers. It can be used in modern and old models of American, European, Japanese, Korean and other automobile makers that require the following specifications. It is not recommend for light duty diesel engines equipped with DPF (Diesel Particulate Filter).

BENEFITS

- Exceptional thermal stability and oxidation resistance
- Low oil consumption and long drain intervals with outstanding protection against wear, rust, corrosion and exceptional engine cleanliness
- Multi-viscosity characteristic ensure rapid oil circulation on start-up the engine
- Outstanding low temperature fluidity, excellent shear stability and stable viscosity during operation
- Strong oil film minimizes metal to metal contact
- Superior protection of exhaust emission control system, that maximizes three-way catalyst lifespan.

PERFORMANCE LEVEL

Specifications	SAE	
	5W-20	5W-30
ACEA A1/B1	X	
ACEA A5/B5		X
API SL		X
API SN		X
Ford WSS-M2C913-C/D		X
Ford WSS-M2C925-B	X	
Jaguar/Land Rover STJLR.03.5003		X
Jaguar/Land Rover STJLR.03.5004	X	
Renault RN0700		X

ADNOC VOYAGER GOLD RL
SAE 5W-20; 5W-30

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE		Test Methods
		5W-20	5W-30	
Density @15°C	kg/L	0.845	0.855	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	46.00	61.00	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	8.500	11.00	ASTM D445
Viscosity Index	-	172	175	ASTM D2270
CCS Viscosity	cP	4400	4600	ASTM D5293
- CCS Temperature	°C	-30	-30	
Pour Point	°C	-42	-39	ASTM D97
Flash Point, COC	°C	205	230	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER GOLD
SAE 5W-30; 0W-40; 5W-40

DESCRIPTION

ADNOC Voyager Gold is a top of the range, multigrade, shear-stable, formulated with high quality full synthetic base oils and latest generation additives designed to provide maximum engine protection against wear, deposits build up, sludge and varnish formation. It provides long service intervals and trouble free operation and keeps engine's performance at its maximum throughout the full oil service life even operating under severe conditions.

APPLICATIONS

ADNOC Voyager Gold is recommended for petrol and diesel engines of passenger cars, vans, light duty trucks and 4WD recreational vehicles. It is suitable for high performance engines with high power density, especially those fitted with turbo chargers and superchargers. It can be used in modern and old models of American, European, Japanese, Korean and other automobile makers that require the following specifications. It is not recommend for light duty diesel engines equipped with DPF (Diesel Particulate Filter).

BENEFITS

- Exceptional thermal stability and oxidation resistance
- Low oil consumption and long drain intervals with outstanding protection against wear, rust, corrosion and exceptional engine cleanliness
- Multi-viscosity characteristic ensure rapid oil circulation on start-up the engine
- Outstanding low temperature fluidity, excellent shear stability and stable viscosity during operation
- Strong oil film minimizes metal to metal contact
- Superior protection of exhaust emission control system, that maximizes three-way catalyst lifespan.

PERFORMANCE LEVEL

Specifications	SAE		
	5W-30	0W-40	5W-40
ACEA A3/B4	X	X	X
API SN	X	X	X
BMW Long Life 01	X	X	X
MB-Approval 229.5	X	X	X
Porsche A40		X	X
Renault RN0700/0710	X	X	X
VW 502 00	X	X	X
VW 505 00	X	X	X

ADNOC VOYAGER GOLD
SAE 5W-30; 0W-40; 5W-40

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE			Test Methods
		5W-30	0W-40	5W-40	
Density @15°C	kg/L	0.855	0.845	0.856	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	66.00	77.06	83.00	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	11.00	13.63	14.00	ASTM D445
Viscosity Index	-	159	182	174	ASTM D2270
CCS Viscosity	cP	4900	5800	5000	ASTM D5293
- CCS Temperature	°C	-30	-35	-30	
Pour Point	°C	-39	-39	-39	ASTM D97
Flash Point, COC	°C	220	226	235	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER BLUE
SAE 5W-20; 5W-30; 5W-40; 5W-50; 10W-60

DESCRIPTION

ADNOC Voyager Blue is a top of the range, multigrade, shear-stable environment friendly, MID SAPS engine oil, formulated with high quality full synthetic base oils and latest generation additives designed to provide maximum engine protection against wear, deposits build up, sludge and varnish formation. It provides long service intervals and trouble free operation and keeps engine's performance at its maximum throughout the full oil service life even operating under severe conditions.

APPLICATIONS

ADNOC Voyager Blue series is recommended for petrol and diesel engines of passenger cars, racing cars, vans, light duty trucks and 4WD recreational vehicles. It is suitable for high performance engines with high power density, especially those fitted with turbo chargers and superchargers. Its formulation contains low level of SAPS (Sulfated Ash, Phosphorous and Sulfur) which makes it an excellent choice for light duty diesel engines equipped with DPF (Diesel Particulate Filter). The SAE 5W-20 grade provides the best fuel economy of this product family and it is specifically designed for Ford, Jaguar and Land Rover vehicles. It is also recommended for old and new other models of American, European, Japanese, Korean and other automobile makers that require the following specifications.

BENEFITS

- Low oil consumption and long drain intervals with outstanding protection against wear, rust, corrosion and exceptional engine cleanliness
- Exceptional thermal stability and oxidation resistance
- Outstanding low temperature fluidity, excellent shear stability and stable viscosity during operation
- Strong oil film minimizes metal to metal contact
- Superior protection of exhaust emission control system specially the ones equipped with DPF (Diesel Particulate Filter)
- Multi-viscosity characteristic ensure rapid oil circulation on start-up the engine.

PERFORMANCE LEVEL

Specifications	SAE				
	5W-20	5W-30	5W-40	5W-50	10W-60
ACEA A1/B1	X				
ACEA C3		X	X	X	X
ACEA C5	X				
API SN	X	X	X	X	X
Ford WSS-M2C948-B	X				
ILSAC GF-5	X				
Jaguar Land Rover ST-JLR 03.5004	X				
MB 229.31		X	X		X
MB 229.51		X	X		X
Pors che A40			X		
Renault RN0700/0710		X	X		
VW 505 00			X		X
VW 505 01			X		

ADNOC VOYAGER BLUE
SAE 5W-20; 5W-30; 5W-40; 5W-50; 10W-60

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE					Test Methods
		5W-20	5W-30	5W-40	5W-50	10W-60	
Density @15°C	kg/L	0.851	0.855	0.856	0.870	0.880	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	45.10	66.00	83.00	122.8	171.9	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	8.300	11.00	14.00	18.50	24.51	ASTM D445
Viscosity Index	-	162	159	174	169	175	ASTM D2270
CCS Viscosity	cP	4000	6000	6000	6000	5500	ASTM D5293
- CCS Temperature	°C	-30	-30	-30	-30	-25	
Pour Point	°C	-33	-39	-39	-36	-33	ASTM D97
Flash Point, COC	°C	187	220	235	230	230	ASTM D92
Sulfated Ash	%mass	<0.8	<0.8	<0.8	<0.8	<0.8	ASTM D874

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER STAR
SAE 10W-40; 15W-40; 20W-50

DESCRIPTION

ADNOC Voyager Star is a series of premium, shear-stable, multigrade engine oils formulated with high quality base oils and latest generation additives that that ensure high oxidation resistance and provide exceptional protection against wear and deposits build up, resulting in long service intervals and trouble free operation. It keeps engine's performance at its maximum throughout the full oil service life.

APPLICATIONS

ADNOC Voyager Star is recommended for petrol engines of passenger cars, vans, SUVs and light trucks running under both normal and harsh driving conditions that require one of the available viscosities and API SP specification. It is also recommended for direct injection, turbo/super charged engines (TGDI). It is suitable for American, Japanese and Korean passenger vehicles and can be used in old model vehicles due to its backward compatibility.

BENEFITS

- Mitigates the risk of LSPI (Low Speed Pre-Ignition) occurrence in turbocharged engines with gasoline direct injection
- Improved oxidation stability and long drain intervals
- Low oil consumption
- Excellent three-way catalyst protection
- High performance developed for latest technology gasoline engines and backward compatibility
- Exceptional engine cleaning power
- Excellent wear control that maximizes engine durability.

PERFORMANCE LEVEL

API SP

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE			Test Methods
		10W-40	15W-40	20W-50	
Density @15°C	kg/L	0.852	0.855	0.862	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	99.40	96.70	156.5	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	14.85	14.35	19.10	ASTM D445
Viscosity Index	-	159	153	139	ASTM D2270
CCS Viscosity	cP	5300	5100	6100	ASTM D5293
- CCS Temperature	°C	-25	-20	-15	
Pour Point	°C	-39	-39	-33	ASTM D97
Flash Point, COC	°C	256	256	260	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER STAR PLUS HB SAE 0W-16

DESCRIPTION

ADNOC Voyager Star Plus HB is a premium, shear-stable, multigrade passenger car engine oil, formulated with high quality full synthetic base oils and latest generation additives that ensure high oxidation resistance and provide exceptional protection against wear, deposits build up, sludge and varnish formation and provides long service intervals and trouble free operation. It keeps engine's performance at its maximum throughout the full oil service life even operating under severe conditions. This product is optimized for modern gasoline engines to provide the best possible fuel economy, three-way catalyst compatibility and mitigates the risk of LSPI (Low Speed Pre-Ignition) occurrence in turbocharged engines with gasoline direct injection (TGDI).

APPLICATIONS

ADNOC Voyager Star Plus HB is recommended for low and high power density and high performance petrol/gasoline engines of passenger cars, vans, SUVs and light trucks, running under both normal and harsh driving conditions, that require a low viscosity engine oil. It meets or exceed the latest API SP and ILSAC GF-6B specifications. Its technology was field tested, proven real world performance in conventional and hybrid vehicles. Its viscosity is typically recommended by hybrid vehicles manufacturers.

BENEFITS

- Exceptional thermal stability and oxidation resistance
- Field tested technology proven real word performance for hybrid vehicles
- Low oil consumption and long drain intervals with outstanding protection against wear, rust, corrosion, deposits and varnish formation
- Mitigates the risk of LSPI (Low Speed Pre-Ignition) occurrence in turbocharged engines with gasoline direct injection
- Multi-viscosity characteristic ensure rapid oil circulation on engine start-up
- Optimized formulation to provide fuel economy
- Outstanding low temperature fluidity and excellent shear stability provides stable viscosity during operation
- Superior protection of exhaust emission control system, that maximizes three-way catalyst lifespan.

PERFORMANCE LEVEL

API SP/Resource Conserving

ILSAC GF-6B

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		0W-16	
Density @15°C	kg/L	0.844	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	36.82	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	7.200	ASTM D445
Viscosity Index	-	163	ASTM D2270
CCS Viscosity	cP	5800	ASTM D5293
- CCS Temperature	°C	-35	
Pour Point	°C	-45	ASTM D97
Flash Point, COC	°C	190	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices

ADNOC VOYAGER STAR PLUS ECO SAE 0W-20; 5W-20; 5W-30; 10W-30

DESCRIPTION

ADNOC Voyager Star Plus Eco is series of premium, shear-stable, multigrade passenger car engine oils, formulated with high quality full synthetic base oils and latest generation additives that ensure high oxidation resistance and provide exceptional protection against wear, deposits build up, sludge and varnish formation resulting in long service intervals and trouble free operation. It keeps engine's performance at its maximum throughout the full oil service life even operating under severe conditions. This product series is optimized for modern gasoline engines to provide fuel economy,
three-way catalyst compatibility and mitigates the risk of LSPI (Low Speed Pre-Ignition) occurrence in turbocharged engines with gasoline direct injection (TGDI).

APPLICATIONS

ADNOC Voyager Star Plus Eco is recommended for low and high power density and high performance petrol/ gasoline engines of passenger cars, vans, SUVs and light trucks running under both normal and harsh driving conditions that require one of the available viscosities and API SP and/or ILSAC GF-6A specifications. It is also recommended for direct injection, turbo/super charged gasoline engines (TGDI). It is specifically designed for GM, Ford as well as Japanese and Korean OEMs among others and can be used in old model vehicles due to its backward compatibility.

BENEFITS

- Exceptional engine and turbocharge cleanliness
- Exceptional thermal stability and oxidation resistance
- Low oil consumption and long drain intervals with outstanding protection against wear, rust, corrosion, deposits and varnish formation
- Mitigates the risk of LSPI (Low Speed Pre-Ignition) occurrence in turbocharged engines with gasoline direct injection
- Multi-viscosity characteristic ensure rapid oil circulation on engine start-up
- Optimized formulation to provide fuel economy
- Outstanding low temperature fluidity and excellent shear stability provides stable viscosity during operation
- Superior protection of exhaust emission control system, that maximizes three-way catalyst lifespan.

PERFORMANCE LEVEL

Specifications	SAE			
	0W-20	5W-20	5W-30	10W-30
API SP/Resource Conserving	X	X	X	X
API SN+/Resource Conserving	X	X	X	X
API SN	X	X	X	X
ILSAC GF-6A	X	X	X	X
Chrysler MS-6395	X	X	X	X
Ford WSS-M2C960-A1		X		
Ford WSS-M2C945-A/B1		X		
Ford WSS-M2C961-A1			X	
Ford WSS-M2C946-A/B1			X	
Ford WSS-M2C962-A1	X			
Ford WSS-M2C947-A/B1	X			
GM dexos1 Generation 2	X		X	

ADNOC VOYAGER STAR PLUS ECO
SAE 0W-20; 5W-20; 5W-30; 10W-30

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE				Test Methods
		0W-20	5W-20	5W-30	10W-30	
Density @15°C	kg/L	0.844	0.845	0.846	0.854	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	45.00	46.00	60.00	73.40	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	8.450	8.50	10.63	11.23	ASTM D445
Viscosity Index	-	167	164	169	144	ASTM D2270
CCS Viscosity	cP	5000	4000	4000	5800	ASTM D5293
- CCS Temperature	°C	-35	-30	-30	-25	
Pour Point	°C	-45	-42	-39	-36	ASTM D97
Flash Point, COC	°C	190	205	220	215	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER PX GREEN

DESCRIPTION

ADNOC Voyager PX Green is a premium, CARBON NEUTRAL, shear-stable, multigrade passenger car engine oil, formulated with high quality full synthetic base oils manufactured from sustainable and renewable sources and latest generation additives that ensure high oxidation resistance and provide exceptional protection against wear, deposits build up, sludge and varnish formation resulting in long service intervals and trouble free operation.
It keeps engine's performance at its maximum throughout the full oil service life even operating under severe conditions. It is optimized for modern gasoline engines to provide fuel economy, three-way catalyst compatibility and mitigates the risk of LSPI (Low Speed Pre-Ignition) occurrence in turbocharged engines with gasoline direct injection (TGDI).
Its formulation with cutting edge technology, based on vegetal base oil source, is environmentally friendly resulting in a zero balance of carbon footprint that contributes to the reduction of greenhouse gases emissions.

APPLICATIONS

ADNOC Voyager PX Green is recommended for low and high power density and high performance petrol/gasoline engines of passenger cars, vans, SUVs and light trucks running under both normal and harsh driving conditions that require API SP and/or ILSAC GF-6A specifications. It is also recommended for direct injection, turbo/super charged gasoline engines (TGDI). It is specifically designed for American, Japanese and Korean OEMs among others and can be used in old model vehicles due to its backward compatibility.

BENEFITS

- Environmentally friendly resulting in a zero balance of carbon footprint
- Exceptional engine and turbocharge cleanliness
- Low oil consumption and long drain intervals with outstanding protection against wear, rust, corrosion, deposits and varnish formation
- Exceptional thermal stability and oxidation resistance
- Mitigates the risk of LSPI (Low Speed Pre-Ignition) occurrence in turbocharged engines with gasoline direct injection
- Optimized formulation to provide fuel economy
- Outstanding low temperature fluidity and excellent shear stability provides stable viscosity during operation.

PERFORMANCE LEVEL

API SP/SN+/SN/Resource Conserving
ILSAC GF-6A
Chrysler MS-6395
Ford WSS-M2C962-A1
Ford WSS-M2C947-A/B1

ADNOC VOYAGER PX GREEN

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		0W-20	
Density @15°C	kg/L	0.830	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	43.05	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	8.500	ASTM D445
Viscosity Index	-	180	ASTM D2270
CCS Viscosity	cP	3000	ASTM D5293
- CCS Temperature	°C	-35	
Pour Point	°C	-45	ASTM D97
Flash Point, COC	°C	190	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC DD 40

DESCRIPTION

ADNOC DD is a heavy duty diesel engine oil, formulated from high quality base oils and selected additives to provide protection against wear and lubricant thermal breakdown.

APPLICATIONS

ADNOC DD is suitable for General Motors Detroit Diesel two-stroke engines that require ash content less than 1%wt. It is recommended for use in mining, marine and agricultural equipment even under severe duty applications. It can also be used in some manual transmissions and hydraulic systems where engine oil type of fluid is required, as well as in heavy duty machineries and stationary engines.

BENEFITS

- Reduces bore polishing
- Excellent protection against wear
- Improved resistance to ring sticking, ring and cylinder wear
- Liner wear, valve and combustion deposits

PERFORMANCE LEVEL

- API CF/CF-2
- Caterpillar TO-2

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		40	
Density @15°C	kg/L	0.899	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	155.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	15.10	ASTM D445
Viscosity Index	-	106	ASTM D2270
Pour Point	°C	-15	ASTM D97
Flash Point, COC	°C	250	ASTM D92
Base Number	mg KOH/g	6	ASTM D2896
Sulfated Ash	%mass	0.8	ASTM D874

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER HD CF

DESCRIPTION

ADNOC Voyager HD CF is a series of monograde, heavy duty diesel engine oils, developed primarily for high output naturally aspirated or supercharged diesel engines, operating under severe conditions. It is formulated from high quality base oils and chemical additives to provide protection against wear and lubricant thermal breakdown.

APPLICATIONS

ADNOC Voyager HD CF is recommended for use in high-output diesel engines fitted in automotive, agricultural, mining and construction equipment, operating in fleet and construction business where relatively high sulfur fuel is used and other severe service factors are considered. It is suitable for old diesel engines operating in hot climates and is also recommended for land based water pump diesel engines operating under severe service conditions. Its high Base Number is well suited for high sulfur diesel fuels considering the appropriate oil drain intervals. Its broad viscosity grade range allows multi-purpose capability being also suitable for some hydraulic systems as well as manual transmission applications where engine oil type of fluid is required.

BENEFITS

- Protects against the effects of high-sulfur fuels
- Good control on high temperature deposits
- Effective protection against corrosion and wear
- Low oil consumption

PERFORMANCE LEVEL

- API CF
- Allison C-3 (SAE 10W; SAE 30)

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	Viscosity Grade					Test Methods
		10W	30	40	50	70	
Density @15°C	kg/L	0.886	0.896	0.901	0.904	0.904	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	46.50	93.50	134.3	197.2	325.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	6.750	10.75	13.75	17.75	26.00	ASTM D445
Viscosity Index	-	98	98	98	97	97	ASTM D2270
CCS Viscosity	cP	6500					ASTM D5293
- CCS Temperature	°C	-25					
Pour Point	°C	-33	-18	-15	-9	-9	ASTM D97
Flash Point, COC	°C	225	230	250	260	260	ASTM D92
Base Number	mg KOH/g	10	10	10	10	10	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER HD CP CF-4 SAE 15W-40; 20W-50

DESCRIPTION

ADNOC Voyager HD CP CF-4 is a series of multigrade, heavy duty diesel engine oils, developed primarily for high output naturally aspirated or supercharged diesel engines, operating under severe conditions. It is formulated from high quality base oils and chemical additives to provide protection against wear and lubricant thermal breakdown.

APPLICATIONS

ADNOC Voyager HD CP CF-4 is recommended for use in high-output diesel engines fitted in automotive, agricultural, mining and construction equipment, operating in fleet and construction business where relatively high sulfur fuel is used and other severe service factors are considered. It is suitable for old diesel engines operating in both cold and hot climates and is also recommended for land based water pump diesel engines operating under severe service conditions. Its high Base Number is well suited for high sulfur diesel fuels considering the appropriate oil drain intervals.

BENEFITS

- Excellent protection against the effects of high-sulfur fuels
- Good control on high temperature deposits
- Improved resistance to ring sticking, ring and cylinder wear, valve and combustion deposits
- Low oil consumption

PERFORMANCE LEVEL

API CF-4

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE		Test Methods
		15W-40	20W-50	
Density @15°C	kg/L	0.882	0.884	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	99.00	150.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	13.75	18.00	ASTM D445
Viscosity Index	-	140	140	ASTM D2270
CCS Viscosity	cP	6500	7800	ASTM D5293
- CCS Temperature	°C	-20	-15	
Pour Point	°C	-27	-24	ASTM D97
Flash Point, COC	°C	230	250	ASTM D92
Base Number	mg KOH/g	10	10	ASTM D2896
Color	-	Red	Red	Visual

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER HD CF-4 SAE 15W-40; 20W-20; 20W-50

DESCRIPTION

ADNOC Voyager HD CF-4 is a series of multigrade, heavy duty diesel engine oils, developed primarily for high output naturally aspirated or supercharged diesel engines, operating under severe conditions. It is formulated from high quality base oils and chemical additives to provide protection against wear and lubricant thermal breakdown.

APPLICATIONS

ADNOC Voyager HD CF-4 is recommended for use in high-output diesel engines fitted in automotive, agricultural, mining and construction equipment, operating in fleet and construction business where relatively high sulfur fuel is used and other severe service factors are considered. It is suitable for old diesel engines operating in both cold and hot climates and is also recommended for land based water pump diesel engines operating under severe service conditions. Its high Base Number is well suited for high sulfur diesel fuels considering the appropriate oil drain intervals.

BENEFITS

- Excellent protection against the effects of high-sulfur fuels
- Good control on high temperature deposits
- Improved resistance to ring sticking, ring and cylinder wear, valve and combustion deposits
- Low oil consumption

PERFORMANCE LEVEL

API CF-4

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE			Test Methods
		15W-40	20W-20	20W-50	
Density @15°C	kg/L	0.882	0.887	0.884	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	99.00	72.50	150.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	13.75	9.000	18.00	ASTM D445
Viscosity Index	-	140	97	140	ASTM D2270
CCS Viscosity	cP	6500	6000	7800	ASTM D5293
- CCS Temperature	°C	-20	-15	-15	
Pour Point	°C	-27	-27	-24	ASTM D97
Flash Point, COC	°C	230	230	250	ASTM D92
Base Number	mg KOH/g	10	10	10	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
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ADNOC VOYAGER HPSD
SAE 10W; 30; 40; 50; 15W-40; 20W-50

DESCRIPTION

ADNOC Voyager HPSD CG-4 is a series of heavy duty diesel engine oils, developed primarily for high output naturally aspirated or supercharged diesel engines, operating under severe conditions. It is formulated from high quality base oils and chemical additives to provide protection against wear and lubricant thermal breakdown.

APPLICATIONS

ADNOC Voyager HPSD CG-4 is recommended for use in high-output diesel engines fitted in automotive, agricultural, mining and construction equipment, operating in fleet and construction business where relatively high sulfur fuel is used and other severe service factors are considered. It is suitable for old diesel engines operating in both cold and hot climates and is also recommended for land based water pump diesel engines operating under severe service conditions. Its high Base Number is well suited for high sulfur diesel fuels considering the appropriate oil drain intervals.

BENEFITS

- Excellent protection against the effects of high-sulfur fuels
- Good control on high temperature deposits
- Improved resistance to ring sticking, ring and cylinder wear, valve and combustion deposits
- Low oil consumption
- Minimizes bore polishing effect

PERFORMANCE LEVEL

API CG-4/SJ

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	Viscosity Grade						Test Methods
		10W	30	40	50	15W-40	20W-50	
Density @15°C	kg/L	0.880	0.880	0.885	0.900	0.881	0.893	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	49.00	98.00	134.4	196.5	99.10	150.5	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	7.000	11.00	13.75	17.75	13.75	17.75	ASTM D445
Viscosity Index	-	98	98	98	98	140	130	ASTM D2270
CCS Viscosity	cP	6500				6500	8500	ASTM D5293
- CCS Temperature	°C	-25				-20	-15	
Pour Point	°C	-33	-27	-18	-15	-27	-27	ASTM D97
Flash Point, COC	°C	225	225	235	250	230	240	ASTM D92
Base Number	mg KOH/g	10	10	10	10	10	10	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER HPSD PLUS

DESCRIPTION

ADNOC Voyager HPSD Plus CH-4 is a series of heavy duty diesel engine oils, developed primarily for high output naturally aspirated or supercharged diesel engines, operating under severe conditions. It is formulated from high quality base oils and chemical additives to provide protection against wear and lubricant thermal breakdown.

APPLICATIONS

ADNOC Voyager HPSD Plus CH-4 is recommended for use in high-output diesel engines fitted in automotive, agricultural, mining and construction equipment, operating in fleet and construction business where relatively high sulfur fuel is used and other severe service factors are considered. It is suitable for old diesel engines operating in both cold and hot climates and is also recommended for land based water pump diesel engines operating under severe service conditions. Its high Base Number is well suited for high sulfur diesel fuels considering the appropriate oil drain intervals.

BENEFITS

- Excellent protection against the effects of high-sulfur fuels
- Good control on high temperature deposits
- Improved resistance to ring sticking, ring and cylinder wear, valve and combustion deposits
- Low oil consumption
- Minimizes bore polishing effect

PERFORMANCE LEVEL

API CH-4/SJ

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	Viscosity Grade							Test Methods
		10W	40	50	15W-40	20W-50	25W-50	25W-70	
Density @15°C	kg/L	0.880	0.900	0.900	0.881	0.890	0.892	0.895	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	30.60	134.4	197.2	99.10	150.5	210.0	370.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	5.400	13.75	17.75	13.75	17.75	21.5	31.50	ASTM D445
Viscosity Index	-	98	98	97	140	130	120	115	ASTM D2270
CCS Viscosity	cP	6000			6500	8500	9500	10000	ASTM D5293
- CCS Temperature	°C	-25			-20	-15	-10	-10	
Pour Point	°C	-33	-15	-9	-27	-27	-24	-24	ASTM D97
Flash Point, COC	°C	222	250	260	230	240	240	245	ASTM D92
Base Number	mg KOH/g	10	10	10	10	10	10	10	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER PLUS
SAE 40; 50; 10W-30; 15W-40; 20W-50

DESCRIPTION

ADNOC Voyager Plus is a series of heavy duty diesel engine oils, developed primarily for high output naturally aspirated or supercharged diesel engines, operating under severe conditions. It is formulated from high quality base oils and chemical additives that provide effective control with respect to piston cleanliness and bore polishing as well as excellent wear control, soot handling and engine oil stability.

APPLICATIONS

ADNOC Voyager Plus is recommended for use in high-speed, four-stroke diesel engines fitted in automotive, agricultural, mining and construction equipment that meets Euro V and previous emission requirements. It is suitable for engines without particulate filters, most engines fitted with EGR and SCR NOx reduction systems. It can be also used in some types of gasoline engines, making it ideal for mixed fleet operations operating under severe service conditions. It is also suitable for manual transmission application as defined by OEM requirement.

BENEFITS

- Very good oxidation stability and soot handling capability that allows long drain intervals
- Provides effective control with respect to piston cleanliness and bore polishing
- Very good detergency and dispersancy ability to prevent deposits formation and sludge
- Optimal viscosity either at high or low oil operation temperatures
- Mixed fleet engine oil for both heavy/light duty diesel as well as gasoline engines
- Improved shear stability
- Low oil consumption
- Maximizes engine durability
- Improves engine oil filter performance

PERFORMANCE LEVEL

- ACEA E7
- API CI-4/CH-4/SL
- CAT ECF-1-a
- Cummins CES 20076/77/78
- Detroit Diesel DDC 93K215
- Deutz DQC III-18
- Global DHD-1
- JASO DH-1
- Mack EO-N
- MAN M 3275
- MB-Approval 228.3
- MTU Type 2
- Renault RLD-2
- Volvo VDS-3

ADNOC VOYAGER PLUS
SAE 40; 50; 10W-30; 15W-40; 20W-50

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE					Test Methods
		40	50	10W-30	15W-40	20W-50	
Density @15°C	kg/L	0.885	0.901	0.858	0.880	0.889	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	134.5	198.0	73.50	99.00	150.5	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	13.75	17.75	11.20	13.75	17.75	ASTM D445
Viscosity Index	-	98	98	150	140	130	ASTM D2270
CCS Viscosity	cP			4800	6500	8500	ASTM D5293
- CCS Temperature	°C			-25	-20	-15	
Pour Point	°C	-15	-9	-39	-27	-27	ASTM D97
Flash Point, COC	°C	250	260	220	230	240	ASTM D92
Base Number	mg KOH/g	10	10	10	10	10	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Due to some licensing and approval rules and regulations set by API & OEM's above performance levels may not apply to All SAE viscosity grades although they have the same additive treat rates. Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER ULTRA SEMI SYN SAE 10W-40

DESCRIPTION

ADNOC Voyager Ultra Semi Syn is a premium, ultra-performance, multigrade, shear-stable, heavy duty diesel engine oil, developed primarily for high output naturally aspirated or super/turbo charged diesel engines, operating under severe conditions in on-highway and off-highway applications. It is formulated from high quality semi-synthetic base and latest generation additives that provide significantly improved resistance to wear, deposits and oxidation as well as exceptional soot handling performance. All of this combined results in maximum engine durability, significantly extended oil drain intervals (according to the manufacturer's recommendations) and outstanding engine oil performance throughout lubricant service life.

APPLICATIONS

ADNOC Voyager Ultra Semi Syn is recommended for use in high-speed, four-stroke diesel engines fitted in automotive, agricultural, mining and construction equipment using either high or low Sulfur diesel. It meets Euro V and previous emission requirements and is recommended for most engines fitted with EGR (Exhaust Gas Recirculation) and SCR (Selective Catalytic Reduction) NOx reduction systems. It is not recommended for engines fitted with DPF (Diesel Particulate Filters).

BENEFITS

- Excellent detergency/dispersancy ability to prevent deposits and sludge formation
- Exceptional oxidation stability at high temperature and soot control minimize oil degradation, sludge formation and oil thickening, consequently resulting in extra-long drain intervals.
- Provides effective control with respect to piston cleanliness and bore polishing
- Suitable for engines designed to meet Euro III/IV/V emission standards
- Specially formulated with highly shear-stable VM for protection against heavy load applications
- Low volatility of semi-synthetic base reduces oil evaporation resulting in lower oil consumption and reduced need of frequent top-up
- Reduces wear by forming an interface layer on all metals surfaces

PERFORMANCE LEVEL

- ACEA E4/E7
- Deutz DQC IV-10
- Mack EO-N
- MAN M 3377/M 3477
- MB 228.5
- MTU Type 3.1
- Renault RLD-2
- Volvo VDS-3

ADNOC VOYAGER ULTRA SEMI SYN SAE 10W-40

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		10W-40	
Density @15°C	kg/L	0.870	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	99.95	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	14.50	ASTM D445
Viscosity Index	-	150	ASTM D2270
CCS Viscosity	cP	6500	ASTM D5293
- CCS Temperature	°C	-25	
Pour Point	°C	-27	ASTM D97
Flash Point, COC	°C	230	ASTM D92
Base Number	mg KOH/g	13	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER ULTRA SYN SAE 10W-40

DESCRIPTION

ADNOC Voyager Ultra Syn is a premium, ultra-performance, multigrade, shear-stable, heavy duty diesel engine oil, developed primarily for high output naturally aspirated or super/turbo charged diesel engines, operating under severe conditions in on-highway and off-highway applications. It is formulated from high quality fully synthetic base oils and latest generation low ash additives that provide significantly improved resistance to wear, deposits and oxidation as well as exceptional soot handling performance. All of this combined results in maximum engine durability, significantly extended oil drain intervals (according to the manufacturer's recommendations) and outstanding engine oil performance throughout lubricant service life.

APPLICATIONS

ADNOC Voyager Ultra Syn is recommended for use in high-speed, four-stroke diesel engines fitted in automotive, agricultural, mining and construction equipment using either high or low Sulfur diesel. It meets Euro V/VI and previous emission requirements and is strongly recommended for engines with DPF (Diesel Particulate Filters) and most engines fitted with EGR (Exhaust Gas Recirculation) and SCR (Selective Catalytic Reduction) NOx reduction systems in combination with low sulfur diesel.

BENEFITS

- Excellent detergency/dispersancy ability to prevent deposits and sludge formation
- Exceptional oxidation stability at high temperature and soot control minimize oil degradation, sludge formation and oil thickening, consequently resulting in longer drain intervals.
- Protects exhaust systems devices like those fitted with DPF
- Provides effective control with respect to piston cleanliness and bore polishing
- Suitable for engines designed to meet Euro IV/V/VI emission standards
- Specially formulated with highly shear-stable VM for protection against heavy load applications
- Low volatility of synthetic fluids reduces oil evaporation resulting in lower oil consumption and reduced need of frequent top-up
- Reduces wear by forming an interface layer on all metals surfaces

PERFORMANCE LEVEL

- ACEA E6/E7
- Deutz DQC IV-10 LA
- MACK EO-N
- MAN M 3477/ M 3271
- MB 228.51
- MTU Type 3.1
- Renault RLD-2
- Volvo VDS-3

ADNOC VOYAGER ULTRA SYN SAE 10W-40

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		10W-40	
Density @15°C	kg/L	0.870	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	96.00	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	14.40	ASTM D445
Viscosity Index	-	155	ASTM D2270
CCS Viscosity	cP	6300	ASTM D5293
- CCS Temperature	°C	-25	
Pour Point	°C	-30	ASTM D97
Flash Point, COC	°C	230	ASTM D92
Base Number	mg KOH/g	10	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER PLUS HD
SAE 10W-30; 10W-40; 15W-40

DESCRIPTION

ADNOC Voyager Plus HD is a series of heavy duty diesel engine oils, developed primarily for high output naturally aspirated or super/turbo charged diesel engines, operating under severe conditions. It is formulated from high quality base oils and chemical additives that provide effective control with respect to piston cleanliness and bore polishing as well as excellent wear control, soot handling and engine oil stability.

APPLICATIONS

ADNOC Voyager Plus HD is recommended for use in high-speed, four-stroke diesel engines fitted in automotive, agricultural, mining and construction equipment that meets Euro V and previous emission requirements. It is suitable for engines without particulate filters and most engines fitted with EGR and SCR NOx reduction systems. It can be also used in some types of gasoline engines, making it ideal for mixed fleet operations operating under severe service conditions. It is also suitable for manual transmission application when defined by OEM requirement.

BENEFITS

- Very good oxidation stability and soot handling capability that allows long drain intervals
- Provides effective control with respect to piston cleanliness and bore polishing
- Very good detergency and dispersancy ability to prevent deposits formation and sludge
- Optimal viscosity either at high or low oil operation temperatures
- Mixed fleet engine oil for both heavy/light duty diesel as well as gasoline engines
- Improved shear stability
- Extended engine oil drain intervals without frequent top-up requirements
- Maximizes engine durability
- Improves engine oil filter performance
- Suitable for engines designed to meet Euro II/III/IV and Bharat Stage II/III/IV norms

PERFORMANCE LEVEL

- ACEA E7
- API CI-4 Plus/CI-4/CH-4/SL
- CAT ECF-2
- Cummins CES 20076/77/78
- Detroit Diesel DDC 93K214
- DEUTZ DQC III-18
- Global DHD-1
- JASO DH-1
- Mack EO-N PP
- MAN M 3275
- MB-Approval 228.3
- MTU Type 2
- Renault RLD-2
- Volvo VDS-3

ADNOC VOYAGER PLUS HD
SAE 10W-30; 10W-40; 15W-40

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE			Test Methods
		10W-30	10W-40	15W-40	
Density @15°C	kg/L	0.865	0.870	0.880	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	78.00	106.0	99.00	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	11.50	14.50	13.75	ASTM D445
Viscosity Index	-	135	14	140	ASTM D2270
CCS Viscosity	cP	5900	6200	6500	ASTM D5293
- CCS Temperature	°C	-25	-25	-20	
Pour Point	°C	-27	-27	-27	ASTM D97
Flash Point, COC	°C	230	230	230	ASTM D92
Base Number	mg KOH/g	10	10	10	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
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ADNOC VOYAGER ULTRA SAE 15W-40

DESCRIPTION

ADNOC Voyager Ultra is a high performance, multigrade, shear-stable, heavy duty diesel engine oil, developed primarily for high output naturally aspirated or super/turbo charged diesel engines, operating under severe conditions in on-highway and off-highway applications. It is formulated from high quality base oils and carefully selected low ash additives that provide significantly improved resistance to wear, deposits and oxidation as well as exceptional soot handling performance.

APPLICATIONS

ADNOC Voyager Ultra is recommended for use in high-speed, four-stroke diesel engines fitted in automotive, agricultural, mining and construction equipment using either high or low Sulfur diesel. It meets Euro V/VI and US EPA 2007 and previous emission requirements and is suitable for engines with DPF (Diesel Particulate Filters) and most engines fitted with EGR (Exhaust Gas Recirculation) and SCR (Selective Catalytic Reduction) NOx reduction systems. It can be also used in some types of gasoline engines, making it ideal for mixed fleet operations operating under severe service conditions.

BENEFITS

- Excellent detergency/dispersancy ability to prevent deposits and sludge formation
- Exceptional oxidation stability at high temperature and soot control minimizes oil degradation, sludge formation and oil thickening, consequently resulting in longer drain intervals.
- Mixed fleet engine oil for both heavy/light duty diesel as well as gasoline engines
- Protects exhaust systems devices like those fitted with DPF
- Provides effective control with respect to piston cleanliness and bore polishing
- Suitable for engines designed to meet Euro IV/V/VI, Bharat Stage II/III/IV and US EPA 2010/2017 (GHG17) emission standards

PERFORMANCE LEVEL

- ACEA E9
- API CJ-4/CI-4 Plus/CI-4/SN
- Cat ECF-3
- Cummins CES 20081
- Detroit Diesel DDC 93K218
- Deutz DQC III-18 LA
- Mack EO-O PP
- MAN M 3575
- MB-Approval 228.31
- MTU Type 2.1
- Renault RLD-3
- Volvo VDS-4

ADNOC VOYAGER ULTRA SAE 15W-40

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		15W-40	
Density @15°C	kg/L	0.880	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	98.90	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	13.75	ASTM D445
Viscosity Index	-	140	ASTM D2270
CCS Viscosity	cP	6500	ASTM D5293
- CCS Temperature	°C	-20	
Pour Point	°C	-27	ASTM D97
Flash Point, COC	°C	230	ASTM D92
Base Number	mg KOH/g	8	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER SUPER PLUS HD SAE 10W-30; 10W-40; 15W-40

DESCRIPTION

ADNOC Voyager Super Plus HD is a series of premium, high performance, multigrade, shear-stable, heavy duty diesel engine oils, developed primarily for high output naturally aspirated or super/turbo charged diesel engines, operating under severe conditions in on-highway and off-highway applications. It is formulated from high quality base oils and latest generation low ash additives that provide significantly improved resistance to wear, deposits and oxidation as well as exceptional soot handling performance.

APPLICATIONS

ADNOC Voyager Super Plus HD is recommended for use in high-speed, four-stroke diesel engines fitted in automotive, agricultural, mining and construction equipment using either high or low Sulfur diesel. It meets Euro V/VI and US EPA 2007 and previous low emission requirements and is suitable for engines with DPF (Diesel Particulate Filters) and most engines fitted with EGR (Exhaust Gas Recirculation) and SCR (Selective Catalytic Reduction) NOx reduction systems. It can be also used in some types of gasoline engines, making it ideal as a "universal" engine lubricant for mixed fleet operations running under the most severe service conditions.

BENEFITS

- Excellent detergency/dispersancy ability to prevent deposits and sludge formation
- Exceptional oxidation stability at high temperature and soot control minimize oil degradation, sludge formation and oil thickening, consequently resulting in longer drain intervals.
- Mixed fleet engine oil for both heavy/light duty diesel as well as gasoline engines
- Protects exhaust systems devices like those fitted with DPF
- Provides effective control with respect to piston cleanliness and bore polishing
- Suitable for engines designed to meet Euro IV/V/VI, Bharat Stage II/III/IV and US EPA 2010/2017 (GHG17) emission standards
- Specially formulated with highly shear-stable VM for protection against heavy load applications

PERFORMANCE LEVEL

- ACEA E9/E7
- API CK-4/CJ-4/CI-4 Plus/CI-4/SN
- Cat ECF-3
- Cummins CES 20086
- Detroit Fluids Specification 93K222
- Deutz DQC III-18 LA
- JASO DH-2
- Mack EO-S 4.5
- MAN M 3775
- MB-Approval 228.31
- MTU Type 2.1
- Renault RLD-3
- Volvo VDS-4.5
- Allison TES-439

ADNOC VOYAGER SUPER PLUS HD SAE 10W-30; 10W-40; 15W-40

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE			Test Methods
		10W-30	10W-40	15W-40	
Density @15°C	kg/L	0.855	0.860	0.865	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	68.00	92.00	101.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	11.20	14.20	14.20	ASTM D445
Viscosity Index	-	150	150	140	ASTM D2270
CCS Viscosity	cP	6000	6500	6500	ASTM D5293
- CCS Temperature	°C	-25	-25	-20	
Pour Point	°C	-33	-33	-27	ASTM D97
Flash Point, COC	°C	220	220	230	ASTM D92
Base Number	mg KOH/g	10	10	10	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

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ADNOC AUTOMATIC TRANSMISSION FLUID DII

DESCRIPTION

ADNOC ATF Dexron II-D is multifunctional, automatic transmission fluid formulated with high quality base oils and specially selected additives that provide protection against corrosion, wear and sludge formation.

APPLICATIONS

ADNOC ATF Dexron II-D is suitable for automatic transmission and power steering used in heavy trucks and off-road vehicles and older passenger cars. It can also be used in powershift and industrial torque convertors and other hydraulic systems that require a GM Dexron II-D or GM Type 'A' Suffix 'A' performance levels.

BENEFITS

- Good oxidation resistance
- Protection against corrosion, wear and sludge formation
- Good seal compatibility
- Excellent low-temperature fluidity
- Good shear stability

PERFORMANCE LEVEL

- Allison C-4
- GM Dexron® II-D
- GM Type 'A' Suffix 'A' (TASA)

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	Results	Test Methods
Density @15°C	kg/L	0.853	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	33.70	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	7.300	ASTM D445
Viscosity Index	-	190	ASTM D2270
Pour Point	°C	-48	ASTM D97
Flash Point, COC	°C	190	ASTM D92
Color	-	Red	Visual

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC AUTOMATIC TRANSMISSION FLUID DEXRON III H

DESCRIPTION

ADNOC ATF Dexron III-H is a high performance, multifunctional, automatic transmission fluid formulated with full synthetic base oils and specially selected additives that provide optimal friction properties as well as protection against corrosion, wear, sludge, deposits and lubricant oxidation.

APPLICATIONS

ADNOC ATF Dexron III-H is suitable for passenger car and commercial vehicle automatic transmission, hydraulic systems of mobile and off-high way equipment and industrial equipment applications that required the following specifications.

BENEFITS

- Optimal friction properties provide smooth shifting and trouble free operations
- Excellent oxidation resistance resulting in cleaner transmissions
- Compatible with all types of rubbers, elastomers and metals and providing protection against wear and leakage
- Excellent low-temperature fluidity
- Good shear stability

PERFORMANCE LEVEL

- Allison C-4, TES 389
- GM Dexron® III-H
- Ford Mercon®

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	Results	Test Methods
Density @15°C	kg/L	0.854	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	34.30	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	7.300	ASTM D445
Viscosity Index	-	185	ASTM D2270
Pour Point	°C	-42	ASTM D97
Flash Point, COC	°C	200	ASTM D92
Color	-	Red	Visual

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC TRANSMISSION OIL T4

DESCRIPTION

ADNOC Transmission Oil T4 is a series of high quality transmission fluids, formulated from high quality base oils and carefully selected additive package that provide excellent friction control, protection against rust, corrosion and wear and high oxidation resistance that results in a product with excellent field proven performance.

APPLICATIONS

ADNOC Transmission Oil T4 is recommended for both newly developed and older model drive train components like powershift transmissions, final drives and hydraulic systems. It is mainly formulated to meet Cat TO-4 specification and to be used in Caterpillar equipment that require this specification. It can also be used in other equipment from Komatsu, Allison and ZF that require the following specification.

BENEFITS

- Excellent friction control to meet brake and clutch capacity needs
- Smooth and quiet wet-disc brake operation
- Maximize equipment life
- Excellent oxidation stability provides long drain intervals
- Good elastomer compatibility
- Effective control of sludge, varnish and deposits formation
- Optimal friction properties provide smooth shifting and trouble free operations

PERFORMANCE LEVEL

- API CF
- Allison C-4 (SAE 10W, 30)
- Caterpillar TO-4
- Komatsu KES 07.868.1
- ZF TE-ML-03C (SAE 10W, 30)
- ZF TE-ML-07F (SAE 30)

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE					Test Methods
		10W	30	40	50	60	
Density @15°C	kg/L	0.880	0.892	0.897	0.900	0.920	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	37.20	93.15	136.4	203.6	309.7	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	6.000	11.10	14.03	18.43	24.28	ASTM D445
Viscosity Index	-	105	105	100	100	99	ASTM D2270
Pour Point	°C	-33	-18	-12	-9	-9	ASTM D97
Flash Point, COC	°C	222	230	240	250	260	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC ATF UNIVERSAL

DESCRIPTION

ADNOC ATF Universal is a high performance, multifunctional, universal automatic transmission fluid formulated with full synthetic base oils and specially selected additives that provide optimal friction properties as well as protection against corrosion, wear, sludge, deposits and lubricant oxidation.

APPLICATIONS

ADNOC ATF Universal is suitable for passenger car and commercial vehicles automatic transmissions, hydraulic systems of mobile and off-highway equipment and industrial equipment applications. Its universal profile makes it suitable for applications like the fuel efficient 6+ speed transmissions as well for older 3/4/5 speed transmissions that require the following specifications.

BENEFITS

- Excellent oxidation resistance resulting long drain intervals
- Compatible with all types of rubbers, elastomers and metals and providing protection against wear and leakage
- Excellent low-temperature fluidity
- Better shear stability
- Better component compatibility
- Optimal friction properties provide smooth shifting and trouble free operations

PERFORMANCE LEVEL

- Allison C4, TES 389 and TES 295
- Chrysler ATF+4
- GM Dexron®-IIIH
- JASO 1A
- Mercon® V
- GM Dexron®-VI
- Hyundai SP-IV
- Mazda FZ
- MB 236.14 / 236.15 / 236.17
- Ford Mercon® LV
- Nissan MaticS
- Shell M-1375.4 or ZF Lifeguardfluid6
- Shell M-1375.6 or ZF Lifeguardfluid6+
- Shell M-1375.8 or ZF Lifeguardfluid8;
- Toyota Type WS

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	Results	Test Methods
Density @15°C	kg/L	0.854	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	32.30	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	6.300	ASTM D445
Viscosity Index	-	156	ASTM D2270
Pour Point	°C	-45	ASTM D97
Flash Point, COC	°C	234	ASTM D92
Color	-	Red	Visual

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC CVT FLUID

DESCRIPTION

ADNOC CVT Fluid is a full synthetic, high performance Continuously Variable Transmission fluid recommended for use in Japanese, American, Korean and European CVT's of push-belt and pull-chain designed transmissions. It is also suitable for use in wet clutch CVT's. It provides smoother, consistent all weather step-less shifting. It has an all-around lubrication protection of the transmission components to help extend the transmission life and provides a smoother driving experience.

APPLICATIONS

ADNOC CVT Fluid is recommended for passenger car fitted with Continuous Variable Transmissions that require the following specifications.

BENEFITS

- Excellent protection metal-on-metal protection between Belt and Pulley
- Metal Anti-wear on pull-chain CVTs
- Good shear stability, anti-foaming and anti-wear
- Good performance on high torque applications
- Excellent thermal and oxidation stability or consistent transmission performance
- Compatibility with all common seal materials helping control the leakage
- Effective foam control properties that will provide consistent shifting performance
- Excellent low temperature fluidity

PERFORMANCE LEVEL

Daihatsu AMMIX	CVT; CVTF DTC; CVTF-D FE*
Dodge/Jeep	NS- 2; CVTF+4
Ford	CVT 30; CVT 23
GM/Saturn	DEX-CVT
Honda	HCF2
Hyundai/ Kia	SP CVT 1
Mazda	CVTF 3320
Mercedes Benz	236.20
Mitsubishi	CVT-J1; CVT-J4*
Nissan	NS-1; NS- 2; NS-2V; NS-3
Subaru	Lineartronic CVTF/CVTF II; HT CVTF; CV-30; e-CFTV
Suzuki	TC; NS- 2; VTF 3320; CVT Green 1/2*/3
Toyota	TC; FE*
VW/Audi	TL 52180; G 052 180 (-A2); G 052 516 A2

*OEM genuine CVTF is recommended during transmission warranty period

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	Results	Test Methods
Density @15°C	kg/L	0.854	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	35.37	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	7.000	ASTM D445
Viscosity Index	-	179	ASTM D2270
Pour Point	°C	-50	ASTM D97
Flash Point, COC	°C	210	ASTM D92
Color	-	Red	Visual

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC DCT FLUID

DESCRIPTION

ADNOC DCT Fluid is a premium, high performance, automatic transmission fluid formulated with full synthetic base oils and selected additives that deliver excellent performance for dual clutch transmission application. It has an all-around lubrication protection of the transmission components to help extend the transmission life and it provides a smoother driving experience.

APPLICATIONS

ADNOC DCT Fluid is recommended for passenger cars fitted with wet-clutch dual clutch transmissions that require the following specifications. It is not recommended for use in step AT or CVT transmissions.

BENEFITS

- Good shear stability, anti-foaming and anti-wear properties
- Excellent thermal and oxidation stability
- Compatibility with all common seal materials
- Good performance on high torque applications
- Excellent low temperature fluidity
- Shudder free operation
- Dual Clutch Friction Control
- Protection of transmission components against corrosion and wear

PERFORMANCE LEVEL

- **VW/Audi/Skoda**
  - DCT: DQ250 andDQ500 transmissions
  - DCTF-wet clutch: VW P/N G 052 182 A2 (fluid ref.)
- **Getrag**
  - DCT: 7DCT600 transmissions
  - DCTF-wet clutch: BMW P/N 83220440214 (fluid ref.)

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	Results	Test Methods
Density @15°C	kg/L	0.854	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	32.30	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	7.400	ASTM D445
Viscosity Index	-	184	ASTM D2270
Pour Point	°C	-48	ASTM D97
Flash Point, COC	°C	228	ASTM D92
Color	-	Red	Visual

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC HD TRANS SAE 10W; 30; 40; 50

DESCRIPTION

ADNOC HD Trans is a series of monograde, manual transmission fluids, formulated from high quality base oils and selected additives to provide protection against corrosion, wear and lubricant thermal breakdown.

APPLICATIONS

ADNOC HD Trans is recommended for use manual transmissions and final drives fitted in automotive, agricultural, mining and construction equipment, operating under severe conditions that require a monograde, API CF type of product. It can also be used in some hydraulic systems depending on the type of viscosity and specification required by the equipment manufacturer.

BENEFITS

- Protects against rust, corrosion and wear
- Good oxidation resistance controls lubricant viscosity
- Smooth gearshift operation

PERFORMANCE LEVEL

- API CF
- Caterpillar TO-2

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE				Test Methods
		10W	30	40	50	
Density @15°C	kg/L	0.886	0.896	0.901	0.904	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	46.50	93.50	134.3	197.2	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	6.750	10.75	13.75	17.75	ASTM D445
Viscosity Index	-	98	98	98	97	ASTM D2270
Pour Point	°C	-33	-18	-15	-9	ASTM D97
Flash Point, COC	°C	225	230	236	240	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC GEAR OIL GP
SAE 90; 140; 85W-90; 85W-140

DESCRIPTION

ADNOC Gear Oil GP is a series of automotive gear lubricants formulated from highly refined base oils and carefully selected additives based on extreme pressure sulfur-phosphorous chemistry that provide protection against rust, corrosion and wear over a wide range of temperature and service conditions.

APPLICATIONS

ADNOC Gear Oil GP is recommended for manual transmissions fitted in passenger cars and on/off-road vehicles, operating under high speed, low torque and low-speed/high torque conditions. It can be used in as a rear axle lubricant under low/medium severity like passenger cars and light duty vehicles that require API GL-4 specification. It is not recommended for conventional heavy duty hypoid axles operating under high loads/high severity, except when specified by the manufacturer a product with such characteristics.

BENEFITS

- Formulated for automotive high speed gears
- Excellent lubrication even at low temperatures
- Provides good protection against corrosion and wear
- Good thermal stability and resistance to high temperature oxidation

PERFORMANCE LEVEL

API GL-4

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE				Test Methods
		90	140	85W-90	85W-140	
Density @15°C	kg/L	0.901	0.907	0.901	0.907	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	200.0	460.0	200.0	460.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	17.50	30.50	17.50	30.50	ASTM D445
Viscosity Index	-	96	96	96	96	ASTM D2270
Pour Point	°C	-9	-9	-15	-12	ASTM D97
Flash Point, COC	°C	220	220	220	220	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC GEAR OIL GX
SAE 90; 140; 80W-90; 85W-90; 85W-140

DESCRIPTION

ADNOC Gear Oil GX is a series of automotive gear lubricants formulated from highly refined base oils and carefully selected additives based on extreme pressure sulfur-phosphorous chemistry that provide protection against rust, corrosion and wear over a wide range of temperature and service conditions.

APPLICATIONS

ADNOC Gear Oil GX is recommended for manual transmissions, differentials, hypoid gear axles and final drives fitted in passenger cars, on/off-road and commercial vehicles, operating under high speed/shock loads, high speed/low torque and low-speed/high torque conditions, where API GL-5 specification is required. It is not recommended for manual transmissions that use synchronizers made of yellow metals that require API GL-4 specification.

BENEFITS

- Excellent protection against wearing and scoring produced by high speed and heavy loads
- Multi-viscosity grades provide good lubrication even at low temperatures
- Provides good protection against corrosion and wear
- Good thermal stability and resistance to high temperature oxidation
- Excellent load carrying capacity and good antifoam properties
- Maximizes equipment service life
- Suitable for a wide variety of applications and service conditions
- Compatible with seals and gaskets

PERFORMANCE LEVEL

API GL-5

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE					Test Methods
		90	140	80W-90	85W-90	85W-140	
Density @15°C	kg/L	0.903	0.906	0.897	0.903	0.909	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	200.0	405.0	140.0	200.0	405.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	17.50	28.25	14.00	17.50	28.25	ASTM D445
Viscosity Index	-	96	96	96	96	96	ASTM D2270
Pour Point	°C	-9	-9	-30	-12	-12	ASTM D97
Flash Point, COC	°C	220	220	210	220	220	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution**.
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC GEAR OIL GX LS (LIMITED SLIP) SAE 90; 80W-90 LIMITED SLIP DIFFERENTIAL OIL

DESCRIPTION

ADNOC Gear Oil GX LS is an extreme pressure, automotive gear oil formulated from highly refined base oils, extreme pressure additive, friction modifier and other components that minimize the spalling and wear and provide the desired friction performance needed in old and modern limited slip axles which otherwise would exhibit squawking or other noises discernable by the driver.

APPLICATIONS

ADNOC Gear Oil GX LS is specially designed to meet the requirements of many limited-slip differentials of self-locking axles fitted in passenger car, utility vehicles and other equipment. It is recommended for differentials where manufacturers' specify API GL-5 gear lubricants plus supplemental limited slip additive.

BENEFITS

- Good antirust & anticorrosion properties
- Extreme pressure properties protect hypoid and other types of gears from scuffing and wear
- Eliminates vibration and chatter in stressed self-locking axles
- Stable at high temperatures
- Provides excellent protection against worm or stripped gear teeth under all operating conditions.
- Compatible with conventional seal material used by axle manufacturers

PERFORMANCE LEVEL

API GL-5

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE		Test Methods
		90	80W-90	
Density @15°C	kg/L	0.899	0.890	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	166.0	129.9	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	17.00	13.72	ASTM D445
Viscosity Index	-	109	101	ASTM D2270
Pour Point	°C	-33	-30	ASTM D97
Flash Point, COC	°C	>200	>200	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC GEAR OIL SX SAE 75W-80; 75W-90

DESCRIPTION

ADNOC Gear Oil SX is a series of fully synthetic, automotive gear lubricants formulated from highly quality synthetic base oils and carefully selected additives based on extreme pressure sulfur-phosphorous chemistry that provide superior protection against rust, corrosion and wear over a wide range of temperature and service conditions.

APPLICATIONS

ADNOC Gear Oil SX is recommended for manual transmissions, differentials, hypoid gear axles and final drives fitted in passenger cars, on/off-road and commercial vehicles, operating under high speed/shock loads, high speed/low torque and low-speed/high torque conditions, where API GL-5 specification is required. It is not recommended for manual transmissions that use synchronizers made of yellow metals that require API GL-4 specification.

BENEFITS

- Excellent protection against wearing and scoring produced by high speed and heavy loads
- Multi-viscosity grades provide exceptional lubrication even at extreme low temperatures
- Provides good protection against corrosion and wear
- Excellent thermal stability and resistance to high temperature oxidation
- Excellent load carrying capacity and good antifoam properties
- Maximizes equipment service life
- Suitable for a wide variety of applications and service conditions
- Compatible with seals and gaskets
- Full synthetic formula provides longer drain intervals

PERFORMANCE LEVEL

API GL-5

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE		Test Methods
		75W-80	75W-90	
Density @15°C	kg/L	0.854	0.856	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	42.83	98.05	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	8.467	17.00	ASTM D445
Viscosity Index	-	179	189	ASTM D2270
Pour Point	°C	-60	-63	ASTM D97
Flash Point, COC	°C	206	206	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER SYN GVEO SAE 10W-30

DESCRIPTION

ADNOC Voyager Syn GVEO is a premium, fully synthetic, multigrade engine oil specifically developed for engines running on CNG/LPG/LNG. Its formulation contains latest generation synthetic base oils that ensure high oxidation resistance and additives specially selected to provide exceptional protection against wear and deposits build up, resulting in trouble free operation for longer service intervals.

APPLICATIONS

ADNOC Voyager Syn GVEO is recommended for passenger cars, minivans, and other vehicles running on CNG/LPG/LNG. It can also be used in petrol/gasoline engines when a product that meets the specifications below is required.

BENEFITS

- Excellent low temperature start-up
- High thermal stability and oxidation resistance
- Long engine life
- Low oil consumption
- Most operating conditions from mild to severe
- Optimized frictional properties that deliver fuel economy
- Reduced engine wear and deposits even in adverse conditions
- Reduced fuel consumption*

PERFORMANCE LEVEL

- API SN, Resource Conserving (licensed)
- ILSAC GF-5

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		10W-30	
Density @15°C	kg/L	0.853	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	73.40	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	11.23	ASTM D445
Viscosity Index	-	144	ASTM D2270
CCS Viscosity	cP	5800	ASTM D97
- CCS Temperature	°C	-25	ASTM D92
Base Number	°C	-36	ASTM D2896
Pour Point	°C	220	ASTM D874

Minor variations in product typical test data are to be expected in normal manufacturing.

Reduced fuel consumption when compared to SAE 10W-40, SAE 20W-40 and SAE 20W-50 products. Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER NGEO 40 LA

DESCRIPTION

ADNOC Voyager NGEO is a high performance, low-ash, gas engine oil, formulated with high quality base oils and carefully selected low ash additive technology that provide outstanding protection against wear, corrosion and sludge formation, improved deposit control and high oxidation and nitration resistance to deliver long service hours.

APPLICATIONS

ADNOC Voyager NGEO is recommended for four-stroke and some two-stroke gas engines burning natural gas, biogas, landfill gas and CNG from OEMs like Caterpillar, Cummins, Deutz, Guascor, Hyundai, Jenbacher, MAN, MDE, MTU, Perkins, Superior STGV, Wärtsilä and Waukesha where OEM requires oil ash content up to 0.5 %mass.

BENEFITS

- Long oil life and reduced oil consumption
- Outstanding protection against wear and corrosion
- Improved deposit control
- Proven field performance
- Exceptional engine cleanliness
- Extended cylinder head life
- High oxidation and nitration resistance
- Low phosphorous content

PERFORMANCE LEVEL

- API CF
- Caterpillar 3516 TA/LE, 3300, 3500
- MTU Series 400
- Wartsila 220SG, 20V34SG
- Waukesha VHP, APG, VGF
- Cummins CES20074
- Deutz TCG 2016 V12
- MAN High speed E2842 LE302
- GE Jenbacher Series 2/3/4/6; JG S320

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		40	
Density @15°C	kg/L	0.890	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	143.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	14.50	ASTM D445
Viscosity Index	-	100	ASTM D2270
Pour Point	°C	-15	ASTM D97
Flash Point, COC	°C	230	ASTM D92
Base Number	mg KOH/g	5.6	ASTM D2896
Sulfated Ash	%mass	0.46	ASTM D874

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC TRACTOR UTTF - TORQUE FLUID 56

DESCRIPTION

ADNOC Tractor UTTF - Torque Fluid 56 is made from highly refined base oils treated with the necessary additives to give excellent protection against foaming, corrosion, oxidation and wear in units where high loads and special frictional needs exist.

BENEFITS

- Excellent extreme-pressure protection for maximum gear life
- Balanced frictional properties for wet brakes and power take-off clutches.
- A high level of corrosion and rust inhibition and excellent water tolerance.
- Good filterability characteristics for optimum hydraulic operation.
- Excellent thermal stability for transmissions operating at high temperatures

APPLICATIONS

ADNOC Tractor UTTF - Torque Fluid 56 is a high-quality, multi-purpose Universal Tractor Transmission oil (UTTO) intended for use in hydraulics, transmissions, wet brake systems used in agricultural, construction and industrial equipment. It provides superior gear performance, chatter suppression, hydraulic pump and low temperature performance..

PERFORMANCE LEVEL

ADNOC TORQUE FLUID 56 meets the following quality levels:

- John Deere J20C,D
- Ford New Holland ESN-M2C 134D
- MASSEY FERGUSON M1141, CMS M1143
- VOLVO WET BRAKE FLUID WB 101
- API GL-4
- Allison C-4 , ZF: TE-ML-03E, TE-ML-05F and TE-ML-06K
- Caterpillar TO-2 (Multi)

PRODUCT TYPICAL CHARACTERISTICS

Typical Inspections		ADNOC Torque Fluid 56
Density @15°C		0.865
Kinematic Viscosity	@ 40 °C, cSt	66
	@ 100 °C, cSt	9.4
Brookfield Viscosity	mPa.s at -18 °C	3500
	mPa.s at -20 °C	4100
Viscosity Index		145
Pour Point, °C		-40
Flash Point, °C		224

ADNOC TRACTOR STUO - SUPER TRACTOR UNVERSAL OIL SAE 15W-40; 20W-40

DESCRIPTION

ADNOC Tractor Stuo is designed to serve nearly the entire farm lubricating oil needs all year round in all types of tractor engines, transmissions, final drives, hydraulic system and brakes.

APPLICATIONS

ADNOC Tractor Stuo is recommended for use in gasoline engines and other utility vehicles around the farm. It can be used as transmission oil, hydraulic oil, wet-brakes and power take-off clutches.

BENEFITS

- Multi application additive package enables use in engines, transmission, final drives and hydraulic system.
- Protection against acid, varnish, carbon deposits, formation of gums, and reduces oil thickening.
- Multi-viscosity characteristic ensure rapid oil circulation on start-up, preventing wear.
- Special friction modifier component that allows smooth action of the wet brakes and power take-off clutches

PERFORMANCE LEVEL

API	CE/SF
CCMC	D3/G3
MI	L-2104D
MB	227.1
API	GL-4
CAT	TO-2
Allison	C4
John Deer	J-20A
Ford	M2C 159B
Massey Ferguson	M 1139
ZF TE-ML	06 page 3 & 4 Part B & 07
Mac	EOK-2

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE		Test Methods
		15W-40	20W-40	
Density @15°C	Kg/L	0.876	0.888	ASTM D1298
Kinematic Viscosity @ 40°C	mm^2/s	113.0	123.5	ASTM D445
Kinematic Viscosity @ 100°C	mm^2/s	13.75	14.20	ASTM D445
Viscosity Index	-	120	114	ASTM D2270
CCS Viscosity	cP	6500	6900	ASTM D5293
- CCS Temperature	°C	-20	-15	
Pour Point	°C	-27	-27	ASTM D-97
Flash Point, COC	°C	230	248	ASTM D-92
Base Number	mg KOH/g	11	11	ASTM D-2896

ADNOC AUTOCOOL WB

DESCRIPTION

ADNOC AUTOCOOL WB is water based environmentally friendly corrosion inhibitor, based on OAT (Organic Acid Technology) chemistry. Its formulation is free from nitrites, nitrates, borates, amines, phosphates and silicates resulting in a low toxicity product that requires low maintenace and does not need the addtion of suplemental coolants additive (SCAs). It is harmless to rubber and does form deposits that can clog the radiators.

APPLICATIONS

ADNOC AUTOCOOL WB is a ready-to-use product, which does not require dilution, recommended as a corrosion inhibitor for cooling systems of diesel engines of automotive, industrial, agricultural, mining, power generation and marine applications operating in hot climate and that do not need freeze protection.

BENEFITS

- Prevents corrosion of metals and alloys used in modern engine cooling systems, including aluminum, iron, copper and solder alloys
- Provides efficient heat transfer at high engine operating temperatures
- Does not form deposits that can clog the radiators and cause thermostat malfunction
- Compatible with ordinary summer coolant and with a range of glycol-based engine coolants
- Ready-to-use, no need of additional dilution
- Does not require addition of SCAs
- Low toxicity, environmentally friendly

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	Grades		Test Methods
		Green	Pink	
Density @15°C	Kg/L	1.003	1.005	ASTM D1122
Appearance	-	Clear	Clear	Visual
Color	-	Green	Red	
pH	-	8.1	7.9	ASTM D1287
Reserve Alkalinity	mL	0.8	0.9	ASTM D1121
Amine	mg/L	Nil	Nil	-
Borate	mg/L	Nil	Nil	
Nitrate	mg/L	Nil	Nil	
Nitrite	mg/L	Nil	Nil	
Phosphate	mg/L	Nil	Nil	
Silicate	mg/L	Nil	Nil	

ADNOC AUTOCOOL NC 50

DESCRIPTION

AUTOCOOL NC 50 is 50% mono ethylene glycol and 50% water mixed fluid.

APPLICATIONS

AUTOCOOL NC 50 is used as Barrier fluid in high pressure water injection application mostly in drilling application.

PRODUCT TYPICAL CHARACTERISTICS

Properties		Units	VALUE	Test Methods
Grade		**-**	**50%**	**-**
Specific Gravity	@ 20°C	-	1.055	ASTM D-1298
Color		-	Blue	ASTM D-1500
MEG content		%mass	50	ASTM D-1287

ADNOC AUTOCOOL 33%, 50%, 100%

DESCRIPTION

ADNOC AUTOCOOL is recommended for use in liquid cooling systems of automotive and industrial gasoline and diesel engines. They are available in various concentrations ready for use. It is harmless to rubber and does not foam or clog radiators. Based on OAT (Organic Acid Technology) chemistry. Free from Nitrates and Amines.

APPLICATIONS

ADNOC AUTOCOOL protects cooling systems of gasoline and diesel engine against rust in all seasons. It provides ideal cooling, effective protection against corrosion and scale deposit formation in the cooling systems year-round, resulting in longer radiator life.

ADVANTAGES

- High boiling point gives better cooling performance in high temperature condition.
- Excellent anti-foam properties.
- Protects the radiator against rust & corrosion.
- Compatible with ordinary summer coolant.
- Protection against excessive evaporation.
- Provides year round cooling properties

PERFORMANCE LEVEL

BS 6580
ASTM D3306

Complies with most engine manufacturer's requirements for full fill coolants

PRODUCT TYPICAL CHARACTERISTICS

AUTOCOOL LL	Units	33%	50%	100%
Specific Gravity @ 20 Deg Celcius		1.050	1.072	1.111
Reserve Alkalinity, ASTM D1121	ml	1.1	1.3	3.8
Density at 20 Deg Celcius ASTM D 4052	kg/L	1.049	1.070	1.109
pH value (33%) ASTM D1287		8.37	8.22	8.42
Freezing Protection (50%), oC ASTM D1177		-20	-42	-34
Foam, break time (ASTM D1881)	Seconds	<2	<2	<2
Amine	%	<0.1	<0.1	<0.1
Borate	mg/L	<1	<1	<1
Silicate	mg/L	2	3	13
Nitrate	ppm	<2	<2	<2
Flash point, COC oC		106	112	128
Colour		Blue	Blue	Blue

AUTOCOOL LL (LONG LIFE) 33%, 50%, 100%

DESCRIPTION

AUTOCOOL LL is based on advanced technology of organic acid inhibitor additives approved by most OEMs worldwide. It is compatible with all standard rubber hoses, gaskets and seals used within the cooling system and does not foam or clog radiators. It is available in various concentrations ready for use. It is based on OAT (Organic Acid Technology) chemistry, environmentally safe as there are no harmful additives such as nitrites and amines.

APPLICATIONS

AUTOCOOL LL works on all engines employing cast iron, aluminum, copper or combination of these metals used in modern engines and heavy duty engines where environmental controls are severe and where OEMs recommend extended life and salt free coolants. It is applicable in mixed fleet as well as marine cooling systems.

Auto Cool protects cooling systems of gasoline and diesel engine against rust in all seasons. Especially recommended for CHP engines working under severe working conditions. It provides ideal cooling, effective protection against corrosion and scale deposit formation in the cooling systems year-round, resulting in longer radiator life.

BENEFITS

- Protection for at least 650,000 km (8,000) hours for trucks and bus, 250,000 km (6,000hrs) for passenger cars or 32,000 hours (5 years) for stationery engines.
- High boiling point gives better cooling performance in high temperature condition.
- Excellent anti-foam properties.
- Protects the radiator against rust & corrosion.
- Compatible with ordinary summer coolant.
- Protection against excessive evaporation.
- Provides year round cooling properties

PERFORMANCE LEVEL

- BS 6580-2010
- ASTM D3306 /D4656
- Case New Holland MAT 3624
- CAT A4.05.09.01
- Cummins IS Series u N14
- DAF 74002
- Daimler 325.3
- Detroit Diesel Series 50&60
- Deutz/MWM 0199-99-2091/8
- Ford WSS-M97B44-D
- Land-Rover WSS-M97B44-D
- Komatsu 07.892(2009)
- MAN 324 Type SNF
- MTU MTL 5048
- Wartsila DLP799861
- VW VW/Audi TL-774D =G12
- Hyundai/Kia – Suitable for use
- Janbacher TA 1000-0204
- Korean Standards KSM 2142
- Liebherr MDI-36-130
- Mazda MEZ MN 121D
- Porshe Suitable for use
- Volvo Whole Group

AUTOCOOL LL (LONG LIFE) 33%, 50%, 100%

PRODUCT TYPICAL CHARACTERISTICS

AUTOCOOL LL	Units	33%	50%	100%
Specific Gravity @ 20 Deg Celcius		1.054	1.079	1.110
Reserve Alkalinity, ASTM D1121	ml	2	2.8	6
Density at 20 Deg Celcius ASTM D 4052	kg/L	1.052	1.077	1.108
pH value (33%) ASTM D1287		8.49	8.64	8.45
Freezing Protection (50%), oC ASTM D1177		-23	-49	-32
Foam, break time (ASTM D1881)	Seconds	<2	<2	<2
Amine	%	<0.1	<0.1	<0.1
Borate	mg/L	<1	0	<1
Silicate	mg/L	4	23	31
Nitrate	ppm	<2	<2	<2
Flash point, COC oC		106	112	134
Colour		Fluorescent GREEN	Fluorescent GREEN	Fluorescent GREEN

ADNOC BRAKE FLUID DOT3, DOT4

DESCRIPTION

Brake Fluid DOT3, and **DOT4** are formulated as non petroleum chemical fluids for use in the hydraulic brake and clutch system of automotive vehicles. They possess high boiling points and low pour points. They do not affect natural or synthetic rubber washers. They offer protection against corrosion and rusting of metal parts.

APPLICATIONS

Brake Fluid DOT3 and **DOT4** are suitable for all hydraulic brake and clutch, disc and drum systems where such type of fluid is specified.

ADVANTAGES

- Compatible with other brands meeting similar specifications.
- Good protection against corrosion and rust

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	VALUE		Test Methods
Grade	-	DOT 3	DOT 4	-
ERBP	°C	245	260	ASTM D-1120
pH	-	10.0	8.25	ASTM D-1287
Viscosity @ 100°C	mm^2/s	2.060	2.105	ASTM D-445
Specific Gravity @ 20°C	mm^2/s	1.0340	1.0397	ASTM D-1298
Color	-	Yellowish	Yellowish	Visual

ADNOC VOYAGER 3-WHEELER SPECIAL PLUS CP SAE 20W-50

DESCRIPTION

ADNOC Voyager 3-Wheeler Special Plus CP is a synthetic base, shear-stable, multigrade, multifunctional lubricant developed specifically for 3-wheeler vehicles equipped with 4-stroke air/liquid cooled gasoline engines. Synthetic base technology and carefully selected additives provide excellent protection against wear, deposits formation and thermal breakdown, keeping the performance throughout the full oil service life in all types of operation like driving in the city, highway or under harsh conditions.

APPLICATIONS

ADNOC Voyager 3-Wheeler Special Plus CP is recommended for use in four-stroke gasoline powered engines used in 3-wheeler vehicles where a SAE 20W-50 viscosity grade and API SL performance level are required. It also provides protection for vehicles with combined engine and transmission sets with oil-immersed clutches where the same oil lubricates the engine, the clutch and the transmission below is required.

BENEFITS

- Full protection for engine, clutch and transmission
- High thermal stability and oxidation resistance
- Long engine life
- Keeps the engine cool on long rides
- Low oil consumption
- Optimized frictional properties that deliver smooth clutch operation
- Reduced engine wear and deposits even in adverse conditions

PERFORMANCE LEVEL

- API SL
- JASO T 903:2016 MA/MA2

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		20W-50	
Density @15°C	kg/L	0.870	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	156.3	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	18.50	ASTM D445
Viscosity Index	-	133	ASTM D2270
CCS Viscosity	cP	7500	ASTM D5293
- CCS Temperature	°C	-15	
Pour Point	°C	-33	ASTM D97
Flash Point, COC	°C	230	ASTM D92
Color	-	Red	Visual

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC FLUSHING OIL

DESCRIPTION

ADNOC FLUSHING OIL is a low viscosity, straight mineral oil designed for flushing lubricating systems in general.

APPLICATIONS

After draining used sump oils from warm engines, the drain plugs should be reinserted and the engines refilled to the minimum oil level.

Engines may then be run for 2 to 3 minutes under tick-over conditions, in order to circulate the oil and effectively wash the inner surfaces of the engine.

Engines should not be run under load conditions while flushing oil is in use.

After circulation, the engine should be switched off, the drain plug removed and the charge of flushing oil drained from the engine. If the flushing oil appears to be excessively dark in colour, then the flushing operation may be repeated until only mild discolouration relative to the appearance of new flushing oil is observed. Finally, drain the flushing oil before replacing the drain plug and charging the engine with new lubricating engine oil

TYPICAL INSPECTIONS

The values shown here are representative of current production and may vary within modest range

Typical Inspections ADNOC		ADNOC Flushing Oil
Specific Gravity @ 15 oC		0.868
Kinematic Viscosity	@ 40 °C, cSt	30
	@ 100 °C, cSt	5.3
Viscosity Index		108
Flash Point, COC, oC		222

BENEFITS

- Pure oil compatible with all types of engine oils.
- Effective in cleansing mobile sludge from inner engine surfaces

ADNOC SUPREME PLUS 2T ENGINE OIL

DESCRIPTION

Supreme Plus 2T Engine Oil is an-advanced technology top graded 2-stroke motor oil formulated with fully synthetic base oil and low-ash additive package to release maximum power with minimum drag.

APPLICATIONS

Supreme Plus 2T Engine Oil is recommended for high performance motorcycles, especially for road use. It is also recommended for smaller engines fitted in Scooters, Lawn mowers and other small equipment. It should be added with gasoline in the ratio recommended by the equipment manufacturer.

BENEFITS

- The superior combustion characteristics of the special blend of unique fully synthetic oil and additives significantly reduce visible smoke in exhaust emission providing environmental friendly lubricants.
- Controls Combustion Chamber and Spark Plug deposit build-up.
- Excellent miscibility with Gasoline.
- Keeps pistons, rings, plugs and exhaust ports clean

PERFORMANCE LEVEL

JASO	FD
API	TC
ISO	L-EGD

PRODUCT TYPICAL CHARACTERISTICS

Properties		Units	VALUE	Test Methods
Grade		-	-	-
Specific Gravity	@ 15°C	-	0.8720	ASTM D-1298
Viscosity	@ 40°C	mm^2/s	-	ASTM D445
	@ 100°C	mm^2/s	9.00	ASTM D445
Viscosity Index		-	-	ASTM D2270
Flash Point	PMCC	°C	70	ASTM D-93
Pour Point		°C	-30	ASTM D-97
Color		-	2.0	ASTM D-1500

ADNOC SUPREME 2T ENGINE OIL

DESCRIPTION

Supreme 2T Engine Oil is a semi-synthetic two-cycle oil formulated from a special blend of mineral and synthetic oil and low-ash additive package to release maximum power with minimum drag.

APPLICATIONS

Supreme 2T Engine Oil is recommended for high performance, motorcycles, especially for road use. It is also recommended for smaller engine fitted in scooters, lawn mowers and other small equipment. It should be added with gasoline in the ratio recommended by the equipment manufacturer.

BENEFITS

- Superior combustion characteristics of the special blend of Semi-Synthetic and highly refined mineral oils and additives, significantly reduce visible smoke in exhaust emission. Providing environmental friendly lubricants.
- Controls Combustion Chamber and Spark Plug deposit build-up.
- Excellent miscibility with gasoline.
- Keeps pistons, rings, plugs and exhaust ports clean

PERFORMANCE LEVEL

JASO	FD
API	TC
ISO	L-EGD

PRODUCT TYPICAL CHARACTERISTICS

Properties		Units	VALUE	Test Methods
Grade		-	-	-
Specific Gravity	@ 15°C	-	0.8720	ASTM D-1298
Viscosity	@ 40°C	mm^2/s	-	ASTM D445
	@ 100°C	mm^2/s	9.0	ASTM D445
Viscosity Index		-	-	ASTM D2270
Flash Point	PMCC	°C	70	ASTM D-93
Pour Point		°C	-30	ASTM D-97
Color		-	2.0	ASTM D-1500

ADNOC VOYAGER MPX4-F SAE 20W-50

DESCRIPTION

ADNOC Voyager MPX4-F is a mineral, shear-stable, multigrade, multifunctional lubricant developed specifically for gasoline motorcycle engines, clutches and gearboxes working under severe duty conditions. Highly refined base oils and carefully selected additives provide effective protection against wear, deposits formation and thermal breakdown, keeping the performance throughout the full oil service life.

APPLICATIONS

ADNOC Voyager MPX4-F is recommended for use in four-stroke gasoline motorcycle Engine, Clutch and Gear (ECG) applications such as Honda, Suzuki, Kawasaki, Yamaha, Bajaj and other motorcycles that require API SF specification.

BENEFITS

- Good protection for engine, clutch and transmission
- High thermal stability and oxidation resistance
- Low oil consumption
- Reduced engine wear and deposits even in adverse conditions

PERFORMANCE LEVEL

API SF

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		20W-50	
Density @15°C	kg/L	0.872	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	158.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	18.20	ASTM D445
Viscosity Index	-	125	ASTM D2270
CCS Viscosity	cP	8000	ASTM D5293
- CCS Temperature	°C	-15	
Pour Point	°C	-27	ASTM D97
Flash Point, COC	°C	230	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER MPX4-G SAE 20W-50

DESCRIPTION

ADNOC Voyager MPX4-G is a mineral, shear-stable, multigrade, multifunctional lubricant developed specifically for gasoline motorcycle engines, clutches and gearboxes working under severe duty conditions. Highly refined base oils and carefully selected additives provide effective protection against wear, deposits formation and thermal breakdown, keeping the performance throughout the full oil service life.

APPLICATIONS

ADNOC Voyager MPX4-G is recommended for use in four-stroke gasoline motorcycle Engine, Clutch and Gear (ECG) applications such as Honda, Suzuki, Kawasaki, Yamaha, Bajaj and other motorcycles that require API SG specification.

BENEFITS

- Good protection for engine, clutch and transmission
- High thermal stability and oxidation resistance
- Long engine life
- Low oil consumption
- Reduced engine wear and deposits even in adverse conditions
- Wide operating conditions from mild to severe

PERFORMANCE LEVEL

API SG

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		20W-50	
Density @15°C	kg/L	0.872	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	158.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	18.20	ASTM D445
Viscosity Index	-	125	ASTM D2270
CCS Viscosity	cP	8000	ASTM D5293
- CCS Temperature	°C	-15	
Pour Point	°C	-27	ASTM D97
Flash Point, COC	°C	230	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER MPX4-L
SAE 10W-30; 10W-40; 20W-40; 20W-50

DESCRIPTION

ADNOC Voyager MPX4-L is a series of synthetic base, shear-stable, multigrade, multifunctional lubricants developed specifically for gasoline motorcycle engines, clutches and gearboxes working under severe duty conditions. Synthetic base technology and carefully selected additives provide excellent protection against wear, deposits formation and thermal breakdown, keeping the performance throughout the full oil service life.

APPLICATIONS

ADNOC Voyager MPX4-L is highly recommended for use in four-stroke gasoline motorcycle Engine, Clutch and Gear (ECG) applications such as Honda, Suzuki, Kawasaki, Yamaha, Bajaj and other motorcycles that require the specifications below

BENEFITS

- Full protection for engine, clutch and transmission
- High thermal stability and oxidation resistance
- Long engine life
- Low oil consumption
- Optimized frictional properties that deliver smooth clutch operation
- Reduced engine wear and deposits even in adverse conditions
- Wide operating conditions from mild to severe

PERFORMANCE LEVEL

- API SL
- JASO T 903:2016 MA/MA2

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE				Test Methods
		10W-30	10W-40	20W-40	20W-50	
Density @15°C	kg/L	0.865	0.861	0.871	0.87	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	11.03	100.6	111.0	156.3	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	69.00	14.44	13.5	18.50	ASTM D445
Viscosity Index	-	151	145	119	133	ASTM D2270
CCS Viscosity	cP	4500	6700	5100	7500	ASTM D5293
- CCS Temperature	°C	-25	-25	-15	-15	
Pour Point	°C	-36	-33	-30	-33	ASTM D97
Flash Point, COC	°C	220	220	220	230	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER MPX4-N SAE 15W-50; 20W-50

DESCRIPTION

ADNOC Voyager MPX4-N is a series of premium, synthetic-blend, shear-stable, multigrade, multifunctional lubricants developed specifically for gasoline motorcycle engines, clutches and gearboxes working under severe duty conditions. Its high frictional properties guarantee the clutch engagement for enhanced acceleration. Synthetic-blend formulation and carefully selected additives provide excellent protection against wear, deposits formation and thermal breakdown, keeping the performance throughout the full oil service life.

APPLICATIONS

ADNOC Voyager MPX4-N is highly recommended for use in four-stroke gasoline motorcycle Engine, Clutch and Gear (ECG) applications such as Honda, Suzuki, Kawasaki, Yamaha, Bajaj and other motorcycles that require the specifications below.

BENEFITS

- Excellent oxidation stability under exposure to high operating temperature
- Optimized frictional properties that deliver smooth clutch operation
- Protects vital gear & clutch components to maximize their service life
- Provides exceptional protection against rust and keeps engine parts protected from wear
- Provides long drain intervals
- Wide operating conditions from mild to severe

PERFORMANCE LEVEL

- API SN
- JASO T 903:2016 MA/MA2

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE		Test Methods
		15W-50	20W-50	
Density @15°C	kg/L	0.865	0.868	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	134.3	158.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	18.10	18.00	ASTM D445
Viscosity Index	-	150	148	ASTM D2270
CCS Viscosity	cP	6000	7500	ASTM D5293
- CCS Temperature	°C	-20	-15	
Pour Point	°C	-36	-33	ASTM D97
Flash Point, COC	°C	230	230	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER MPX4-N SAE 10W-30; 10W-40

DESCRIPTION

ADNOC Voyager MPX4-N is a series of premium, fully synthetic, shear-stable, multigrade, multifunctional lubricants developed specifically for gasoline motorcycle engines, clutches and gearboxes working under severe duty conditions. Its high frictional properties guarantee the clutch engagement for enhanced acceleration. Full Synthetic formulation and carefully selected additives provide excellent protection against wear, deposits formation and thermal breakdown, keeping the performance throughout the full oil service life.

APPLICATIONS

ADNOC Voyager MPX4-N is highly recommended for use in four-stroke gasoline motorcycle Engine, Clutch and Gear (ECG) applications such as Honda, Suzuki, Kawasaki, Yamaha, Bajaj and other motorcycles that require the specifications below.

BENEFITS

- Excellent oxidation stability under exposure to high operating temperature
- Optimized frictional properties that deliver smooth clutch operation
- Protects vital gear & clutch components to maximize their service life
- Provides exceptional protection against rust and keeps engine parts protected from wear
- Provides long drain intervals
- Reduced fuel consumption (SAE 10W-30)*
- Wide operating conditions from mild to severe

PERFORMANCE LEVEL

- API SN
- JASO T 903:2016 MA/MA2

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE		Test Methods
		10W-30	10W-40	
Density @15°C	kg/L	0.853	0.856	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	76.50	96.88	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	11.85	14.53	ASTM D445
Viscosity Index	-	150	156	ASTM D2270
CCS Viscosity	cP	4900	5900	ASTM D5293
- CCS Temperature	°C	-25	-25	
Pour Point	°C	-42	-39	ASTM D97
Flash Point, COC	°C	210	220	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER SPX4-L SAE 10W-30; 10W-40; 20W-40

DESCRIPTION

ADNOC Voyager SPX4-L is a series of synthetic base, shear-stable, multigrade, scooter engine oils recommended for scooters engines working under severe duty conditions. Its low frictional properties guarantee minimum engine friction to maximize fuel economy and ensure minimum power loss, resulting in improved power release and acceleration. Synthetic base technology and carefully selected additives provide excellent protection against wear, deposits formation and thermal breakdown, keeping the performance throughout the full oil service life.

APPLICATIONS

ADNOC Voyager SPX4-L is highly recommended for use in modern four-stroke gasoline scooter engines, where the engine is independently lubricated in applications such as the ones the scooters are fitted with belt-type continuously variable automatic transmissions, including models from Honda, Yamaha and others that require the specifications below

BENEFITS

- High thermal stability and oxidation resistance
- Long engine life
- Low oil consumption
- Optimized frictional properties that deliver smooth ride
- Reduced engine wear and deposits even in adverse conditions
- Wide operating conditions from mild to severe

PERFORMANCE LEVEL

- API SL
- JASO T 903:2016 MB

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE			Test Methods
		10W-30	10W-40	20W-40	
Density @15°C	kg/L	0.853	0.856	0.866	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	76.50	96.88	108.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	11.85	14.53	14.00	ASTM D445
Viscosity Index	-	150	156	130	ASTM D2270
CCS Viscosity	cP	4900	5900	6500	ASTM D5293
- CCS Temperature	°C	-25	-25	-15	
Pour Point	°C	-42	-39	-36	ASTM D97
Flash Point, COC	°C	210	220	220	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER SPX4-N SAE 10W-30; 10W-40; 20W-40

DESCRIPTION

ADNOC Voyager SPX4-N is a series of premium, fully synthetic, shear-stable, multigrade, scooter engine oils recommended for scooters working under severe duty conditions. Its low frictional properties guarantee minimum engine friction to maximize fuel economy and ensure minimum power loss, resulting in improved power release and acceleration. Full Synthetic formulation and carefully selected additives provide excellent protection against wear, deposits formation and thermal breakdown, keeping the performance throughout the full oil service life.

APPLICATIONS

ADNOC Voyager SPX4-N is highly recommended for use in modern four-stroke gasoline scooter engines, where the engine is independently lubricated in applications such as the ones the scooters are fitted with belt-type continuously variable automatic transmissions, including models from Honda, Yamaha and others that require the specifications below

BENEFITS

- Excellent oxidation stability under exposure to high operating temperature
- Stable viscosity at both low and high temperatures
- Provides long drain intervals
- Optimized frictional properties that deliver smooth ride
- Provides exceptional protection against rust and keeps engine parts protected from wear
- Most operating conditions from mild to severe
- Low oil consumption

PERFORMANCE LEVEL

- API SN
- JASO T 903:2016 MB

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE			Test Methods
		10W-30	10W-40	20W-40	
Density @15°C	kg/L	0.860	0.864	0.866	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	74.00	103.5	105.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	11.10	14.72	14.40	ASTM D445
Viscosity Index	-	140	147	140	ASTM D2270
CCS Viscosity	cP	5000	5800	7000	ASTM D5293
- CCS Temperature	°C	-25	-25	-15	
Pour Point	°C	-42	-39	-36	ASTM D97
Flash Point, COC	°C	210	220	220	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC GREASE MP

DESCRIPTION

ADNOC Grease MP is a series of multi-purpose Lithium soap greases specifically formulated to provide effective oxidation resistance, rust and corrosion protection. The use of Lithium soap provides excellent structural stability throughout their recommended temperature range. It They posses high chemical stability, resistance to thermal breakdown and deterioration. They also resist water wash-out.

APPLICATIONS

ADNOC Grease MP is recommended for lubrication of rolling element and needle bearings. The heavier consistency is preferred for vertical shaft and outer race rotating applications. They are suitable for use under either wet or dry conditions. It is also recommended for the lubrication of plain bearings, cams, ways and other sliding parts when loads are normal and no shock loads are experienced. It is suitable for moderate automotive wheel bearing not subject to high temperature/high loads and chassis service.

BENEFITS

- Protection against rust and corrosion
- Resistance to water-washing and wet conditions
- Good dispensing characteristics
- Wide range of usable temperature

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	NLGI				Test Methods
		0	1	2	3	
Color	-	Brown				Visual
Texture	-	Smooth				Visual
Thickener Type	-	Lithium Soap				-
Base Oil Type	-	Mineral				-
Base Oil Viscosity @40°C	mm^2/s	220.0	220.0	220.0	220.0	ASTM D445
Base Oil Viscosity @100°C	mm^2/s	16.00	16.00	16.00	16.00	ASTM D445
Dropping Point, Min.	°C	185	190	197	200	ASTM D2265
Worked Penetration @25°C	mm/10	370	325	280	235	ASTM D217
Oil Separation	%mass	4	3	2	2	ASTM D1742
Operating Temp, Min.	°C	-20	-20	-20	-20	-
Operating Temp, Max.	°C	+100	+100	+125	+130	-

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC GREASE CS EP

DESCRIPTION

ADNOC Grease CS EP is an extreme pressure Lithium soap grease which contains oxidation, rust and corrosion inhibitors and provides excellent EP properties. The use of a lithium soap base ensures effective resistance to softening under severe working conditions, efficient water resistance and a consistency which remains relatively constant over the recommended range of operating temperatures. It is non-corrosive to both steel and copper and exhibits effective resistance to bleeding and superior resistance to water washout.

APPLICATIONS

ADNOC Grease CS EP is recommended for lubrication of plain and rolling element bearings in normal through heavy-duty industrial applications. It is suitable where loads are high or shock loads are present. It resists water washing and provides rust protection for bearings if water is present. Its low consistency is particularly suitable for use in centralized lubrication system and can be used for both automotive and industrial applications.

BENEFITS

- Superior lubrication under heavy and shock loading
- Excellent load carrying ability
- Excellent resistance to water washing
- Effective rust protection and corrosion resistance

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	NLGI	Test Methods
		00	
Color	-	Brown	Visual
Texture	-	Smooth	Visual
Thickener Type	-	Lithium Soap	-
Base Oil Type	-	Mineral	-
Base Oil Viscosity @40°C	mm^2/s	219	ASTM D445
Base Oil Viscosity @100°C	mm^2/s	19	ASTM D445
Dropping Point, Min.	°C	165	ASTM D2265
Worked Penetration @25°C	mm/10	430	ASTM D217
Oil Separation	%mass	4	ASTM D1742
Four-Ball Welding Load	Kg	>270	ASTM D2596
Operating Temp, Min.	°C	-20	-
Operating Temp, Max.	°C	+100	-

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC GREASE EP

DESCRIPTION

ADNOC Grease EP is an extreme pressure Lithium soap grease which contains oxidation, rust and corrosion inhibitors and provides excellent EP properties. The use of a lithium soap base ensures effective resistance to softening under severe working conditions, efficient water resistance and a consistency which remains relatively constant over the recommended range of operating temperatures. It is non-corrosive to both steel and copper and exhibits effective resistance to bleeding and superior resistance to water washout.

APPLICATIONS

ADNOC Grease EP is recommended for lubrication of plain and rolling element bearings in normal through heavy-duty industrial applications. It is suitable where loads are high or shock loads are present. It resists water washing and provides rust protection for bearings if water is present. The softer grades are particularly suitable for use in centralized lubrication system and can be used for both automotive and industrial applications.

BENEFITS

- Superior lubrication under heavy and shock loading
- Excellent load carrying ability
- Excellent resistance to water washing
- Effective rust protection and corrosion resistance

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	NLGI					Test Methods
		00	0	1	2	3	
Color	-	Brown					Visual
Texture	-	Smooth					Visual
Thickener Type	-	Lithium Soap					-
Base Oil Type	-	Mineral					-
Base Oil Viscosity @40°C	mm^2/s	219.0	219.0	219.0	219.0	219.0	ASTM D445
Base Oil Viscosity @100°C	mm^2/s	19.00	19.00	19.00	19.00	19.00	ASTM D445
Dropping Point, Min.	°C	165	180	190	197	200	ASTM D2265
Worked Penetration @25°C	mm/10	430	370	325	280	235	ASTM D217
Oil Separation	%mass	4	4	3	2	2	ASTM D1742
Four-Ball Welding Load	Kg	>270	>270	>270	>270	>270	ASTM D2596
Operating Temp, Min.	°C	-20	-20	-20	-20	-20	-
Operating Temp, Max.	°C	+160	+100	+100	+100	+100	-

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC GREASE LX

DESCRIPTION

ADNOC Grease LX is a Lithium Complex soap grease which contains oxidation, rust and corrosion inhibitors. The use of a lithium complex soap base ensures effective resistance to softening under severe working conditions, efficient water resistance and a consistency which remains relatively constant over the recommended range of operating temperatures. It is non-corrosive to both steel and copper and exhibits effective resistance to bleeding and superior resistance to water washout.

APPLICATIONS

ADNOC Grease LX is recommended for lubrication of plain and rolling element bearings in normal through heavy-duty industrial applications. It resists water washing and provides rust protection for bearings if water is present. It is suitable for use in a number of industrial and automotive applications including, fifth wheel, wheel bearings of vehicles subjected to occasional high temperature as may occur in vehicles with disc brakes and it is ideal for the lubrication of bearings used in industry under high operating temperatures. It does not provide protection to applications that are subject to high and shock loads. Operating temperatures can vary between -20°C to +180°C.

BENEFITS

- Longer life at higher temperatures
- Resists softening at elevated temperatures
- Excellent resistance to water washing
- Effective rust protection and corrosion resistance
- Multi-purpose applications including sealed-for-life bearings

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	NLGI		Test Methods
		2	3	
Color	-	Green		Visual
Texture	-	Smooth		Visual
Thickener Type	-	Lithium Complex Soap		-
Base Oil Type	-	Mineral		-
Base Oil Viscosity @40°C	mm^2/s	190.0	190.0	ASTM D445
Base Oil Viscosity @100°C	mm^2/s	17.00	17.00	ASTM D445
Dropping Point, Min.	°C	265	260	ASTM D2265
Worked Penetration @25°C	mm/10	280	235	ASTM D217
Oil Separation	%mass	2	5	ASTM D1742
Water Washout	%	2.5	1.5	ASTM D1264
Operating Temp, Min.	°C	-20	-10	-
Operating Temp, Max.	°C	+160	+180	-

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC GREASE LX EP

DESCRIPTION

ADNOC Grease LX EP is an extreme pressure Lithium Complex soap grease which contains oxidation, rust and corrosion inhibitors and provides excellent EP properties. The use of a lithium complex soap base ensures effective resistance to softening under severe working conditions, efficient water resistance and a consistency which remains relatively constant over the recommended range of operating temperatures. It is non-corrosive to both steel and copper and exhibits effective resistance to bleeding and superior resistance to water washout.

APPLICATIONS

ADNOC Grease LX EP is recommended for lubrication of plain and rolling element bearings in normal through heavy-duty industrial applications. It is suitable where loads are high or shock loads are present. It resists water washing and provides rust protection for bearings if water is present. It is suitable for use in a number of industrial and automotive applications including, fifth wheel, wheel bearings of vehicles subjected to occasional high temperature as may occur in vehicles with disc brakes and it is ideal for the lubrication of bearings used in industry under high operating temperatures. Operating temperatures can vary between -20°C to +180°C.

BENEFITS

- Superior lubrication under heavy and shock loading conditions
- Longer life at higher temperatures
- Resists softening at elevated temperatures
- Excellent load carrying ability
- Excellent resistance to water washing
- Effective rust protection and corrosion resistance

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	NLGI		Test Methods
		2	3	
Color	-	Green		Visual
Texture	-	Smooth		Visual
Thickener Type	-	Lithium Complex Soap		-
Base Oil Type	-	Mineral		-
Base Oil Viscosity @40°C	mm^2/s	190.0	190.0	ASTM D445
Base Oil Viscosity @100°C	mm^2/s	17.00	17.00	ASTM D445
Dropping Point, Min.	°C	265	260	ASTM D2265
Worked Penetration @25°C	mm/10	280	235	ASTM D217
Oil Separation	%mass	2	5	ASTM D1742
Water Washout	%	5	1.5	ASTM D1264
Four-Ball Welding Load	Kg	>270	>270	ASTM D2596
Operating Temp, Min.	°C	-20	-10	-
Operating Temp, Max.	°C	+160	+180	-

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC GREASE MOLY MP

DESCRIPTION

ADNOC Grease Moly MP is a multipurpose Lithium soap grease formulated with highly refined base oils and carefully selected additves that provide protection against oxidation, rust, corrosion and wear. It also contains molybdenum disulfide which provides solid film lubrication to reduce friction and wear. The use of a lithium soap base ensures effective resistance to softening under severe working conditions, efficient water resistance and a consistency which remains relatively constant over the recommended range of operating temperatures. It is non-corrosive to both steel and copper and exhibits effective resistance to bleeding and superior resistance to water washout. It forms an adhering film on metallic surfaces to provide additional protection against scoring.

APPLICATIONS

ADNOC Grease Moly MP is recommended for automotive and industrial applications where a lithium grease with molybdenum is required. Good for automotive chassis and bearing applications in cars, vans, trucks, mining, construction vehicles and tractors, especially those operating in dusty or wet areas.

BENEFITS

- Excellent wear protection
- Good load carrying ability
- Long service life
- Resistant to water washing
- Good dispensing characteristics
- Protection against rust and corrosion

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	NLGI	Test Methods
		2	
Color	-	Metallic Gray	Visual
Texture	-	Smooth	Visual
Thickener Type	-	Lithium Soap	-
Base Oil Type	-	Mineral	-
Base Oil Viscosity @40°C	mm^2/s	220.0	ASTM D445
Base Oil Viscosity @100°C	mm^2/s	16.00	ASTM D445
Dropping Point, Min.	mm/10	197	ASTM D2265
Worked Penetration @25°C	°C	280	ASTM D217
Oil Separation	%mass	2	ASTM D1742
Water Washout	%	1.5	ASTM D1264
Operating Temp, Min.	°C	-20	-
Operating Temp, Max.	°C	+125	-

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
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ADNOC GREASE MOLY EP (LF)

DESCRIPTION

ADNOC Grease Moly EP (LF) is an extreme pressure Lithium soap grease which contains oxidation, rust and corrosion inhibitors and provides excellent EP properties. The use of a lithium soap base ensures effective resistance to softening under severe working conditions, efficient water resistance and a consistency which remains relatively constant over the recommended range of operating temperatures. It is non-corrosive to both steel and copper and exhibits effective resistance to bleeding and superior resistance to water washout. It forms an adhering film on metallic surfaces to provide additional protection against scoring. This makes the grease especially suitable for equipment operating under slow-speed/high-load conditions.

APPLICATIONS

ADNOC Grease Moly EP (LF) is recommended for automotive and industrial applications where equipment is highly loaded and operates at slow speed. Good for automotive chassis and bearing applications in cars, vans, trucks, mining, construction vehicles and tractors, especially those operating in dusty or wet areas.

BENEFITS

- Excellent wear protection
- Excellent load carrying ability
- Effective retention under shock load conditions
- Long service life
- Resistant to water washing
- Good dispensing characteristics
- Protection against rust and corrosion

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	NLGI	Test Methods
		2	
Color	-	Metallic Gray	Visual
Texture	-	Smooth	Visual
Thickener Type	-	Lithium Soap	-
Base Oil Type	-	Mineral	-
Base Oil Viscosity @40°C	mm^2/s	219.0	ASTM D445
Base Oil Viscosity @100°C	mm^2/s	19.00	ASTM D445
Dropping Point, Min.	mm/10	197	ASTM D2265
Worked Penetration @25°C	°C	280	ASTM D217
Oil Separation	%mass	2	ASTM D1742
Water Washout	%	1.5	ASTM D1264
Four-Ball Welding Load	Kg	>270	ASTM D2596
Operating Temp, Min.	°C	-20	-
Operating Temp, Max.	°C	+125	-

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
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INDUSTRIAL

INDUSTRIAL

ADNOC Lubricants | Product Catalog

ADNOC HYDRAULIC OIL HD 10W

DESCRIPTION

ADNOC Hydraulic Oil HD 10W is a mineral based hydraulic fluid manufactured to meet the requirements of hydraulic equipment manufacturers for rust and oxidation inhibited and anti-wear mineral oil hydraulic fluids. They are compatible with the seal materials commonly used in hydraulic systems.

APPLICATIONS

ADNOC Hydraulic Oil HD 10W is recommended primarily for use in hydraulic equipment, but is suitable for other duties in which lubricants with good oxidation stability and lubrication performance are required. The quality of its base oils and additives allow its use in lightly loaded gears and for use as circulating oil in applications where a rust and oxidation inhibited oil is required.

BENEFITS

- Good service life
- Good anti-wear properties

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	Results	Test Methods
Density @15°C	kg/L	0.886	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	46.50	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	6.790	ASTM D445
Viscosity Index	-	98	ASTM D2270
Pour Point	°C	-33	ASTM D97
Flash Point, COC	°C	225	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC G II HYDRAULIC OIL H

DESCRIPTION

ADNOC G II Hydraulic Oil H is a series of hydraulic fluids formulated with high quality, premium and stable hydrotreated Group II base oils and special additives that provides, anti-wear, anti-corrosion, anti-rust and anti-oxidation characteristics. They also deliver excelent air release and water separability properties and can operate in a widely varying ambient temperatures.

APPLICATIONS

ADNOC G II Hydraulic Oil H is recommended for most types of hydraulic systems, moderately loaded gears and bearing lubricated by circulation bath and ring oiling. It is available in a wide range of viscosities to meet a variety of design and operating requirements of hydraulic systems of construction, agricultural, industrial, marine and machinery tools equipment fitted with gear, vane or piston pumps.

BENEFITS

- Excellent oxidation resistance under the most severe working conditions provides long oil life
- Load carrying and anti-wear properties protect pumps and other moving parts
- Superior protection against corrosion and rust
- Excellent resistance to foaming and air entrainment
- Compatible with normal hydraulic sealing materials
- Excellent hydrolytic stability means minimal degradation from contact with water and good water separation characteristics
- Excellent filterability

PERFORMANCE LEVEL

Specifications	ISO VG				
	22	32	46	68	100
AFNOR NF E 48 603 HM					
ASTM D6158 Type HM		X	X	X	X
Fives Cincinnati P-68		X			
Fives Cincinnati P-69				X	
Fives Cincinnati P-70			X		
Parker Hannifin (Denison) HF0, HF1 and HF2		X	X	X	
DIN 51524 Part 2 (HLP)		X	X	X	X
Eaton Brochure 03-401-2010		X	X	X	
Eaton E-FDGN-TB002-E		X	X	X	
General Motors LS2 AW Hydraulic Oil					
ISO 11158 Categories HM and HV		X	X	X	X

ADNOC G II HYDRAULIC OIL H

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO VG					Test Methods
		22	32	46	68	100	
Density @15°C	kg/L	0.840	0.845	0.852	0.865	0.875	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	21.98	32.13	45.68	68.03	98.76	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	4.347	5.480	6.890	8.930	11.44	ASTM D445
Viscosity Index	-	105	105	105	104	102	ASTM D2270
Pour Point	°C	-33	-33	-30	-27	-21	ASTM D97
Flash Point, COC	°C	200	214	220	230	240	ASTM D92
TAN	mg KOH/g	0.4	0.4	0.4	0.4	0.4	ASTM D974

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
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ADNOC HYDRAULIC OIL ZF

DESCRIPTION

ADNOC Hydraulic Oil ZF is an antiwear hydraulic oil formulated with a zinc-free, ashless type antiwear additive designed to provide extended pump life in high pressure conditions. Ashless technology is designed to provide anti-wear, anti-rust and anti-oxidation protection that result in an outstanding performance.

APPLICATIONS

ADNOC Hydraulic Oil ZF is recommended for use in hydraulic systems operating under moderate to severe conditions in mobile and industrial service even in environmentally sensitive applications. It can also be used in mobile hydraulic fluid power transmission systems and general machine lubrication. It is suitable for older design hydraulic pumps containing silver or silver-plated parts.

BENEFITS

- Excellent ant-wear protection and filterability
- Excellent thermal and hydrolytic stability
- Outstanding rust protection and foaming resistance
- Reduce fish toxicity versus zinc containing products
- Suitable for applications that contains yellow metals found in pumps
- Superior demulsibilty helps in faster water separation and resists emulsion formation

PERFORMANCE LEVEL

- DIN 51524-2 HLP
- Parker Hannifin (Denison) HF-0; HF-1; HF-2
- Fives Cincinnati P-70
- Eaton (Vickers) I-286-S (Stationary); M-2950-S (Mobile)

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO VG	Test Methods
		46	
Kinematic Viscosity @40°C	mm^2/s	45.90	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	6.680	ASTM D445
Viscosity Index	-	97	ASTM D2270
Pour Point	°C	-18	ASTM D97
Flash Point, COC	°C	216	ASTM D92
FZG Gear Test, Fail Load Stage	-	11	DIN 51354
Rust Test	-	Pass	ASTM D665
Zinc	ppm	10	ASTM D4951

Minor variations in product typical test data are to be expected in normal manufacturing.

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ADNOC HYDRAULIC OIL H

DESCRIPTION

ADNOC Hydraulic Oil H is a series of hydraulic fluids formulated with high quality base oils and special additives that provides, anti-wear, anti-corrosion, anti-rust and anti-oxidation characteristics. They also deliver excelent air release and water separability properties and can operate in a widely varying ambient temperatures.

APPLICATIONS

ADNOC Hydraulic Oil H is recommended for most types of hydraulic systems, moderately loaded gears and bearing lubricated by circulation bath and ring oiling. It is available in a wide range of viscosities to meet a variety of design and operating requirements of hydraulic systems of construction, agricultural, industrial, marine and machinery tools equipment fitted with gear, vane or piston pumps.

BENEFITS

- Good oxidation resistance under the most severe working conditions
- Load carrying and anti-wear properties protect pumps and other moving parts
- Superior protection against corrosion and rust
- Excellent resistance to foaming and air entrainment
- Compatible with normal hydraulic sealing materials
- Good hydrolytic stability means minimal degradation from contact with water and good water separation characteristics
- Excellent filterability

PERFORMANCE LEVEL

Specifications	ISO VG						
	10	15	22	32	46	68	100
AFNOR NF E 48 603 HM							
ASTM D6158 Type HM				X	X	X	X
Fives Cincinnati P-68				X			
Fives Cincinnati P-69						X	
Fives Cincinnati P-70					X		
Parker Hannifin (Denison) HF0, HF1 and HF2				X	X	X	
DIN 51524 Part 2 (HLP)		X		X	X	X	X
Eaton Brochure 03-401-2010				X	X	X	
Eaton E-FDGN-TB002-E				X	X	X	
General Motors LS2 AW Hydraulic Oil							
ISO 11158 Categories HM and HV		X		X	X	X	X

ADNOC HYDRAULIC OIL H

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO VG								Test Methods
		10	15	22	32	46	68	100	150	
Density @15°C	kg/L	0.851	0.86	0.85	0.857	0.87	0.882	0.887	0.889	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	9.520	14.32	22.00	31.00	46.00	68.00	97.00	155.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	2.590	3.320	4.300	5.250	6.750	8.700	11.00	15.20	ASTM D445
Viscosity Index	-	102	101	98	98	98	98	98	96	ASTM D2270
Pour Point	°C	-39	-39	-33	-33	-30	-27	-21	-21	ASTM D97
Flash Point, COC	°C	164	184	200	214	220	230	240	240	ASTM D92
TAN	mg KOH/g	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	ASTM D974

Minor variations in product typical test data are to be expected in normal manufacturing.

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ADNOC HYDRAULIC OIL HP

DESCRIPTION

ADNOC Hydraulic Oil HP is a series of high performance, premium-quality, multigrade, shear-stable hydraulic fluids of high viscosity index. They are formulated with high quality base oils and special additives that impart superior viscosity/temperature, anti-wear, anti-corrosion, anti-rust and anti-oxidation characteristics. They also deliver excelent air release and water separability properties and can operate in a widely varying ambient temperatures. The high viscosity index gives great advantage in critical applications where viscosity variation due to temperature fluctuation must be kept to a minimum.

APPLICATIONS

ADNOC Hydraulic Oil HP is recommended for hydraulic systems that are subject to wide temperature ranges of construction, agricultural, industrial, marine and machinery tools equipment fitted with gear, vane or piston pumps.

BENEFITS

- Excellent oxidation resistance under the most severe working conditions provides long oil life
- Load carrying and anti-wear properties protect pumps and other moving parts
- Superior protection against corrosion and rust
- Excellent resistance to foaming and air entrainment
- Compatible with normal hydraulic sealing materials
- Excellent hydrolytic stability means minimal degradation from contact with water and good water separation characteristics
- Excellent filterability

PERFORMANCE LEVEL

Specifications	ISO VG					
	15	22	32	46	68	100
AFNOR NF E 48 603 HM and HV						
ASTM D6158 Type HM and HV			X	X	X	X
Fives Cincinnati P-68			X			
Fives Cincinnati P-69					X	
Fives Cincinnati P-70				X		
Parker Hannifin (Denison) HF0, HF1 and HF2			X	X	X	
DIN 51524 Part 2 (HLP)	X		X	X	X	X
DIN 51524 Part 3 (HVLP)	X		X	X	X	X
Eaton Brochure 03-401-2010			X	X	X	
Eaton E-FDGN-TB002-E			X	X	X	
General Motors LS2 AW Hydraulic Oil						
ISO 11158 Categories HM and HV	X		X	X	X	X

ADNOC HYDRAULIC OIL HP

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO VG						Test Methods
		15	22	32	46	68	100	
Density @15°C	kg/L	0.841	0.860	0.858	0.865	0.874	0.875	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	15.50	22.00	32.00	46.12	68.65	100.7	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	3.900	4.900	6.350	8.213	11.17	14.83	ASTM D445
Viscosity Index	-	150	154	154	154	155	153	ASTM D2270
Pour Point	°C	-30	-36	-42	-39	-36	-33	ASTM D97
Flash Point, COC	°C	150	208	205	214	218	220	ASTM D92
TAN	mg KOH/g	0.4	0.4	0.4	0.4	0.4	0.4	ASTM D974

Minor variations in product typical test data are to be expected in normal manufacturing.

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ADNOC INDUSTRIAL GEAR OIL EP

DESCRIPTION

ADNOC Industrial Gear Oil EP is a series of lead-free, premium-quality, heavy-duty industrial gear lubricants formulated from high-quality base oils and carefully selected additives which provide extreme pressure and anti-wear properties, rust and corrosion protection, increased oxidation stability, improved resistance to foam and excellent high load performance characteristics. It also have excellent oxidation stability and water separability properties.

APPLICATIONS

ADNOC Industrial Gear Oil EP is recommended for industrial enclosed gear drives representing load and speed conditions of extreme severity and also suitable for the lubrication of worm gear units. Although designed primarily for the lubrication of gears, their high overall performance makes it possible to extend their use to system involving gears, plain bearings, rolling bearings and sliding surfaces.

BENEFITS

- Excellent load-carrying capacity
- Outstanding anti-wear properties
- Excellent oxidation stability
- Rust and corrosion protection
- Excellent lubricity and good anti-foam properties
- Minimize friction, resulting in reduced bulk oil temperature
- Effective demulsibility for rapid water separation

PERFORMANCE SPECIFICATIONS

- DIN 51517 PART3
- AGMA 9005-D94
- US Steel 224
- David Brown S1.53 101

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO VG								Test Methods
		68	100	150	220	320	460	680	1000	1500	
Density @15°C	kg/L	0.886	0.894	0.896	0.899	0.9025	0.903	0.925	0.935	0.935	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	68.00	100.0	150.0	220.0	320.0	460.0	680.0	950.0	1500	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	8.655	11.25	14.80	18.75	23.90	30.35	35.85	44.19	58.23	ASTM D445
Viscosity Index	-	98	98	98	95	95	95	85	85	85	ASTM D2270
Pour Point	°C	-24	-24	-21	-18	-15	-12	-9	-3	-3	ASTM D97
Flash Point, COC	°C	234	240	240	238	238	238	240	240	240	ASTM D92

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC SYNGEAR PG

DESCRIPTION

ADNOC SYNGEAR PG is based on Polyalkylene glycol (PAG) base oil designed with carefully selected additives to provide better thermal & oxidation stability, reduce sludge and deposit formation.

APPLICATIONS

Enclosed Gears

- Suitable for Lubrication of worm and gears operating under the most severe conditions (high loads, shocks,extreme temperatures and corrosive atmospheres).

BENEFITS

- High thermal stability : extended oil lifetime thus reducing the formation of deposits.
- Very high viscosity index : mechanical shear stable
- Excellent extreme pressure and anti-wear properties.
- Low coefficient of friction : greater protection for non-ferrous parts, such as the bronze ring gear in worm gears systems, offering an
- energy saving of between 5 and 10% compared with a mineral oil
- Very good static and dynamic anti-corrosion properties(additives in vapour phase).
- Reduction of maintenance costs as a result of signicantly increased life of the lubricant

Note : As PAG lubricants are incompatible with most mineral and synthetic oils (PAO), care should be taken to make sure the two are not mixed.

PERFORMANCE SPECIFICATIONS

- DIN 51517 Part 3 (Group CLP)
- NF-ISO 6743-6 (CKS/CKT category)
- David Brown
- CMDDAVID BROWN

TYPICAL INSPECTION

The values shown in the table are typical of current production figures and may vary within modest range:

Typical Inspections	ISO VG			
	220	320	460	680
Density @ 15 ºC , Kg/m^3	1004	1003	1002.5	1076
Viscosity @ 40 ºC , mm^2/s	220	320	460	680
Viscosity @ 100 ºC , mm^2/s	34	50	71	112
Viscosity Index	202	220	234	265
Pour Point, ºC	-30	-33	-27	-33
Flash Point , COC , ºC	>220	>220	>220	265
Copper Strip Corrosion 100 ºC 24h	1B	1B	1B	1B
FZG Scuffing Test	12	12	12	12

ADNOC SYNGEAR PA

DESCRIPTION

ADNOC SYNGEAR PA is based on Polyalphaolefin (PAO) base oil and carefully selected additive package to provide exceptional extreme pressure properties, prevent gear scoring, spalling and pitting.

APPLICATIONS

Enclosed Gears, Bearings & Gear Couplings.
Suitable for Lubrication of enclosed industrial gears, bevel , spur , worm ,helical gears operating under the most extreme conditions of load and temperature (running at very low or very high temperature).
ADNOC SYNGEAR PA recommended for use in wide variety of heavily loaded bearings and gear couplings.

BENEFITS

- Increased wear protection and longer gear life.
- Very high viscosity index::shear stable
- Excellent resistance to oxidation at high temperatures and lifetime increased by a factor of 2 to 4.
- Excellent demulsibility characteristics.
- Compatibility with seals and metals containing copper

Note : Not compatible with oils based on polyglycols

PERFORMANCE SPECIFICATIONS

- DIN 51517 Part 3 (Group CLP)
- NF-ISO 6743-6 (CKD category)
- US STEEL 224
- CINCINNATI MILACRON
- DAVID BROWN

TYPICAL INSPECTION

The values shown in the table are typical of current production figures and may vary within modest range:

Typical Inspections	ISO VG				
	100	150	220	320	460
Density @ 15 °C , Kg/m^3	855	857	859	863	864
Viscosity @ 40 °C , mm^2/s	100	150	220	325	460
Viscosity @ 100 °C , mm^2/s	15.3	22	31	45	53
Viscosity Index	162	175	185	200	180
Pour Point, °C	-48	-48	-51	-54	-45
Flash Point , COC , °C	>220	225	235	242	253
FZG	>12	>14	>14	>14	>14

ADNOC G I TURBINE OILS

DESCRIPTION

ADNOC G I TURBINE OILS are top quality oils, prepared from solvent-refined paraffinic base oils, and containing anti-oxidant, anti-corrosion and anti-foam additives which further improve the inherent qualities of these oils to ensure maximum service life. They have naturally high viscosity indices, and give outstanding performance in turbines, industrial circulating systems and in the gear boxes for which an extreme-pressure oil is not required.

ADNOC G I TURBINE OILS 32, 46, 68 and 100 are exceptionally well suited for use as steam-turbine lubricants where effective rust prevention and good air and water release ensure reliable, efficient operation over long periods of use.

APPLICATIONS

In addition to the steam turbine applications for which the lighter grades have been developed, the whole range is widely used in circulating systems, anti-friction bearings, enclosed gears, hydraulic units, and many other applications requiring extended service in industrial equipment, but where the presence of an anti-wear additive in the oil is not required.

ADNOC G I TURBINE OILS meet the requirements of BS 489-1999, DIN 515515 part 1, General Electric specifications GEK-28143A,27070, & 46506D, GEK 32568F for Gas Turbines. & Siemens TLV 901304. They have been proven to be excellent lubricants for most of Gas Turbines.

BENEFITS

- Long service life without the formation of harmful sludges due to its excellent oxidation stability.
- Protection against rusting of metal surfaces by the addition of superior anti-rust additives.
- Minimal change in viscosity with variation in temperature because of its high viscosity index.
- Provides solid response in hydraulic systems due to its resistance to air entrainment.
- Avoids inadequate lubrication caused
- by air bubbles in suspension due to a
- high resistance to foaming.
- Ready separation of entrained water due to good demulsibility..
- Wide choice of viscosity, from ISO VG 32 to 460

TYPICAL INSPECTION

The values shown in the table are typical of current production figures and may
vary within modest range:

Typical Inspections		ISO VG								
		32	46	68	77	100	150	220	320	460
Specific Gravity @ 15 oC		0.869	0.874	0.878	0.880	0.881	0.891	0.894	0.896	0.899
Kinematic Viscosity at 40 oC, cSt		31	46	66	76	98	150	220	320	460
Kinematic Viscosity at 100 oC, cSt		5.3	6.7	8.5	9.3	10.9	14.5	18.7	24.0	30.4
Viscosity Index		100	102	97	97	95	95	95	95	95
Flash Point, COC oC		220	220	236	240	250	256	260	272	290
Neutralisation Number, mg/ KOH/g		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Pour Point, oC		-15	-12	-9	-9	-9	-9	-9	-9	-9
Rust Prevention	Rust Prevention	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
	Synthethic Sea	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Demulsibility , ml (30mts. Max)		40/40/0	40/40/0	40/40/0	40/40/0	40/40/0	40/40/0	40/40/0	40/40/0	X

ADNOC TURBINE OIL AF

DESCRIPTION

ADNOC Turbine Oil AF is a series of premium-quality, high-performance turbine oils formulated from synthetic base oils and carefully selected additives that provide superior resistance to thermal degradation over long periods in the presence of entrained air and catalyzing metals and exhibit excellent demulsibility, permitting water and other contaminants to readily separate from oil in the system reservoir. This technology gives outstanding control against deposits, sludge and varnish formation in demanding high temperature Gas, Steam and combined cycle turbine applications.

APPLICATIONS

ADNOC Turbine Oil AF is designed for use in steam and gas turbines, bearing lubrication and system cooling where oil requirements include a long operating life and rust protection, good water separation and air release characteristics. In addition, this oil finds application in circulating systems, antifriction bearings, enclosed gears, hydraulic units, compressor crankcases and many other applications requiring extended service lubrication.

BENEFITS

- Excellent thermal and oxidation stability
- Advanced filterability even in the presence of trace contaminants
- Superior protection against rust/corrosion for long periods.
- Efficient water separation performance throughout the oil service life
- Rapid air release and excellent foam stability
- Outstanding control against deposits, sludge and varnish formation in severe high temperature conditions

PERFORMANCE LEVEL

- MAN Turbo Quality Requirements for Lubricants (non-EP)
- GEK 107395A, 32568H, 46506E, 27070, 28143B
- Siemens TLV 9013 04 (non-EP), TLV 9013 05 (non-EP)
- ALSTOM HTGD 90 117 V0001X (non-EP)
- DIN 51515 Parts I & II
- ASTM D4304-06a Type I & III
- Solar ES9-224W
- British Standard BS489
- Chinese National Oil Standard GB 11120-2011
- ISO 8068 ISO-L-TSA and ISO-L-TGA

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO VG		Test Methods
		32	46	
Density @15°C	kg/L	0.841	0.85	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	31.89	46.07	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	5.886	7.558	ASTM D445
Viscosity Index	-	135	130	ASTM D2270
Pour Point	°C	-12	-15	ASTM D97
Flash Point, COC	°C	216	220	ASTM D92
TAN	mg KOH/g	0.04	0.05	ASTM D974

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC G II TURBINE OIL

DESCRIPTION

ADNOC G II Turbine Oil is a premium quality, highly refined Group II base having good characteristics, which is further enhanced by the addition of oxidation inhibitors together with specially selected additives that gives effective deposit control and keep the system clean. These inhibitors provide resistance to thermal degradation over long periods of time in the presence of entrained air and catalyzing metals. GII Turbine Oil exhibit good demulsibility, permitting water and other contaminants to readily separate from oil in the system reservoir.

APPLICATIONS

ADNOC G II Turbine Oil is designed for use in water, steam and gas turbines, bearing lubrication and system cooling where oil requirements include a long operating life and rust protections, good water separation and air release characteristics. It is also suited for high speed gear units and other applications requiring high quality rust and oxidation inhibited type oil. In addition, this oil find application in circulating systems, anti friction bearings, enclosed gears, hydraulic units, compressor crankcases and many other applications requiring extended service lubrication.

BENEFITS

- Excellent oxidation stability.
- Effective protection against air entrainment and good air release properties.
- Protection against rust/corrosion for long period.
- Efficient demulsibility for rapid separation of water

PERFORMANCE SPECIFICATIONS

- BS 489,
- DIN 51515 (Par I & II),
- ALSTOM HTGD 90117,
- GEK 27070,28143A & 46506D & 32568F,
- Siemens TLV 901304 & TLV 901305

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO VG					Test Methods
		32	46	68	77	100	-
Density @15°C	-	0.8565	0.8595	0.8635	0.8630	0.8655	ASTM D-1298
Kinematic Viscosity @40°C	-	31.00	45.00	68.00	77.00	100.0	ASTM D-445
Kinematic Viscosity @100°C	mm^2/s	5.35	6.85	8.90	9.75	11.30	ASTM D-445
Viscosity Index	mm^2/s	105	105	105	105	98	ASTM D-2270
Flash Point, COC	°C	214	220	230	232	240	ASTM D-92
Pour Point	°C	-15	-15	-15	-15	-9	ASTM D-97
TAN	mg KOH/g	0.10	0.10	0.10	0.10	0.10	ASTM D-974
Color	-	L0.5	L0.5	L0.5	L0.5	L0.5	ASTM D-1500

ADNOC G II TURBINE OIL EP

DESCRIPTION

ADNOC G II TURBINE OIL EP is a high quality turbine oil formulated from highly refined , high quality hydrocracked Group II base stocks and an advanced oxidation, rust and foam inhibitor system. It also contains extreme pressure additive for gear applications.

APPLICATIONS

ADNOC G II TURBINE OIL EP can be used in all turbines particularly those with auxilliary equipment powered through gear reducers. It can be used for plain bearing lubrication in cerntrifugal compressors and in rotary compressors with oil injection and recycle.

BENEFITS

- Improved protection against seizure during running-in
- Extended service lifetime even in high temperature applications.
- Long life anti-rust capcity and excellent compatibility with silver and copper alloys.
- Rapid air separation reduces cavitation phenomenon.

PERFORMANCE SPECIFICATIONS

- BS 489,
- DIN 51515 (Par I & II),
- ALSTOM HTGD 90117,
- GEK 27070,28143A & 46506D & 32568F,
- Siemens TLV 901304 & TLV 901305

TYPICAL INSPECTION

Typical Inspections		ISO VG		
		32	46	68
Density @ 15 ºC		0.86	0.865	0.870
Kin Viscosity @ 40 ºC , cSt		30.6	43.8	66
Viscosity Index		115	110	110
Flash Point , (COC) ºC		220	230	236
Pour Point , ºC		-15	-15	-15
Air release @ 50'C , mins		1	2	2
Oxidation Stability	Hrs to 2.0 Acid No.	>10000+	>10000+	>10000+
	RBOT, Minutes	1750	1750	1750
EP Properties FZG fail stage		9	9	9

ADNOC COMPRESSOR OIL

DESCRIPTION

Compressor Oil has been developed to meet the latest changes in air compressor designs, resulting in increase capacity and efficiency. It is formulated from a high-grade base stock with a narrow distillation range. It contains specially selected additives, which enhance lubricity, anti-wear properties and protect compressor parts against oxidation and rust. It is designed to lubricate both cylinders and crankcases. It minimizes carbon and sludge deposits, thereby extending time between service intervals for cleaning valves, ports and intercoolers.

APPLICATIONS

Compressor Oil is specially suited for rotary and reciprocating compressors both for stationary and mobile applications. (air discharge temperature up to 220°C). It also can be used in vacuum pumps because of their low volatility.

BENEFITS

- Longer Intervals between cleaning of valves, heat exchangers ports and piping ensures lower maintenance cost.
- Less carbon and deposit formation reduces fire and explosion hazards.
- Single oil, lubricates cylinders and crankcase.
- Suitable for both large and small compressors

PERFORMANCE SPECIFICATIONS:

DIN 51506 VD-L

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO VG					Test Methods
		32	46	68	100	150	-
Density @15°C	-	0.8650	0.8710	0.8870	0.8810	0.8905	ASTM D-1298
Kinematic Viscosity @40°C	-	31.00	46.00	68.00	97.50	147.5	ASTM D-445
Kinematic Viscosity @100°C	mm^2/s	5.23	6.75	8.70	10.90	14.50	ASTM D-445
Viscosity Index	mm^2/s	98	98	98	96	96	ASTM D-2270
Flash Point, COC	°C	214	220	230	240	250	ASTM D-92
Pour Point	°C	-33	-30	-30	-27	-24	ASTM D-97
TAN	mg KOH/g	0.10	0.10	0.10	0.10	0.10	ASTM D-974
Color	-	0.5	1.0	L1.5	1.5	L2.0	ASTM D-1500

ADNOC SYNCOMP PA

DESCRIPTION

ADNOC Syncomp PA Series compressor lubricants are formulated using a premium polyalphaolefin (PAO) synthetic base fluid coupled with an unparalleled high performance additive package.

These compressor lubricants feature superior thermal and oxidative stability, enabling them to operate over a wide range of temperatures without coking, deposit formation, or corrosion. Additional features include low volatility and compatibility with mineral oil lubricants.

ADNOC Syncomp PA Series fluids are non-toxic and are accepted for use in food processing facilities where NSF H2 certified products are permitted. They meet ISO 6743-3A DAB and DAJ classifications.

APPLICATIONS

- Flooded rotary screw compressors
- Liquid ring vacuum pumps
- Applications requiring an oxidative and thermally resistant lubricant.

BENEFITS

Compressor efficiency optimized

- Longer system life
- Low volatility Reduced maintenance and top-offs
- Corrosion protection
- Enhanced system reliability and reduced down-time separating filter elements

The **ADNOC SYNCOMP PA** have an anti-clogging property that ensures the efficiency of the filters during a long period (up to 8000 hrs.)

PERFORMANCE SPECIFICATIONS:

NF-ISO 6743-3A and DAJ for heavy duty applications

TYPICAL INSPECTION

The values shown in the table are typical of current production figures and may vary within modest range:

Characteristic	Units	ISO VG						ASTM Method
		15	32	46	68	100	150	
Density at 15.6°C	g/cm³	0.8197	0.8364	0.8407	0.8421	0.8449	0.8466	D4052
Density at 20°C		0.8336	0.8380	0.8393	0.8422	0.8438	0.8438	0.8169
Viscosity at 40°C	mm²/s	17.19	29.87	46.58	64.32	107.3	139.4	D445
Viscosity at 100°C		5.74	8.24	10.9	16.34	21.36	21.36	3.91
Viscosity Index	-	123	137	153	162	173	179	D2270
Pour Point	°C	-74	-67	-45	-45	-48	-49	D5950
Flash Point	°C	230	242	279	278	255	269	D92
Fire Point	°C	256	278	290	288	257	279	D92
Rust Test – Part A	Distilled water	Pass	Pass	Pass	Pass	Pass	Pass	D665
Rust Test – Part B	Salt water	Pass	Pass	Pass	Pass	-	-	D665
Air Release	min	0.1	-	2	5	1.3	1.2	D3427

ADNOC REFRIGERATION COMPRESSOR OIL S

DESCRIPTION

ADNOC REFRIGERATOR COMPRESSOR OIL S grades are superior-quality, synthetic hydrocarbon (alkylbenzene) lubricants. These oils do not contain any additives which can precipitate out at low temperatures or form tacky deposits.

APPLICATIONS

ADNOC REFRIGERATOR COMPRESSOR OIL S grades are used as crankcase lubricants in reciprocating compressors and in oil-injected screw compressors. Their outstanding chemical stability and resistance to ageing makes them especially well suited for the lubrication of modern refrigeration equipment. These oils have better miscibility characteristics with fluorocarbon refrigerants (eg, R22, R502) and therefore can be used for very-low temperature applications (down to -100 oC). These synthetic lubricants are miscible in all proportions with conventionally refined petroleum oils.

BENEFITS

- Good low - temperature performance.
- Excellent chemical stability - resist reaction with refrigerants.
- High thermal stability for long life. Appropriate viscosity for efficient sealing and lubrication with low wear.
- Low floc point - withstand low evaporation temperature without wax precipitation with Refrigerant 12.
- Solubility characteristics with halogenated refrigerants superior to mineral oils.
- High dielectric strength-exceptionally low moisture content.
- Low foaming tendency

PRODUCT TYPICAL CHARACTERISTICS

Typical Inspections	ISO VG			
	32	46	68	100
Density @15°C	0.861	0.864	0.866	0.867
Kinematic Viscosity @40°C	32.6	45.5	67.3	96.3
Kinematic Viscosity @100°C	4.62	5.52	6.75	8.06
Flash Point, PMC, oC	143	149	161	179
Pour Point, oC	-39	-36	-27	-27
Floc Point With Freon 12, oC	-67	-80	-80	-80
Ramsbottom Carbon Residue, %wt	0.09	0.09	0.09	0.09

ADNOC REFRIGERATION COMPRESSOR OIL PE

DESCRIPTION

ADNOC Refrigeration Compressor Oil PE is a high performance synthetic refrigeration lubricant series based on polyolester (POE) base oils and selected additives to provide long life and effective wear protection for bearing surfaces, increased system life and improved efficiency in extreme operating conditions.

APPLICATIONS

ADNOC Refrigeration Oil PE is recommended for use in refrigeration and air-conditioning compressors using ozone-friendly HFC refrigerant fluids like R134a, R404a, R410a etc. It can also be used with old technology refrigerants CFC and HCFC like R-12, R-22 etc.

BENEFITS

Protects the different components of the refrigerating loop: ASHRAE thermal stability tests confirms the excellent behaviour of the lubricant at high temperature in presence of refrigerant, water and metallic components.

Neutral behaviour with the refrigerating equipments:

- Anti-rust,anti corrosion properties with copper metals.
- Compatible with varnishes, elastomer and paints.
- High resistance to hydrolysis.
- Low dilution of refrigerant in oil for the high viscosity grades, for good lubricity and oil separation properties (low carry-over)

Enhances the efficiency of the refrigerating equipment: The good miscibility of the fluid viscosities of ADNOC Refrigeration Oil PE allows a good oil return property, specially in dry-ex equipments. Oil will not reduce then the efficiency of the heat exchangers

SPECIFICATIONS

ADNOC REFRIGERATION OIL PE series meet the requirements of large number of compressor manufactures like BITZER, BLISSFIELD, BOCK, CARRIER, DORIN, FRASCOLD, GRASSO, MCQUAY, SABROE, TECUMSEH and others

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO VG					Test Methods
		32	46	68	100	220	
Density @15°C	kg/L	0.977	0.977	0.977	0.969	0.975	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	32.50	45.30	66.60	96.50	215.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	5.800	7.100	9.400	11.30	18.80	ASTM D445
Viscosity Index	-	121	116	120	103	98	ASTM D2270
Pour Point	°C	-46	-46	-39	-28	-25	ASTM D97
Flash Point, COC	°C	258	260	270	260	280	ASTM D92
TAN	mg KOH/g	<0.05	<0.05	<0.05	<0.05	<0.05	ASTM D974

ADNOC REFRIGERATION COMPRESSOR OIL AB

DESCRIPTION

ADNOC Refrigeration Compressor Oil AB is a series of premium, high-quality synthetic hydrocarbon (Alkylbenzene) refrigeration compressor lubricants. These oils do not contain any additives which can precipitate out at low temperatures or form tacky deposits.

APPLICATIONS

ADNOC Refrigeration Compressor Oil AB is recommeded to be used as crankcase lubricants in reciprocating compressors and in oil-injected screw compressors. Their outstanding chemical stability and resistance to ageing makes them especially well-suited for the lubrication of modern refrigeration equipment. These oils have better miscibility characteristics with fluorocarbon refrigerants (eg, R22, R502) and therefore can be used for very-low temperature applications (down to -100°C). These synthetic lubricants are miscible in all proportions with conventionally refined petroleum oils.

BENEFITS

- Excellent low temperature performance
- Excellent chemical stability – resists reaction with refrigerants
- High thermal stability for long life
- Appropriate viscosity for efficient sealing and lubrication with low wear
- Low floc point - withstand low evaporation temperature without wax precipitation with Refrigerant 12
- Solubility characteristics with halogenated refrigerants superior to mineral oils
- High dielectric strength-exceptionally low moisture content
- Low foaming tendency

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO VG				Test Methods
		32	46	68	100	
Density @15°C	kg/L	0.861	0.864	0.866	0.867	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	32.60	45.50	67.30	96.30	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	4.620	5.520	6.750	8.06	ASTM D445
Viscosity Index	-	143	149	161	179	ASTM D2270
Pour Point	°C	-39	-36	-27	-27	ASTM D97
Floc Point With Freon 12	°C	-67	-80	-80	-80	-
Ramsbottom Carbon Residue	%mass	0.09	0.09	0.09	0.09	ASTM D524

ADNOC REFRIGERATION COMPRESSOR OIL F

DESCRIPTION

ADNOC REFRIGERATION COMPRESSOR OIL F is a hydrotreated naphthenic refrigeration oil, classified as an API Group V base oil. The viscosity at 40°C is 68 cSt for this product.

APPLICATIONS

ADNOC REFRIGERATION COMPRESSOR OIL F has higher flash point and high thermal and chemical stability, including being non-corrosive versus iron, copper and aluminum. This product is recommended for use in refrigerators using refrigerants such as Isobutane (R600a), Ammonia (R717) and CFC's (R12 and R 22).

BENEFITS

- High solvent power and the very good low temperature properties leading to good floc points for the recommended refrigerant-oil mixture.
- Wax-free thereby having low pour point
- Good cold flowing properties
- Efficient heat transfer
- Good thermal stability

PRODUCT TYPICAL CHARACTERISTICS

Property	Unit	Test Method	Specification Limits		Typical Data
			Limit Min	Limit Max	ISO VG 68
1 - Physical					
Density, 15°C	kg/dm³	ASTM D4052	0.904	0.924	0.913
Viscosity, 40°C	mm²/s (cSt)	ASTM D445	61.2	74.8	69
Viscosity, 100°C	mm²/s (cSt)	ASTM D445			6.6
Flash Point, COC	°C	ASTM D92			200
Flash Point, PM	°C	ASTM D93	174		185
Pour Point	°C	ASTM D97		-24	-30
Aniline Point	°C	ASTM D611			84
Water content	mg/kg	ASTM D1533			40
Colour	-	ASTM D1500		1.5	1

Property	Unit	Test Method	Specification Limits		Typical Data
			Limit Min	Limit Max	ISO VG 68
2 - Physical					
Copper Strip, 100°C, 3 hrs		ASTM D130		1	1
Sulphur	%	ASTM D2622			0.06
Total Acid Number	mg KOH/g	ASTM D974		0.03	< 0.01
Hydrocarbon Type Analysis		IR-method			
- Ca	%	IR-method			15
Carbon-Type Composition		ASTM D2140			
- Ca	%	ASTM D2140			11
- Cn	%	ASTM D2140			40
- Cp	%	ASTM D2140			49
Cold flow determination in a U-tube	°C	DIN 51568			
Floc point -R12	°C	DIN 51351			-29
Floc point - R600A	°C	DIN 51351			-50

Property	Unit	Test Method	Specification Limits		Typical Data
			Limit Min	Limit Max	ISO VG 68
3 - Electrical					
Breakdown voltage	kV	IEC 60156	40		> 45

ADNOC TRANSFORMER OIL UNINHIBITED

DESCRIPTION

ADNOC Transformer Oil Uninhibited is a un-inhibited-refined naphthenic oil specifically manufactured for use in electric transformers and switchgears as an insulating and heat transfer medium.

APPLICATIONS

ADNOC Transformer Oil Uninhibited is used as an insulating and cooling medium where oil of high thermal and oxidation stability is required. It is also suitable where good gas absorbing properties are necessary like transformer oil immersed switchgear, circuit breakers etc. Transformer oil meets class I and class II of BS 148 and IEC 296 specifications.

BENEFITS

- High dielectric strength
- Very low pour point
- Free from acids and corrosive sulfur
- Compatible with transformer construction material

PERFORMANCE LEVEL

- BS 148
- I.E.C. 60296(03

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	Results	Test Methods
Density @15°C	kg/L	0.878	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	9.000	ASTM D445
Pour Point	°C	-45	ASTM D97
Flash Point, PMCC	°C	144	ASTM D93
TAN	mg KOH/g	0.005	ASTM D974
Water	ppm	20	ASTM D1533
Electric Strength	KV	70	ASTM D1816

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC TRANSFORMER OIL INHIBITED

DESCRIPTION

ADNOC TRANSFORMER OIL INHIBITED is a fully inhibited transformer oil manufactured from refined high quality oil, having inherently high thermal and oxidation stability needed to meet requirements for inhibited insulating oils. It meets the latest international standard IEC 60296 (03) superseding the previous International IEC 296 Class IA & Class IIA and BS 148 Class IA & Class IIA standards. It contains special anti-oxidant additive to make this grade have an exceptional oxidation stability.

ADNOC TRANSFORMER OIL INHIBITED has the lower viscosity and pour point needed for meeting Class IIA specifications and hence can be used in cold climates.

ADNOC TRANSFORMER OIL INHIBITED does not contain polychlorinated biphenyls (PCBs).

APPLICATIONS

ADNOC TRANSFORMER OIL INHIBITED is recommended for use as an electrical insulating oil in electrical transformers and switchgear, and also in other types of equipment where an oil of high thermal and oxidation stability is required to act as a cooling and insulating medium. It is suitable for use where good gas absorbing properties are necessary.

BENEFITS

- Good insulating properties, indicated by high dielectric strength and low dielectric loss tangent (power factor).
- Good cooling, heat transfer and fluid flow characteristics due to low viscosity and density.
- Excellent oxidation stability minimizes development of sludge and acidity in storage and service.
- Good gas absorption properties.
- Good low temperature fluidity

SPECIFICATIONS

ADNOC TRANSFORMER OIL INHIBTED meets or exceeds the requirements of IEC 60296(03) the latest standard for IEC superseding the previous International IEC 296 Class IA & Class IIA and BS 148 Class IA & Class IIA standards. The physical and chemical properties shown in the table are average values based on recent production. They are not limiting values. Minor variations which do not affect product performance are to be expected in normal manufacture

PRODUCT TYPICAL CHARACTERISTICS

Typical Inspections	ADNOC Transformer Oil Inhibited		
	Minimum	Typical	Maximum
Density @ 20 oC , Kg/ liter		0.8765	0.895
Kinematic Viscosity, cSt @ -30oC			1800
Kinematic Viscosity, cSt @ 40oC		9.38	12.0
Flash Point, PMCC, oC		152	
Pour Point, oC		-58	-40
Antioxidant , % Wt	0.08	0.165	0.4
Neutralization Value, mgKOH/g		0.006	0.01
Corrosive Sulfur,		Non corrosive	
Dissipation Factor @ 90 oC			0.005
Breakdown Voltage Before Treatment, kV	30	40-60	
Breakdown Voltage After Treatment, kV	70	72	
Water Content mg/Kg		12	30
PCB, ppm		Not detectable	Not detectable

ADNOC S-CUT

DESCRIPTION

ADNOC S-CUT is formulated from high quality base oils and combination of passive and extreme pressure additive package especially developed for cutting oils used in severe operations. This cutting oil is extremely effective at providing rust and corrosion protection of parts, cutting tools, and the machine.

APPLICATIONS

ADNOC S-CUT is multipurpose for turning, milling, reaming, drilling, shaping, broaching of a wide variety of metals. It has outstanding emulsion stability and readily mixes with water. It is recommended at 10:1 up to 20:1 water oil dilution for milling, boring and turning and 40:1 for grinding. The emulsion is prepared by adding oil to water and not vice versa. It is non-staining and can be used on both ferrous and non-ferrous metals.

BENEFITS

- Gives excellent surface finish on parts.
- Good oxidation stability.
- Corrosion and Rust protection of parts and machine.
- Excellent cooling properties that avoid overheating of parts and chips in machining operation.
- Reduce tool wear.
- Helps prevent varnish and sludge formation.
- Non-staining to ferrous and non ferrous metals.
- Increase tool life and faster machining

PRODUCT TYPICAL CHARACTERISTICS

Properties		Units	Value	Test Method
Grade		-	-	-
Specific Gravity	@ 15°C	-	0.8950	ASTM D-1298
Viscosity	@ 40°C	mm^2/s	42.0	ASTM D-445
Corrosion			0/1-1	IP- 125
Color		-	3.0	ASTM D-1500
Emulsion Stability(400ppm)-oil		ml	NIL	IP-263
Emulsion Stability(400ppm)-cream		ml	NIL	IP-263
Rust Prevention Breakpoint		-	20:1	IP-287

ADNOC HEAT TRANSFER FLUID

DESCRIPTION

ADNOC Heat Transfer Fluid is a high quality heat transfer fluid manufactured based on highly refined paraffinic Group I base oils. It has relatively low viscosity so it has good viscosity versus temperature characteristic and good thermal stability.

APPLICATIONS

ADNOC Heat Transfer Fluid is suitable for enclosed heat transfer system that requires mineral oil.

BENEFITS

- Capable of an extremely long service life without deposit formation or viscosity increase
- High heat transfer rates with improved operating efficiency
- Protection against corrosion
- Flexible for combined heating and cooling cycles.

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO	Test Methods
		32	
Density @15°C	kg/L	0.856	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	31.00	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	5.250	ASTM D445
Viscosity Index	-	98	ASTM D2270
Pour Point	°C	-12	ASTM D97
Flash Point, COC	°C	214	ASTM D92
TAN	mg KOH/g	0.01	ASTM D974
Color	-	1.0	ASTM D1500

THERMAL DATA FOR ADNOC HEAT TRANSFER FLUID

Temp	Density	Kin Vis	Specific Heat	Thermal Conductivity	HC Vapor Pressure
°C	Kg/m^3	mm^2/s	J/kg.K	W/m.K	Pa
10	860.0	138.6	-	0.136	<0.2
15	853.0	102.5	-	0.136	<0.2
20	852.0	77.20	-	0.136	<0.2
40	840.1	32.00	1,945	0.134	<0.2
50	834.0	20.64	2,010	0.133	<0.2
100	803.8	5.400	2,163	0.13	0.6
150	773.5	2.390	2,340	0.126	20
200	743.7	1.370	2,535	0.122	260
250	713.0	0.920	2,710	0.119	1200
300	674.0	0.670	2,886	0.115	8400

ADNOC PREMIUM HEAT TRANSFER FLUID

DESCRIPTION

ADNOC Premium Heat Transfer Fluid is a high quality heat transfer fluid made from Group III base oils. It has relatively low viscosity so it has good viscosity versus temperature characteristic.

APPLICATIONS

ADNOC Premium Heat Transfer Fluid is recommended primarily for non-pressurized closed liquid phase heating systems that incorporate both heating and cooling branches. The low temperature fluidity ensures that adequate circulation occurs in the coolest parts of the circuit. The maximum recommended bulk fluid temperature is 290°C, and the fluid also operates effectively in cooling systems down to bulk temperatures of 30°C.

BENEFITS

- Capable of an extremely long service life without deposit formation or viscosity increase.
- High heat transfer rates with improved operating efficiency.
- Protection against corrosion.
- Flexible for combined heating and cooling cycles.

PRODUCT TYPICAL CHARACTERISTICS

Parameter		Typical Values
Appearance		Clear liquid
Colour		L0.5
Density, Kg/l	@ 15°C	0.8360
	@ 100°C	0.7800
Kin Viscosity, cSt	@ 40°C	20.00
	@ 100°C	4.250
	@ 125°C	2.800
	@ 200°C	1.200
Viscosity Index		120
Flash Point (COC),°C		226
Fire Point (COC), °C		240
Pour Point, °C		-18
Auto Ignition Temperature, °C		340
Maximum Film Temperature, °C		330
Extended Maximum Use Temperature, °C		310
Recommended Maximum Bulk Temperature, °C		290

ADNOC HEAT TRANSFER FLUID 10

DESCRIPTION

ADNOC Heat Transfer Fluid 10 is a high quality heat transfer fluid blended with high quality base oil. It has relatively low viscosity so it has good viscosity versus temperature characteristic.

APPLICATIONS

ADNOC Heat Transfer Fluid 10 is suitable for enclosed heat transfer system that requires mineral oil and bulk fluid temperature not to exceed 250 C for closed loop heating system. It is also used as sealing media in oil film barrier seals on rotating equipment like compressors, crude oil pumps. Due to its inherent oxidation stability, it can maximize seal life.

BENEFITS

- Capable of an extremely long service life without deposit formation or viscosity increase.
- High heat transfer rates with improved operating efficiency.
- Protection against corrosion. Flexible for combined heating and cooling cycles.

PRODUCT TYPICAL CHARACTERISTICS

Properties		Units	Value	Test Method
Grade		**-**	**-**	**-**
Specific Gravity	@ 15°C	-	0.8700	ASTM D-1298
Viscosity	@ 40°C	mm^2/s	9.50	ASTM D-445
	@ 100°C	mm^2/s	≥2.50	ASTM D-445
Viscosity Index		-	≥101	ASTM D-2270
Flash Point	COC	°C	≥145	ASTM D-92
Pour Point		°C	≤ -30	ASTM D-97
TAN		mg KOH/g	≤ 0.05	ASTM D-974

ADNOC HEAT TRANSFER FLUID GP II

DESCRIPTION

ADNOC Heat Transfer Fluid GP II is a high quality heat transfer fluid with Group II base oils. It has relatively low viscosity so it has good viscosity versus temperature characteristic.

APPLICATIONS

ADNOC Heat Transfer Fluid GP II is suitable for enclosed heat transfer system that requires mineral oil.

BENEFITS

- Capable of an extremely long service life without deposit formation or viscosity increase.
- High heat transfer rates with improved operating efficiency.
- Protection against corrosion.
- Flexible for combined heating and cooling cycles.

PRODUCT TYPICAL CHARACTERISTICS

Properties		Units	Value	Test Method
Grade		-	-	-
Specific Gravity	@ 15°C	-	0.8560	ASTM D-1298
Viscosity	@ 40°C	mm^2/s	30.00	ASTM D-445
	@ 100°C	mm^2/s	5.25	ASTM D-445
Viscosity Index		-	105	ASTM D-2270
Flash Point	COC	°C	214	ASTM D-92
Pour Point		°C	-15	ASTM D-97
TAN		mg KOH/g	0.01	ASTM D-974
Color		-	L0.5	ASTM D-1500

THERMAL DATA FOR ADNOC HEAT TRANSFER FLUID GP II

Temp °C	Density Kg/m^3	Kin Vis mm^2/s	Sp Heat J/kg.K	Thermal Condu W/m.K	HC Vap Pressure Pa
10	860.0	138.6	-	0.136	<0.2
15	853.0	102.5	-	0.136	<0.2
20	852.0	77.2	-	0.136	<0.2
40	840.1	32.0	1,945	0.134	<0.2
50	834.0	20.64	2,010	0.133	<0.2
100	803.8	5.4	2,163	0.13	<0.2
150	773.5	2.39	2,340	0.126	<0.2
200	743.7	1.37	2,535	0.122	<0.2
250	713.0	0.92	2,710	0.119	<0.2
300	674.0	0.67	2,886	0.115	<0.2

ADNOC RAILROAD ENGINE OIL SAE 20W-40

DESCRIPTION

ADNOC Railroad Engine Oil is a premium, high-performance, zinc-free, non-chlorinated, heavy-duty crankcase lubricant, formulated with high quality base oils and advanced additives that provide superior wear protection, enhanced oxidation performance, improved oil consumption control and high alkalinity/ TBN retention. Its optimized detergent system is designed for use with low and ultra-low sulfur diesel and its environmentally friendly formulation, with reduced sulfated ash, helps in reducing the particulate matter emission and allows extended drain intervals.

APPLICATIONS

ADNOC Railroad Engine Oil is recommended for use in modern and older model EMD and GE engines burning low and ultra-low sulfur diesel fuel (≤ 500 ppm) in inland marine, railroad and power generation applications.

BENEFITS

- Excellent engine cleanliness and sludge control
- Reduced sulfated ash and enhanced particulate matter emission control
- Formulated for use with low and ultra-low sulfur diesel
- Outstanding bearing and yellow metal wear control
- Excellent oxidation stability
- Superior alkalinity retention
- Excellent protection of silver-coated and turbocharger bearings of EMD engines
- Low oil consumption
- Extended drain intervals
- Maximizes engine durability

PERFORMANCE LEVEL

- API CF
- General Electric (GE) Gen 4 Long Life
- LMOA Generation 6 and 5
- Progress Rail (EMD) - EMD 567, 645 and 710 engines EPA Tier 3 and previous

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		20W-40	
Density @15°C	kg/L	0.876	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	113.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	13.75	ASTM D445
Viscosity Index	-	120	ASTM D2270
CCS Viscosity	cP	6500	ASTM D5293
- CCS Temperature	°C	-15	
Pour Point	°C	-27	ASTM D97
Flash Point, COC	°C	230	ASTM D92
Base Number	mg KOH/g	9	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC DIESEL ENGINE OIL RR SUPER-P CD SAE 40

DESCRIPTION

ADNOC Diesel Engine Oil RR Super-P is a premium diesel engine oil, primarily developed for medium speed, high output, two and four-cycle railroad-type diesel engines. It is formulated from high quality base oils and selected zinc-free additives to provide protection against corrosion, wear and superior thermal stability, oxidation resistance, high alkalinity, detergency and dispersancy properties.

APPLICATIONS

ADNOC Diesel Engine Oil RR Super-P is suitable for General Motors-Electro Motive Division (EMD) engines used in railway, some marine, offshore and power generation application, particularly when operating on high Sulfur fuels.

BENEFITS

- Excellent oxidation stability
- Good alkalinity retention
- Excellent protection of silver-coated and turbocharger bearings of EMD engines
- Suitable for railroad and marine engines which require zinc-free lubricants
- Low oil consumption
- Extended drain intervals
- Maximizes engine durability

PERFORMANCE LEVEL

- API CF
- LMOA Generation 5
- Electro-Motive Diesel (EMD)
- General Electric (GE)

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	SAE	Test Methods
		40	
Density @15°C	kg/L	0.880	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	134.3	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	13.75	ASTM D445
Viscosity Index	-	98	ASTM D2270
Pour Point	°C	-15	ASTM D97
Flash Point, COC	°C	250	ASTM D92
Base Number	mg KOH/g	17	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC CIRCULATING OIL

DESCRIPTION

ADNOC CIRCULATING OILS are high quality lubricating oils for hydraulic and circulating systems and other industrial applications that require a lubricant with long service life.

ADNOC CIRCULATING OILS contain high quality base oil stocks that provide excellent lubrication. They also contain different inhibitors to control wear, rusting, oxidation and foaming thus providing high protection for fine machinery.

BENEFITS

- High viscosity index ensures excellent viscosity characteristics over a wide temperature range.
- Good natural resistance to oxidation under the conditions to which it is normally exposed.

APPLICATIONS

Suitable for circulating oil systems, including lubrication of large journal bearings, and for many industrial hydraulic applications. Also suitable for once through lubrication systems and for bearings, as well as for many industrial gears not requiring heavy duty oils.

TYPICAL INSPECTION

The values shown in the table are typical of current production figures and may vary within modest range:

Typical Inspections	ISO VG								
	22	32	46	68	100	150	220	320	460
Density @ 15 Oc Kg/ltr	0.860	0.868	0.874	0.875	0.887	0.892	0.895	0.897	0.899
Kinematic Viscosity at 40 oC, cSt	21	31	44	66	98	150	220	320	460
Kinematic Viscosity at 100 oC, cSt	4.2	5.3	6.6	8.5	10.9	14.5	18.7	24.0	30.4
Viscosity Index	100	100	99	97	95	95	95	95	95
Flash Point, (COC) °C	222	225	226	234	240	245	254	272	286
Pour Point, oC	-18	-18	-18	-18	-18	-18	-12	-9	-9
Neut. No. (mgKOH/gm)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25

ADNOC GENERAL PURPOSE OIL

DESCRIPTION

ADNOC General Purpose Oil is a series of mineral based fluids manufactured from high-quality base oils and contains no additive.

APPLICATIONS

ADNOC General Purpose Oil is recommeded for enclosed general purpose oil system that requires mineral oil and bulk fluid temperature not to exceed 250° C for closed loop heating system. It is also used as sealing media in oil film barrier seals on rotating equipment like compressors and crude oil pumps. Due to its inherent oxidation stability, it can maximize seals life. It is suitable for bearing and gear lubrication systems where the operating conditions are not severe. It is recommended for use in re-circulating and other closed oil systems. Also suitable for many industrial hydraulic applications where non additive oils are required.

BENEFITS

- Long service life without deposit formation or viscosity increase
- High General Purpose oil rates with improved operating efficiency
- Protection against corrosion
- Flexible for combined heating and cooling cycles.
- Inherent Oxidation Stability
- Low Volatility

PRODUCT TYPICAL CHARACTERISTICS

Specifications	Units	ISO VG					Test Methods
		10	32	68	100	150	
Density @15°C	kg/L	0.870	0.865	0.873	0.885	0.892	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	9.500	31.00	68.00	95.00	150.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	2.573	5.230	8.600	10.75	14.60	ASTM D445
Viscosity Index	-	100	98	96	96	96	ASTM D2270
Pour Point	°C	-30	-15	-12	-9	-9	ASTM D97
Flash Point, COC	°C	145	214	230	240	250	ASTM D92
TAN	mg KOH/g	0.02	0.02	0.02	0.02	0.02	ASTM D974

ADNOC SPINDLE OIL

DESCRIPTION

ADNOC Spindle Oil is a low viscosity spindle bearing oil formulated from high quality mineral base oil designed for use in high performance machines where anti-rust, anti-corrosion and anti-foaming characteristics are required. It has good film strength, oxidation stability, and excellent water separability and anti-foam properties.

APPLICATIONS

ADNOC Spindle Oil is recommended for lubrication of high-speed needle and spindle bearings of agricultural and textile machinery, as well as other automated machine tools requiring low-viscosity oil. It can also be used in industrial circulating oil systems and in low-pressure hydraulic systems that require low-viscosity oil.

BENEFITS

- Maintain lubricant film over entire critical lubrication surface
- Protects bearing surfaces from wear
- Excellent oxidation resistance and thermal stability
- Long service life for reduced operating and maintenance costs
- Excellent water separability properties

PERFORMANCE LEVEL

DIN 51524-1 HL10

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	ISO VG	Test Methods
		10	
Density @15°C	kg/L	0.815	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	10.02	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	2.781	ASTM D445
Viscosity Index	-	124	ASTM D2270
Pour Point	°C	-39	ASTM D97
Color	°C	L0.5	ASTM D1500
Total Acid Number	mg KOH/g	0.25	ASTM D664

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC ROCK DRILLING OIL

DESCRIPTION

ADNOC Rock Drilling Oil is a series of lubricants formulated from highly refined base oils and special additives that provide full protection for air operated equipment including rock drills, hammers and percussion type equipment. It contains an adhesive agent to ensure that the oil clings to moving parts and is not easily flung off, giving low oil consumption and longer equipment life. It also contains anti-corrosion and extreme pressure additives to provide corrosion protection and heavy shock loads resistance.

APPLICATIONS

ADNOC Rock Drilling Oil is recommended for percussion-type air tools of all kinds, including rock drills, paving breakers, pneumatic pile drivers, ballast tampers, chipping hammers, etc., operating under either wet or dry conditions. It can be applied with air-line lubricators or from an integral reservoir in the tool or, in the case of larger crawler-mounted drills, from a central reservoir.

BENEFITS

- EP protection prevents welding or scoring under constant shock loading
- Outstanding anti-wear properties
- Constant oil film minimizes wear to cylinders and other drill parts
- Effective rust and corrosion protection
- Excellent lubricity and good anti-foam properties
- Reduces water from displacing the lubricant and wetting the metal surface
- Low odor and low misting properties to ensure comfortable working conditions

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	ISO VG			Test Methods
		100	150	320	
Density @15°C	kg/L	0.872	0.873	0.897	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	99.90	148.6	320.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	12.03	15.64	25.35	ASTM D445
Viscosity Index	-	111	108	102	ASTM D2270
Pour Point	°C	-36	-30	-24	ASTM D97
Flash Point, COC	°C	230	260	260	ASTM D92

ADNOC SLIDEWAY OIL

DESCRIPTION

ADNOC slideway oils based on paraffinic mineral oils containing anti-oxidant, anti-corrosion, load-carrying, adhesive and copper-protection additives. These oils have been tested on a Staticinemetre friction-testing machine, a rig designed to evaluate the lubricating properties of lubricants used for machine-tool slideway systems. They showed no indication of stick-slip at loads of 1.5 bar and 3.0 bar at a sliding velocity of 2mm/sec on V and flat slideway surfaces.

ADNOC slideway oils have also been tested in a modified Cincinnati Milacron thermal stability test with steel and copper test rods in the presence of water. Evaluation of the test rods to Cincinnati color corrosion standards shows the excellent protection given by the oils under these severe test conditions (24 hours at 100 °C).

APPLICATIONS

ADNOC SLIDEWAY grades are high-quality machine-tool slideway lubricants, specially developed to cater for heavy loaded conditions at slow feed rates. They are recommended for the lubrication of both horizontal and vertical ways of machine tools.

BENEFITS

- Excellent work finish from the elimination of stick-slip, particularly at low feed rates and high loads.
- Adhesive properties maintain oil film and resist removal by aqueous cutting fluids.
- Drainage from vertical slideways minimised by adhesive properties.
- Provide superior protection against rust and corrosion of non-ferrous metals.
- Extreme-Pressure (EP) additives give low slideway wear.
- Low odour due to unique formulation of additives.
- Long life due to superior stability.
- Suitable for most machine workshop, gearbox and hydraulic applications.
- Give excellent performance in combined slideway/hydraulic systems

PRODUCT TYPICAL CHARACTERISTICS

Typical Inspections	ISO VG			
ISO Viscosity Grade	**32**	**46**	**68**	**220**
Density @15°C	0.871	0.876	0.881	0.893
Kinematic Viscosity @40°C	30	45	67	212
Kinematic Viscosity @100°C	5.2	6.7	8.8	18
Flash Point, oC	210	214	224	240
Pour Point, oC	-12	-9	-9	-9
Corrosion Copper strip 3 hrs. at 100 oC	Class1	Class1	Class1	Class1

ADNOC GREASE HTB 2

DESCRIPTION

ADNOC Grease HTB 2 is non-melting, Bentonite clay based grease loaded with EP additives. ADNOC GREASE HTB 2 is non-soap type which shows outstanding heat resistance as its thickener is non-melting. This grease is recommended for general industrial applications requiring grease that does not melt when exposed to continuous high temperatures or where intermittent exceedingly high temperatures are experienced.

APPLICATIONS

- Prevents grease loss and minimizes the chances of bearing failure at high temperatures.
- Good water washout properties.
- Protects against rust.
- Highly effective lubrication at high temperatures.
- Ideal for use in furnace door bearings and kiln.
- Resists shock loading due to its EP properties

PRODUCT TYPICAL CHARACTERISTICS

NLGI Grade		2
Dropping Point, Deg C		Not applicable
Penetration, mm @ 25 deg C		280
Oil Viscosity	cSt @ 40 Deg C	92.5
	cSt @ 100 Deg C	10.5
Thickener (Modified Bentonite), m %		12
Operating Temperature Range, Continuos service, Deg C		-15 to 120
With frequent lubrication, Deg C		260

HANDLING, HEALTH AND SAFETY

The product consists of highly refined mineral oils with specific additives. In normal conditions of use this product presents no particular toxic hazard. All lubricants and greases, of any kind should be handled with great care, particularly avoiding any prolonged contact with the skin.

ADNOC OGL AND WR COMPOUND

DESCRIPTION

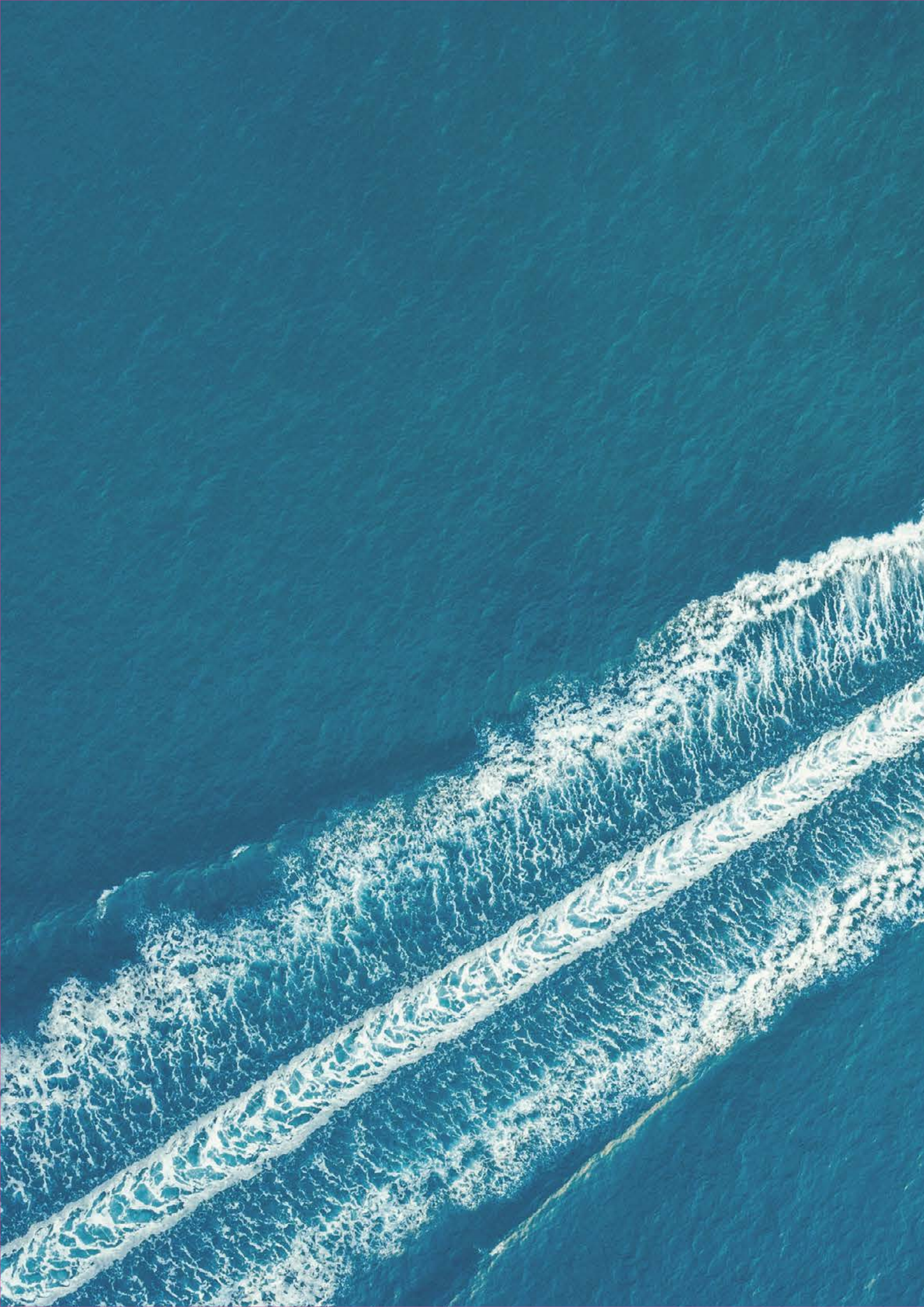
ADNOC OGL and WR COMPOUND is a bituminous base compound containing diluents primarily for Open Gear and Wire Rope lubrication. It has a wide range of usable temperature. It is recommended for Open Gears which work under load, where it forms a strong tenacious film on the metal surface which does not get squeezed out during usage. It has good penetration properties to lubricate between strands of wire ropes. This product can be applied by brushing, swabbing, dipping and spraying. Product is supplied in diluted form.

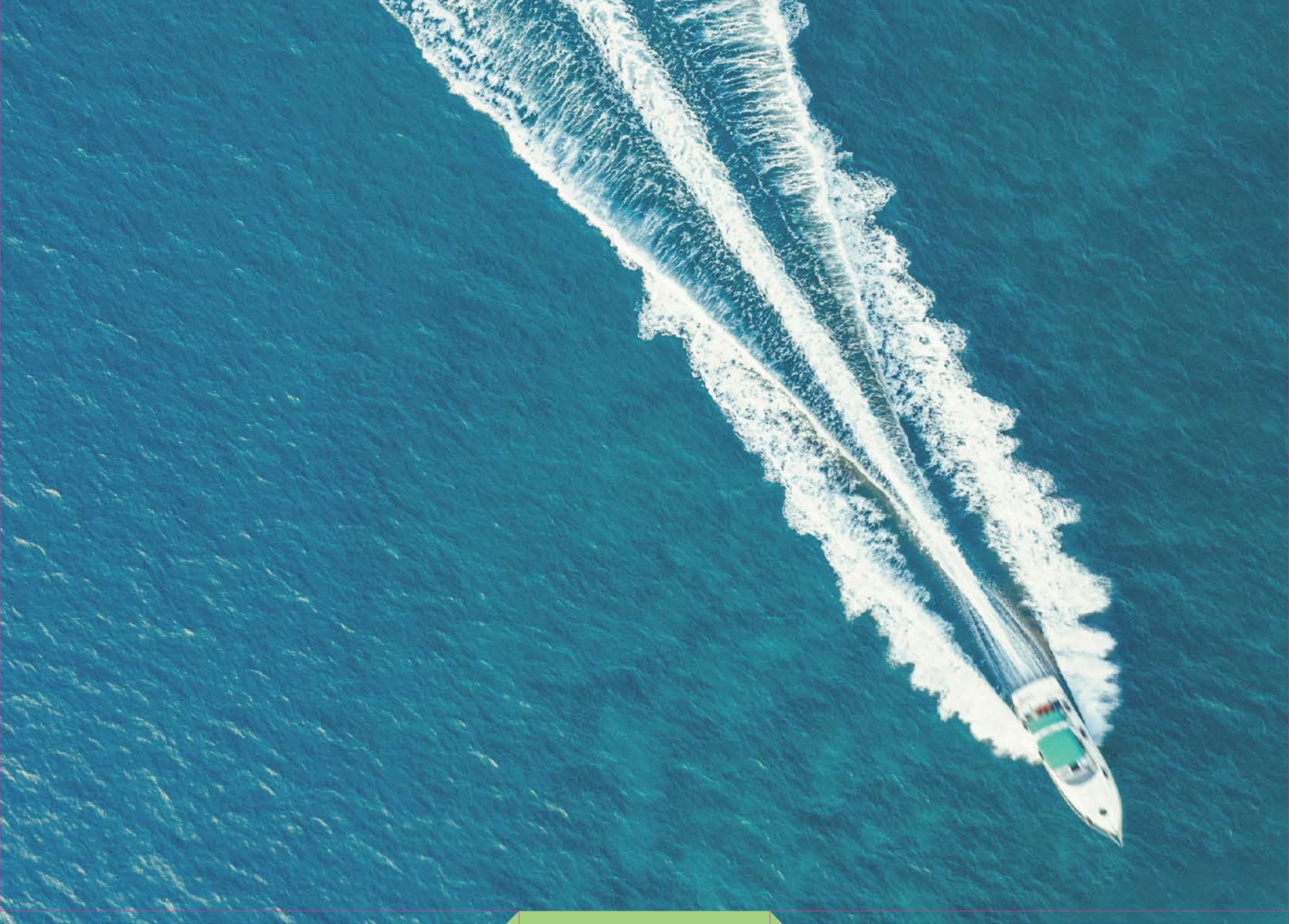
APPLICATIONS

ADNOC OGL and WR Compound is recommended for use in Open Gear Lubrication and Wire Rope Lubrication. Can also be used in Chain and Sprocket systems where bituminous compounds are recommended

PRODUCT TYPICAL CHARACTERISTICS

Physio Chemical Data	ADNOC OGL and WR Compound
Appearance	BLACK
Kinematic Viscosity, cSt at 25o C (Diluted supply viscosity)	500 - 600 cst
Kinematic Viscosity, cSt at 100o C (Undiluted)	420 - 480 cst
Density @ 15 deg C of Diluted Product	0.98 – 1.00
Flash Point OPEN CUP	< 55 deg C





MARINE

MARINE

ADNOC Lubricants | Product Catalog

ADNOC VOYAGER MARINE OIL - TPEO

DESCRIPTION

ADNOC Voyager Marine is a series of high performance diesel engine oils formulated with high quality base oils and advanced additives that provide balanced alkalinity and detergency/dispersancy even for engines burning high aromatic/asphaltenes content and high sulfur residual fuels. It also provides outstanding residual fuel compatibility characteristics for excellent engine cleanliness, especially in crankshaft area, ring belt and piston under crowns. It provides excellent high temperature oxidation and thermal stability, low volatility, high load carrying properties and corrosion protection.

APPLICATIONS

ADNOC Voyager Marine is recommended for high-output, medium-speed, four-stroke trunk-piston diesel engines running with distillate and low/high sulfur fuels heavy fuel (LSFO & HSFO). They are recommended for use in main propulsion and auxiliary four stroke diesel engines fitted on sea vessels, coastal and river ships and land based power plants. It can also be used in deck machinery and other marine applications requiring SAE 30 or 40 viscosity grades. It is available in a wide range of TBNs what makes it a complete solution for different fuel types. 12-20 BN are recommended for engines operating on distillate fuel. 20-55 BN are recommended for engines operating on HFO or in LNG/HFO dual fuel mode.

BENEFITS

- Protects against the corrosive effects of high-sulfur fuels
- Excellent control on high temperature deposits
- High oxidation stability provides better viscosity control
- Effective protection against corrosion and wear
- Low oil consumption
- Superior control of sludge and lacquer formation
- Long oil service life helps to reduce maintenance and operational costs
- Excellent alkalinity retention
- Effective performance in handling contamination with water

PERFORMANCE LEVEL

- API CF
- FZG 11th stage pass
- Wärtsilä (Approved)
- MAN Energy Solutions
- Caterpillar MaK
- Yanmar
- Daihatsu

ADNOC VOYAGER MARINE OIL - TPEO

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	312	412	315	415	320	420	424	Test Methods
		SAE							
		30	40	30	40	30	40	40	
Density @15°C	kg/L	0.896	0.915	0.905	0.916	0.909	0.915	0.911	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	101.0	141.0	102.0	143.0	105.0	144.0	142.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	11.20	14.30	11.40	14.40	11.20	14.40	14.00	ASTM D445
Viscosity Index	-	101	103	102	105	103	104	95	ASTM D2270
Flash Point, COC	°C	230	230	230	230	260	260	260	ASTM D92
Base Number	mg KOH/g	12	12	15	15	20	20	24	ASTM D2896
Sulfated Ash	%mass	1.5	1.5	1.8	1.8	2.4	2.4	3.2	ASTM D874

Properties	Units	330	430	340	440	450	355	455	Test Methods
		SAE							
		30	40	30	40	40	30	40	
Density @15°C	kg/L	0.908	0.915	0.905	0.916	0.903	0.909	0.915	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	101.0	141.0	102.0	143.0	142.0	105.0	144.0	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	11.20	14.30	11.40	14.40	14.00	11.20	14.40	ASTM D445
Viscosity Index	-	101	103	102	105	95	103	104	ASTM D2270
Flash Point, COC	°C	255	265	260	260	260	260	260	ASTM D92
Base Number	mg KOH/g	30	30	40	40	50	55	55	ASTM D2896
Sulfated Ash	%mass	3.6	3.6	4.8	4.8	6.0	6.5	6.5	ASTM D874

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC VOYAGER MARINE OIL - MCL 540; 555; 570; 5100

DESCRIPTION

ADNOC Voyager Marine Oil is a series of superior, high-alkaline, diesel engine oils, formulated from high-quality base stocks and selected additives to provide optimum oxidation resistance at high temperatures and protection against ring and liner wear. It also provides high level of detergency, piston cleanliness, alkalinity retention and load-carrying ability.

APPLICATIONS

ADNOC Voyager Marine Oil series is recommended for cylinder lubrication of slow-speed, two-stroke crosshead diesel engines.

ADNOC Voyager Marine Oil 540 is IMO 2020 ready and is designed for engines burning fuels with Sulfur content below 0.5%mass.

ADNOC Voyager Marine Oil 555, 570 and **5100** versions are recommended for engines equipped with scrubber after treatment systems, burning high-Sulfur fuel oil with Sulfur content ranging from 0.5 to 3.5%mass.

BENEFITS

- Protects against the corrosive effects of high-sulfur fuels
- Excellent high temperature oxidation resistance and thermal stability
- Effective protection against rust, corrosion, wear and deposits formation
- Extended oil life and reduced maintenance costs
- Superior alkalinity retention

PERFORMANCE LEVEL

- MAN B&W two-stroke engines
- Mitsubishi Heavy Industries (MHI-MME) UE Series 2-stroke Diesel Engines

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	540	555	570	5100	Test Methods
		SAE				
		50				
Density @15°C	kg/L	0.890	0.904	0.904	0.904	ASTM D1298
Kinematic Viscosity @40°C	mm^2/s	214.7	260.0	260.0	245.5	ASTM D445
Kinematic Viscosity @100°C	mm^2/s	18.50	20.90	20.90	19.50	ASTM D445
Viscosity Index	-	96	95	95	90	ASTM D2270
Pour Point	°C	-9	-9	-9	-9	ASTM D97
Flash Point, COC	°C	246	250	250	250	ASTM D92
Base Number	mg KOH/g	40	55	70	100	ASTM D2896

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
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ADNOC STERN TUBE OIL 150

DESCRIPTION

A specially compounded steam engine lubricating oil. It is compounded with a synthetic emulsifier which readily forms a heavy lather and resists the washing effect of the condensate.

BENEFITS

- Long lasting emulsion.
- Rust protection.
- Rapid and even spreading, with good
- adhesion to metal surfaces.
- Uniform wick-feeding at low feed
- rates.
- Unaffected by prolonged storage or
- climatic conditions.
- Good oxidation stability.

APPLICATIONS

ADNOC Stern Tube Oil 150 is used in lubrication of horseshoe thrust bearings and stern tube bearings requiring an emulsion-type oil. It is also a steam engine bearing lubricant that provides excellent lubrication under wet conditions prevailing in open-frame type of reciprocating steam engines and it is particularly suitable for lubrication of bearings, guides and journals.

ADNOC Stern Tube Oil 150 is readily applied by the usual methods : mechanical lubricators, sight feeders, wick oilers, hand oiling, and as an emulsion in the eccentric splash pan

PRODUCT TYPICAL CHARACTERISTICS

Typical Inspection	ADNOC Stern Tube
Density @15°C, Kg/ltr	0.890
Kinematic Viscosity @40°C	156
Kinematic Viscosity @100°C	14.9
Viscosity Index	95
Flash Point, COC	228
Pour Point	-12

ADNOC MARINE SYSTEM OIL 306

DESCRIPTION

ADNOC Marine system oil 306 is a high quality marine system oil, formulated from high quality solvent –refined paraffin base oils and premium quality additive package. It has been developed specifically for use as system oil in modern high-output cross-head type marine diesel engines. It provides adequate lubrication for bearings and other moving parts, including cams and gears, plus effective cooling of pistons in cross-head engines even in the presence of saline water.

BENEFITS

- Protects against the corrosive effects of high-sulfur fuels
- Excellent high temperature oxidation resistance and thermal stability
- Effective protection against rust, corrosion, wear and deposits formation
- Extended oil life and reduced maintenance costs
- Superior alkalinity retention

APPLICATIONS

ADNOC Marine system oil 306 is recommended primarily for use in high out-put cross-head diesel engines in marine service particularly that requiring system oil for piston cooling. In these applications, it will prevent or reduce deposit formation in piston cooling spaces, maintain piston-cooling efficiency and reduce the incidence of piston crown cracking. Also it is recommended as crankcase oil in auxiliary engines.

PRODUCT TYPICAL CHARACTERISTICS

Properties		Units	VALUE	Test Methods
Product		-	306	-
Specific Gravity	@15°C	-	0.8940	ASTM D-1298
Viscosity	@40°C	mm^2/s	111.0	ASTM D-445
	@100°C	mm^2/s	11.90	ASTM D-445
Viscosity Index		-	95	ASTM D-2270
Flash Point,		°C	235	ASTM D-92
Pour Point	COC	°C	-12	ASTM D-97
Base Number		mg KOH/g	5.3	ASTM D-2896
Color		-	3.0	ASTM D-1500

ADNOC OUTBOARD ENGINE OIL

DESCRIPTION

Outboard Engine Oil is ashless lubricating oil formulated to meet the critical requirements of high performance, water or air cooled two-stroke gasoline engines.

APPLICATIONS

Outboard Engine Oil is recommended for high output two-stroke water or air cooled gasoline engines.
It should be added with the fuel in the ratio as recommended by the equipment manufacturer.

BENEFITS

- Controls combustion chamber and spark plug deposits build-up.
- Excellent miscibility with gasoline.
- Keeps pistons, rings, plugs and exhaust ports
- clean.
- Resistance to low temperature gel formation.
- Protects against rust by fresh or salt water

PERFORMANCE LEVEL

NMM TC-W3®

PRODUCT TYPICAL CHARACTERISTICS

Properties		Units	VALUE	Test Methods
Grade		-	-	-
Specific Gravity	@15°C	kg/L	0.8785	ASTM D1298
Viscosity	@40°C	mm^2/s	Report	ASTM D445
	@100°C	mm^2/s	7.30	ASTM D445
Flash Point	PMCC	°C	72	ASTM D-93
Pour Point		°C	-30	ASTM D97
Color		-	Green	VISUAL

SPECIALTIES

SPECIALTIES

ADNOC MOULD OIL KW

DESCRIPTION

ADNOC MOULD OIL KW is an effective mold release compounds for cast concrete products. Formulated from highly refined mineral oils, it produces a high quality concrete finish resisting blowholes and providing uniform surface finish.

APPLICATIONS

- Ready to use packs – no dilution required.
- Manual fine hair brush application or spray application through fine mist.
- Spray application should only be with a nozzle giving a fine mist.
- Over application may result in surface retardation.

BENEFITS

- Excellent performance in the prefabrication of aerated concrete with metal forms.
- High coverage, Water repellent; rust prevention

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	ADNOC MOULD OIL KW	Test Methods
Colour		L5.0	ASTM D1500
Density @ 29.5 °C	kg/L	0.892	ASTM D1298
Kinematic Viscosity @ 40°C	mm^2/s	155-165	ASTM D445
Kinematic Viscosity @ 100°C	mm^2/s	14.5	ASTM D445
Viscosity Index	-	Min 85	ASTM D2270
Total Acid Number mg	KOH/gm	Min 3.0	ASTM D 664

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC DEGREASER HD

DESCRIPTION

ADNOC Degreaser HD is a low foaming, solvent free, VOC free and environmentally friendly rust inhibited non emulsifiable quick break aqueous cleaning fluid. It provides efficient cleaning, leaving surfaces clean and oil free, offering no hazard to painted surfaces, acrylics, non-ferrous metals and soft sealants.

APPLICATIONS

ADNOC Degreaser HD is designed for use in spray wash systems such as tunnels, parts washers, ultrasonic cleaning machines and steam cleaners.

BENEFITS

- Suitable for use in spray wash systems such as tunnels, parts washers, ultrasonic cleaning machines and steam cleaners.
- Can be used at pressures up to 10 bar.
- Dilute between 2 – 5% depending upon the degree of soiling and the level of corrosion inhibition required.
- Dilutions below 1:1 are not classified as hazardous

APPLICATIONS

- Rust Inhibited - AMS 1526B
- Separator Friendly - Meets pr EN 858

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	Typical
Density @15°C	kg/L	1.03
VOC Content	-	None
pH	-	11.0
BOD/COD 5 day	%	72%

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC SYN VM 24

DESCRIPTION

ADNOC SYN VM is liquid viscosity Modifier having Shear Stability Index (SSI) 24 with excellent low temperature properties and less volatility. It is Olefin Co polymer (OCP) solubilized in GR III base oil, does not contain pour point depressant.

HANDLING

Please refer material handling safety data sheet for min –max temperature, toxicity and blending. It is recommended for long term storage with temperature not to exceed 50 C . When blending with base oils and DI packages, the blending temperature need to be below 80 C.

APPLICATIONS

Used in formulating automotive multigrade engine oils, particularly high performance gasoline and diesel engine oils that requires Euro IV, V and VI Low/mid SAP engine oils applications for stay in grade. Recommended treat level % in mass. Contact ADNOC LUBE division for accurate treat rate indications for specific applications.

5W 30	10W 30	10W 40	10W 50
7-12.5	5-8	9.5-14.5	15-22
15W 40	**20W 40**	**20W 50**	
8.0-10.5	1.5-5	7-10.5	

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	-	Test Methods
Specific Gravity @ 15°C	-	0.840	ASTM D1298
Color	-	L0.5	ASTM D-1500
Viscosity @100 C	-	1000	ASTNM D 445
Pour point C	-	-18	ASTM D 97
Flash point C	-	240	ASTM 92
Shear stability Index %	-	24	-

ADNOC ADGREEN

APPLICATIONS AND MATERIAL COMPATIBILITY

- High purity Urea Solution for the secondary treatment of SCR exhaust fumes
- Optimal storage temperature 50 C — 400C Avoid direct exposure to sunlight
- A colorless liquid made up of 67.5% demineralized water and 32.5% urea by weight.
- Used as a reagent to reduce the harmful emissions from the internal combustion diesel engines.
- In order to use this Product, the vehicle must be equipped with a SCR (Selective Catalytic Reduction) system.
- Complies with the ISO standards 22241 1 to 4 previously known as DIN 70070 Specification
- As required by SCR equipped vehicles under the provisions of Emissions standards Euro IV (Euro4), Euro V (Euro5) & Euro VI (Euro6)

	Min	Max	
Urea Content	31.8	33.2	% by weight
Density @20°C	1.0870	1.0930	g/cm^3
Refracting Index @20°C	1.3814	1.3843	-
Alkalinity as NH3		0.2	%
Bluret		0.3	%
Aldehyde		5	mg/kg
Insolubles		20	mg/kg
Phosphate (PO4)		0.5	mg/kg
Calcium		0.5	mg/kg
Iron		0.5	mg/kg
Copper		0.5	mg/kg
Zinc		0.5	mg/kg
Chromium		0.5	mg/kg
Nickel		0.5	mg/kg
Aluminium		0.5	mg/kg
Magnesium		0.5	mg/kg
Sodium		0.5	mg/kg
Potassium		0.5	mg/kg

CARBON BLACK

CARBON BLACK N220 (UV GRADE) - TYPICAL QUALITY

Properties	Units	Units		Typical Value	Test Methods
		Min	Max		
Iodine number	mg/g	112	124	118	ASTM D1510
Oil Absorption Number	ml/100 g	92	104	98	ASTM D2414
Tint Strength	% ITRB	100	114	110	ASTM D3265
Moisture (determined at Bag Packing)	wt%	-	1.0	0.9	ASTM D1509
Mass Pellet Strength	kgf	4.0	14	6	ASTM D1937
Ash content	%	Report		0.15	ASTM D1506
Sieve residue 325 mesh	ppm	-	25	15	ASTM D1514
Fines, 5 minutes	%	-	10	8	ASTM D1508
Pour Density	g/L	325	425	385	ASTM D1513
Total Sulphur content	%	-	0.10	0.08	ASTM D1619
Toluene Extraction	%	-	0.10	0.08	ASTM D4527
Statistical Thickness Surface Area	m2/g	80	-	89	ASTM D6556
Mean Primary Particle Size	nm	-	20	<20	ASTM D3849-14a

SBP SOLVENT

SBP SOLVENT (100/150) – TYPICAL QUALITY

Property	Units	Units		Typical Values	Test Methods
		Min	Max		
Odour	-	Odorless		Odorless	Olfactory
Density at 15 °C	Kg/L	Report		0.7540	ASTM D4052
Color, Saybolt	-	+ 30	-	+ 30	ASTM D156
Distillation					
Initial Boiling Point	°C	100	-	102	ASTM D86
50% vol recovered at	°C	Report		116	
End Point	°C	-	150	145	
PONA					
Paraffins	Vol%	Report		46	ASTM D5134
Olefins	Vol%	Report		0.1	
Naphthenes	Vol%	Report		49	
Aromatics	Vol%	Report		4	
Reid Vapor Pressure at 37.8 C	kPa	Report		10	ASTMD 5191
Total Sulphur	mg/Kg	-	10	2	ASTM D5453

WHITE SPIRIT

WHITE SPIRIT - TYPICAL QUALITY

Property	Units	Units		Typical Values	Test Methods
		Min	Max		
Appearance	-	Clear & Bright		Clear & Bright	Visual
Density at 15 °C	Kg/L	0.770	0.810	0.7850	ASTM D4052
Colour, Saybolt	-	+25	-	+30	ASTM D156
Flash Point, ABEL	°C	32	-	38	IP 170
Distillation					
IBP	°C	140	-	153	ASTM D86
50% vol recovered at	°C	-	Report	172	
End Point	°C	-	220	213	
Residue	Vol%	-	2.0	1.1	
Aromatics, Total	mass%	-	22	16	ASTM D6591
Bromine Number	g/100 g	-	1	<0.5	ASTM D1159
Doctor Test	-	Negative		Negative	ASTM D 4952
Mercaptan Sulfur	-	Report		<3	UOP 163
Total Sulphur	ppm wt	-	10	4	ASTM D5453
Copper Strip Corrosion at 50 °C for 3 hrs	Rating Classification	-	1	1a	ASTM D130

ADNOC INDUSTRIAL WHITE OIL

DESCRIPTION

ADNOC Industrial White Oil is a series of severely refined hydro-cracked/hydro-treated oils with highest degree of purity and are stabilized with suitable additives for oxidation/UV stability. It is colorless, odorless and tasteless, has excellent color stability and non-staining.

APPLICATIONS

ADNOC Industrial White Oil is suitable for Cosmetic and Industrial applications and is also recommended for Polystyrene and Thermoplastic industry.

PRODUCT TYPICAL CHARACTERISTICS

Properties	Units	7	14	15	22	30	35	45	68	83	107
Appearance	---	Transparent , Colorless , Bright and Clear Oily Liquid									
Odor	---	Odorless									
Color	---	30	30	30	30	30	30	30	30	30	30
Density@25 ^{0}C	gm/cc	0.820	0.852	0.852	0.855	0.847	0.852	0.855	0.860	0.861	0.861
Viscosity@40 ^{0}C	cSt	7.2	13.8	14.6	22.4	29.48	34.5	45	68	83	107
Flash Point ^{0}C	^{0}C	150	176	176	214	220	226	230	232	245	260
Pour Point ^{0}C	^{0}C	-36	-33	-33	-15	-15	-15	-15	-15	-15	-15
Total Acid Number	mg KOH/g	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC PHARMA WHITE OIL

DESCRIPTION

ADNOC Pharma White Oil is a series of severely refined hydro-cracked/hydro-treated oils with highest degree of purity and are stabilized with suitable additives for oxidation/UV stability.

APPLICATIONS

ADNOC Pharma White Oil is suitable for pharmaceutical, Cosmetic and Food industries, for direct & indirect food contact.

PERFORMANCE LEVEL

- US FDA 21 CFR 172.878 for use in, or on food for human consumption.
- US FDA 21 CFR 178.3620 for use as a component of non-food articles intended for use in contact with food for human consumption
- Surpass the current requirements of NF
- Indian Pharmacopoeia (IP)
- U.S. Pharmacopoeia (USP)
- British Pharmacopoeia (BP)
- European Pharmacopoeia (EP).

PRODUCT TYPICAL CHARACTERISTICS

TEST DESCRIPTION	Units	7	12	15	20	30	32	37	68	82
Appearance	---	Complies								
Odor	---	Odorless								
Color	---	30	30	30	30	30	30	30	30	30
Density@25 ^{0}C	gm/cc	0.82	0.828	0.83	0.83	0.83	0.845	0.845	0.86	0.87
Viscosity@40 ^{0}C	cSt	7.2	11.5	15	20	29.5	31.5	37	68	82.1
Flash Point ^{0}C	^{0}C	150	175	190	205	220	220	230	230	255
Pour Point ^{0}C	^{0}C	-30	-27	-27	-18	-15	-15	-15	-15	-12
Carbonisable Substance	---	Passes								
Acidity / Alkalinity	---	Passes								
Solid Paraffins	---	Passes								
Poly nuclear compounds	---	Passes								
Conforms to USP/NF	---	Passes								
Conforms to IP/BP	---	Passes								

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC PETROLEUM JELLY W

DESCRIPTION

ADNOC Petroleum Jelly W is a series of odorless, tasteless and homogeneous mixtures of high purity hydrogenated hydrocarbons oil & wax. They are manufactured under FDA approved & GMP facility.

APPLICATIONS

ADNOC Petroleum Jelly W is used as base materials in Pharmaceuticals, Cosmetics, Health Care, Baby Care, Lotions, Food Processing, Release agents & other industries.

PERFORMANCE LEVEL

- Indian Pharmacopoeia
- US Pharmacopoeia
- British Pharmacopoeia
- European Pharmacopoeia
- US FDA 21 CFR 172.880.

PRODUCT TYPICAL CHARACTERISTICS

Properties	TEST METHOD	PJW 48	PJW 50	PJW 52	PJW 54	PJW 56	PJW 58	PJW 51 (Spl)
Description	VISUAL	White translucent soft mass, Unctuous to touch and Odorless.						
Color (Lovibond) 2" cell	IP 17/52	2.0Y (max)*						
Color	USP	Complies						
Identification	BP /EP	Complies						
Congealing point, °C	ASTM D938	>46	>48	>50	>51	>53	>54	50 – 56
Drop Point, °C	BP /EP	48 – 50	50 – 52	52 - 54	53 – 56	56 – 58	57 – 60	50 – 60
Drop Melting Point °C	USP / ASTM	50 – 55	52 - 56	54 - 58	56 – 60	57 – 63	58 – 66	57 – 60
Consistency @ 25 °C, (dmm)	USP / BP	150 - 180	150 - 180	150 – 180	150 - 180	150 - 180	140 – 180	180 – 200
Kin. Viscosity @100 °C, cSt	ASTM D445	>4.0	>4.0	>5.0	>5.0	>5.0	>6.0	9.0 – 12.50
Sp Gravity @ 60 °C	USP	0.818 – 0.880						

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

ADNOC PETROLEUM JELLY Y

DESCRIPTION

ADNOC Petroleum Jelly Y is a series of odorless, tasteless and homogeneous mixtures of high purity hydrogenated hydrocarbons oil & wax. They are manufactured under FDA approved & GMP facility.

APPLICATIONS

ADNOC Petroleum Jelly Y is used as base materials in Pharmaceuticals, Cosmetics, Health Care, Baby Care, Lotions, Food Processing, Release agents & other industries.

PERFORMANCE LEVEL

- Indian Pharmacopoeia
- US Pharmacopoeia
- British Pharmacopoeia
- European Pharmacopoeia
- US FDA 21 CFR 172.880.

PRODUCT TYPICAL CHARACTERISTICS

Properties	TEST METHOD	PJY USP	PJY 150	PJY 151	PJY 190	PJY 195
Description	VISUAL	Yellow translucent soft mass, Unctuous to touch and Odorless.				
Color (Lovibond) 2" cell	IP 17/52	0.8R max + 2 – 4Y	0-1R + 5 – 10Y	0-2R + 20-35Y	0-1R + 10 -15Y	1-3R +18-25Y
Color	USP	Complies				
Identification	BP /EP	Complies				
Congealing point, °C	ASTM D938	47 - 52	47 - 52	50 - 56	50 - 54	47 - 50
Drop Point, °C	BP /EP	50 – 55	50 - 56	52 - 60	52 - 58	50 - 55
Drop Melting Point °C	USP / ASTM	52 - 60	50 - 60	50 - 60	55 - 60	54 - 60
Consistency @ 25 °C, (dmm)	USP / BP	150 - 190	140 - 160	140 - 160	180 - 200	180 - 210
Kin. Viscosity @100 °C, cSt	ASTM D445	4.5 – 7.0	5.0 – 7.0	5.0 – 8.0	5.0 – 7.0	11.0 – 13.0
Sp Gravity @ 60 °C	ASTM D445	0.818 – 0.880				

Minor variations in product typical test data are to be expected in normal manufacturing.

Product(s) manufactured in the United Arab Emirates by **ADNOC Distribution.**
Always follow the Original Equipment Manufacturer's recommendation (OEM) for the equipment operating conditions, product specification, drain interval and customer's maintenance practices.

TECHNICAL

TECHNICAL

ADNOC Lubricants | Product Catalog

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

API CLASSIFICATION SYSTEM

The API Engine Service Classification system currently includes twenty-three classes of service; eleven for service; eleven for service station (S series) and twelve for commercial application (C series). It is an "open ended" system, which allows for the addition of new designations without changing or deleting existing ones.

" S " SERVICE CLASSIFICATION FOR GASOLINE

SA FORMERLY FOR UTILITY GASOLINE AND DIESEL ENGINE SERVICE.

Service typical of older engines operated under such mild conditions that the protection afforded by compound oils is not required. this classification has no performance requirements and oils in this category should not be used in any engine unless specifically recommended by the equipment manufacturer.

SB FOR MINIMUM DUTY GASOLINE ENGINE SERVICE. SERVICE

typical of older engines operated under such mild conditions that only minimum protection afforded by compounding is desired. Oils designed for this service have been used since the 1930's and provided only anti-scuff capability and resistance to oil oxidation and bearing corrosion and bearing corrosion. They should not be used in any engine unless specifically recommended by the equipment manufacturer.

SC FOR 1964 GASOLINE ENGINE WARRANTY MAINTENANCE SERVICE.

Service typical of gasoline engines in 1964 through 1967 models of passenger cars and some trucks operating under engine manufacturer's warranties in effect during those model years. Oils designed for this service provide control of high and low temperature deposits, wear, rust and corrosion in gasoline engines.

SD FOR 1968 GASOLINE ENGINE WARRANTY MAINTENANCE SERVICE

Service typical of gasoline engines in 1968 through 11970 models of passenger cars and some trucks operating under engine manufacturers' warranties in effect during those model years. Also may apply to certain 1971 and/or later models as specified (or recommended) in the owners manuals. Oils designed for this service provide more protection against high and low-temperature engine deposits, wear, rust and corrosion in gasoline engines, than oils which are satisfactory for API Engine Service Classification SC and may be used when API Engine Service Classification SC is recommended.

SE FOR 1972 GASOLINE ENGINE WARRANTY MAINTENANCE SERVICE.

Service typical of gasoline engines in passenger cars and some trucks beginning with 1972 models and certain 1971 models operating under engine manufacturers warranties. Oils designed for this service provide more protection against oil oxidation, high-temperature engine deposits, rust and corrosion in gasoline engines, than oils which are satisfactory for API Engine Service Classification SD or SC and may be used when either of these classification is recommended.

SF FOR 1980 GASOLINE ENGINE WARRANTY MAINTENANCE SERVICE.

Service typical of gasoline engines in passenger cars and some trucks beginning with 1980 models operating under engine manufacturers' recommended maintenance procedures. Oils developed for this service provide increase oxidation stability and improved anti-wear performance relative to oils which meet the minimum requirements to API Service Category SE. These oils also provide protection against engine deposits, rust and corrosion. Oils meeting API Service Category SF may be used where API Service Categories SE, SD, or SC are recommended.

Note: API internationally omitted "SI" and "SK" from the sequence of categories.

SG FOR 1989 GASOLINE ENGINE WARRANTY MAINTENANCE SERVICE.

The Category SG denotes service typical of gasoline engines in passenger cars, vans and light trucks beginning with 1989 model year operating under engine manufacturers' recommended maintenance procedures. Category SG quality oils include the performance properties of API Service Category CC.
(Certain manufacturers of gasoline engine require oils also meeting API Service Category CD). Oils developed for this service provide improved control of engine deposits, oil oxidation, and engine wear relative to oils developed for previous categories. These oils also provide protection against rust and corrosion. Oils meeting API Service Category SG may be used where API Service Categories SF, SE, SF/CC or SE/ CC are recommended.

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

SH FOR 1994 GASOLINE ENGINE WARRANTY MAINTENANCE SERVICE.
The Category SH denotes service typical of gasoline engines and earlier passenger cars, vans and light trucks operation under vehicle manufacturer recommended maintenance procedures. Engine oils developed for this category provide performance requirements for API SG, which it is intended to replace, in the areas of deposit control, oil oxidation, wear, rust and corrosion. Engine oils meeting the API SH designation have been tested according to the Chemical Manufacturers Association (CMA) Product approval Code of Practice, may utilize the API Base oil interchange and Viscosity Grade Engine Testing Guidelines and may be used where API Service Category SG and earlier categories have been recommended.

SJ FOR 1997 GASOLINE ENGINE WARRANTY MAINTENANCE SERVICE.
API Service Category SJ was adopted for use in describing engine oils available in 1996. These oils are for use in service typical of gasoline engines in current and earlier passenger-car, sport utility vehicle, van, and light truck operations under vehicle manufacturers' recommended maintenance procedures. Engine oils that meet the API Service Category SJ designation may be used where API Service Category SH and earlier Categories have been recommended.

SL FOR 2001 GASOLINE ENGINE WARRANTY SERVICE.
API Service Category SL was adopted for all automotive engines presently in use. Introduced July 1, 2001, L oils are designed to provide better high-temperature deposit control and lower oil consumption. Some of these oils may also meet the latest ILSAC specification and/or quality as Energy Conserving. Engine oils that meet the APIService Category SL designation may be used where API Service Category SJ and earlier Categories have been recommended.

SM FOR 2005 GASOLINE ENGINE WARRANTY SERVICE
API Service Category SM was adopted for describing engine oils available in 2004. These oils are for use in service of gasoline engines in current and earlier passenger cars, Sport Utility Vehicles, vans and light duty trucks operating under vehicle manufacturer's recommended procedures. Engine oils that meet the API Service Category SM designation may be used where API Service Category SL and earlier Categories have been recommended.

SN INTRODUCED IN OCTOBER 2010.
Introduced in October 2010 for 2011and older vehicles, designed to provide improved high temperature deposit protection for pistons, more stringent sludge control, and seal compatibility. API SN with Resource Conserving matches ILSAC GF-5 by combining API SN performance with improved fuel economy, turbocharger protection, emission control system compatibility, and protection of engines operating on ethanol-containing fuels up to E85.

THE CURRENT AND PREVIOUS API SERVICE
Vehicle owners should refer to their owner's manuals before consulting these charts. Oils may have more than one performance level. For automotive gasoline engines, the latest API Service Category includes the performance properties of each earlier category and can be used to service older engines where earlier category oils were recommended.

Note: The letters "SI", "SK", and "SO" have been omitted from the sequence of letter designations for API Service Categories because of their common association with other organizations or systems.

INTRODUCED IN MAY 2020
SP Designed to provide protection against low-speed pre-ignition (LSPI), timing chain wear protection, improved high temperature deposit protection for pistons and turbochargers, and more stringent sludge and varnish control. API SP with Resource Conserving matches ILSAC GF-6A by combining API SP performance with improved fuel economy, emission control system protection and protection of engines operating on ethanol-containing fuels up to E85.

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

" C " COMMERCIAL CLASSIFICATION FOR DIESEL

CA FOR LIGHT DUTY DIESEL ENGINE SERVICE.
Service typical of diesel engines operated in mild to moderate duty with high-quality fuels and occasionally has included gasoline engines in mild service. They are widely used in any engine unless specifically recommended by the equipment manufacturer.

CB FOR MODERATE DUTY DIESEL ENGINE SERVICE
Service typical of diesel engines operated in mild to moderate duty with lower-quality fuels which necessitate more protection from wear and deposits. Oils designed for this service were introduced in 1949.

CC FOR MODERATE DUTY DIESEL AND GASOLINE ENGINE SERVICE.
Service typical of certain naturally aspirated turbocharged or supercharged diesel engines operated in moderate to severe-duty service and certain heavy-duty gasoline engines. Oils designed for this service provide protection from high-temperature deposits and bearing corrosion in these diesel engines and also from rust, corrosion and low temperature deposits in gasoline engines. These oils were introduced in 1961.

CD FOR SEVERE DUTY DIESEL ENGINE SERVICE.
Service typical of certain naturally-aspirated, turbocharged or supercharged diesel engines where highly effective control of wear and deposits is vital, or when using fuels of a wide quality range including high-sulphur fuels. Oils designed for this service were introduced in 1955 and provide protection from bearing corrosion and from high-temperature deposits in these diesel engines.

CD-II SEVERE DUTY TWO-STROKE CYCLE DIESEL ENGINE SERVICE.
Service typical of two-stroke cycle diesel engines requiring highly effective control over wear and deposits. Oils designed to this service also meet all performance requirement of API Service Category CD.

CE FOR SEVERE DUTY TURBOCHARGED OR SUPERCHARGE DIESEL ENGINE SERVICE.
Service typical or turbocharged or supercharged Diesel engines manufactured since 1983 and operated under both low-speed, high-load & high speed high-load conditions. Oils designed for this service may also be used when previous API engine service categories for diesel engines are recommended.

CF - INDIRECT-INJECTED DIESEL ENGINE SERVICE.
Service typical of indirect-injected diesel engines and other diesel engines that use a broad range of fuel types, including those using fuel with high sulfur content; for example, over 0.5% wt. Effective control of piston deposits, wear and copper containing bearing corrosion is essential for these engines, which may be naturally aspirated, turbocharged or supercharged. Oils designated for this service have been in existence since 1994 and may be used when API Service Category CD is recommended.

CF-2-SEVERE-DUTY TWO-STROKE CYCLE DIESEL ENGINE SERVICE.
Service typical of two-stroke cycle diesel engines requiring highly effective control over cylinder and ring-face scuffing and deposits. Oils designed to this service have been in existence since 1994 and may also be used when API Engine Service Category CD-II is recommended. These Oils do not necessarily meet the requirements of API CF or CF-4 unless they pass the test requirements for these categories.

CF-4 -1990 DIESEL ENGINE SERVICE.
Describes oils for use in high-speed, four-stroke cycle, diesel engines, API CF-4 oils exceed the requirements for the CE category providing improved control of oil consumption and piston deposits. These oils should be used in place of CE oils. They are particularly suited for on-high way, heavy-duty truck applications.

CG-4 -1994 SEVERE DUTY DIESEL ENGINE SERVICE.
API Service Category CG-4 describes oils for use in high-speed four stroke-cycle diesel engines used in both heavy-duty on-highway (0.05% wt sulfur fuel) and off-highway (less than 0.5% wt sulfur fuel) applications. CG-4 oils provide effective control over high-temperature piston deposits, wear, corrosion, foaming, oxidation stability and soot accumulation. These oils are especially effective in engines designed to meet 1994 exhaust emission standards and may also be used in engines requiring API Service Categories CD, CE and CF-4. Oils designed for this service have been in existence since 1994.

CH-4 -1998 SEVERE DUTY DIESEL ENGINE SERVICE.
API Service Category CH-4 describes oils for use in high-speed, four-stoke diesel engines designed to meet 1998 exhaust emissions standards as well as for previous model years. CH-4 oils are specifically compounded for use with diesel fuels ranging in sulfur content up to 0.5 percent weight.

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

CI-4 -2002 SEVERE DUTY DIESEL ENGINE SERVICE.API Service Category CI-4 introduced September 5, 2002 for high-speed four-stroke engines designed to meet 2004 exhaust emission standards implemented in 2002. CI-4 oils are formulated to sustain engine durability where exhaust gas recirculation (EGR) is used and are not intended for use with diesel fuels ranging in sulfur content up to 0.5% weight. Can be used in place of CD, CE, CF-4, CG-4 and CH-4 oils.

CI-4 PLUS-2004 SEVERE DUTY DIESEL ENGINE SERVICE. CI-4 Plus introduced September 1, 2004, formulated to provide a higher level of protection against soot-related viscosity increase & viscosity loss due to shear in vehicles powered by diesel engines CI-4 Plus oils are superior in performance to those meeting API CI-4, CH-4 CG-4 & CF-4 and can effectively lubricate engines calling for those API service categories.

CJ-4 -2006 SEVERE DUTY DIESEL ENGINE SERVICE. The API CJ-4 requirements describe oils for use in those high-speed four stroke cycle diesel engines designed to meet the on-highway exhaust emission standards being implemented for 2007 model year as well as for previous model years. These oils are compounded for use in all applications with diesel fuels ranging in sulfur content up to 500 ppm (0.05% by weight) However, the use of these oils with greater than 15ppm (0.0015% by weight) sulfur fuel may impact after treatment system durability and/or oil drain interval.

API CJ-4 oils exceed the performance criteria of API CI-4, CI4 PLUS, CH-4, CG-4 and CF-4 and can effectively lubricate engines calling for those API Service Categories.

API CK-4 FOR USE IN HIGH-SPEED FOUR-STROKE CYCLE DIESEL ENGINES.
API Service Category CK-4 describes oils for use in high-speed four-stroke cycle diesel engines designed to meet 2017 model year on-highway and Tier 4 non-road exhaust emission standards as well as for previous model year diesel engines. These oils are formulated for use in all applications with diesel fuels ranging in sulfur content up to 500 ppm (0.05% by weight). However, the use of these oils with greater than 15 ppm (0.0015% by weight) sulfur fuel may impact exhaust aftertreatment system durability and/or oil drain interval. These oils are especially effective at sustaining emission control system durability where particulate filters and other advanced aftertreatment systems are used. API CK-4 oils are designed to provide enhanced protection against oil oxidation, viscosity loss due to shear, and oil aeration as well as protection against catalyst poisoning, particulate filter blocking, engine wear, piston deposits, degradation of low- and high-temperature properties, and soot-related viscosity increase. API CK-4 oils exceed the performance criteria of API CJ-4, CI-4 with CI-4 PLUS, CI-4, and CH-4 and can effectively lubricate engines calling for those API Service Categories. When using CK-4 oil with higher than 15 ppm sulfur fuel, consult the engine manufacturer for service interval recommendations.

FA-4 FOR HIGH-SPEED FOUR-STROKE CYCLE DIESEL ENGINES.
API Service Category FA-4 describes certain XW-30 oils specifically formulated for use in select high-speed four-stroke cycle diesel engines designed to meet 2017 model year on-highway greenhouse gas (GHG) emission standards. These oils are formulated for use in on-highway applications with diesel fuel sulfur content up to 15 ppm (0.0015% by weight). Refer to individual engine manufacturer recommendations regarding compatibility with API FA-4 oils. These oils are blended to a high temperature high shear (HTHS) viscosity range of 2.9cP–3.2cP to assist in reducing GHG emissions. These oils are especially effective at sustaining emission control system durability where particulate filters and other advanced after treatment systems are used. API FA-4 oils are designed to provide enhanced protection against oil oxidation, viscosity loss due to shear, and oil aeration as well as protection against catalyst poisoning, particulate filter blocking, engine wear, piston deposits, degradation of low- and high-temperature properties, and soot-related viscosity increase. API FA-4 oils are not interchangeable or backward compatible with API CK-4, CJ-4, CI-4 with CI-4 PLUS, CI-4, and CH-4 oils. Refer to engine manufacturer recommendations to determine if API FA-4 oils are suitable for use. API FA-4 oils are not recommended for use with fuels having greater than 15 ppm sulfur. For fuels with sulfur content greater than 15 ppm, refer to engine manufacturer recommendations.

GEAR OIL CLASSIFICATION

API GL-1 - Specified for some manual transmissions. No friction modifiers or EP additive permitted.

API GL-2 - Worm gears - Industrial oils.

API GL-3 - Manual transmissions/moderately loaded spiral bevel axles.

API GL-4 - Spiral bevel drive axles, light duty hypoid, manual transmissions and European transaxles.

API GL-5 - Hypoid drive axles. Equivalent to MIL-L-2105C.

API GL-6 - Passenger car (hypoid axles height offset

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

TABLE 12- (CURRENT & PREVIOUS API DESIGNATION)

Current API Service Classification	Previous API Service Classification	Related Designation Military and Industry
Service Station Engine Service		
SA	ML	Straight mineral oil. Can have pour and foam depressants.
SB	MM	Antiwear-inhibited
SC	MS(1964-67)	1964 MS warranty approved: Ford M2C101-A;GM4745-M
SD	MS(1968-71)	1964 MS warranty approved: Ford M2C101-A;GM6041-M (before july 1970)
SE	None	1972 warranty approved; Ford M2C101-C M2C153-A & M2V157-A GM6136-M(SE) & 6146-M (SE/CC & SE/CD)
SF	None	1980 warranty approved; Ford M2C153-C; GM 6048-M(SF) & 6049-M (SF/CC) & GM 6085M (SF/CC & SF/CD)
SG	None	1989 warranty approved
SH	None	1994 warranty approved
SJ	None	1997 warranty approved
SL	None	2004 and older automotive engines.
SM	None	2005 and older automotive engines.
SN	None	2011 and older automotive engines.
API SP	None	2011 and older automotive engines.
Commercial & Fleet Engine Service		
CA	DG	MIL-L-2104A
CB	DM	Supplement 1
CC	DM	MIL-L-2104B(SC/CC)
CD	DS	MIL-L-45199B; Series 3; MIL-L 2104C (CD & SC); MIL-L2104D (CD/SE)
CE	None	API CD, Mack EO-K/2, Cummins NTC 400
CF-4	None	For severe duty four stroke cycle Diesel/Engine Service since 1/1/1991
CF-2	None	For service typical of modern two stroke engines manufactured since 1994.
CF	None	Suitable for severe duty in naturally aspirated, turbocharged and super charged diesel engines with high sulphur fuels.
CG-4	None	For engine which were designed to meet 1994 US emission legislations suitable for modern turbocharged or supercharged heavy duty engines.
CH-4	None	For engine which were to meet 1998 exhaust emission standard as well as for previous model years. Specifically compounded for use with diesel fuels ranging in sulfur content up to 0.5 percent weight.
CI-4	None	For engines to meet 2004 emission requirement.
CI-4 PLUS	None	These oils provide better protection against soot related viscosity increase, viscosity loss due to shear in diesel vehicles.
CI-4	None	For engines to meet 2004 emission requirement.
CJ4	None	For engnes to meet 2007 model year on highway exhaust emission standards.
CK-4	None	CK-4 describes oils for use in high-speed four-stroke cycle diesel engines designed to meet 2017 model year on-highway and Tier 4 non-road exhaust emission standards as well as for previous model year diesel engines
FA-4	None	FA-4 describes certain XW-30 oils specifically formulated for use in select high-speed four-stroke cycle diesel engines designed to meet 2017 model year on-highway greenhouse gas (GHG) emission standards

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

U.S. MILITARY CLASSIFICATION

MIL-L-2104A - Obsolete specification for crankcase oils. Required performance in the L-1 diesel engine test and the L-4 gasoline test.

MILL-2104A (SUPPLEMENTS 1) - obsolete specification for crankcase oils. Same engine tests as MIL-L2104A, but performance requirement made stricter by using higher sulphur fuel in the diesel engine test.

MIL-L-2104B - Obsolete Specification for crankcase oils for general duty service. Required performance in the 1-H, L-38 and LTD engine tests.

MIL-L-2104C - Obsolete specification for crankcase oils for service in tactical military vehicles. Equivalent to API Service CD in diesel performance and API Service SC to SD in gasoline engine performance.

MIL-L-2104D - Obsolete specification for crankcase oils for service in tactical military vehicles. Equivalent to API Service CD in diesel performance and API Service SD to SE in gasoline engine performance. MIL-L2104D replaced MIL-L2104C and represents higher performance criteria. Indicates in most cases API-CD/SE level.

MIL-L-2104E - Current specification for crankcase oils for service in tactical military vehicles. Equivalent to API Service CD-II in diesel performance and, while exceeding API Service SF in gasoline engine performance, does not quite match API Service SG performance level.

MIL-L-2105 - Obsolete specification for multi-purpose gear lubricants. Required performance at a level equivalent to API Service GL-4.

MIL-L-2105B - Obsolete specification for multi purpose automotive gear lubricants. Required performance in the L-37 and L-42 gear tests and L-33 moisture corrosion test Equivalent to API Service GL-5.

MIL-L-2105C - Current specification for multi-purpose automotive gear lubricants. Same performance requirements as MIL-L2105B but covers SAE 75w, 80w-90 and 852-140 grades..

MIL-L-2105D - As in MIL-L 2105C but allows the use of re-refined base oils.

MIL-L-45199B - Obsolete specification for crankcase oils for severe service in diesel engines. Equivalent to Caterpillar Superior Lubricants (Series 3) with addition of L-38 test.

MIL-L-46152A - Obsolete specification for commercial vehicles operated by the Military and government agencies. Does not contain restrictions on the use of re-refined base oils. Includes a limit of 0.14% on phosphorus, which was inserted to reduce fouling of catalytic converters. Combines performance requirements of API Service SE and CC.

MIL-L-46152B - Obsolete specification for crankcase oils for commercial vehicles operated by the military and government agencies. Combines requirements of API Services DF and CC. Also contains a 0.14% limit on phosphorus and contains no restrictions on the use of re-fined base oils.

MIL-L-46152C - replaced MIL-L-46152B but the changes are minor including the presentation of certificate that the oil blends do not contain carcinogens among other things. None of these minor changes made any effect on the performance level which is still at API-SF/CÇ.

MIL-L-46152D - Obsolete specification for crankcase oils for commercial vehicles operated by the military and government agencies. Combine the requirements of API services SC and CC. Provides improved disper-sancy, anti-wear and antioxidant properties over the MIL-L-46152C product.

MIL-L-46152E - Specification for crankcase oils for commercial vehicles operated by the military and government agencies. Combines the requirements of API Services SC and CC and stipulates only multigrade oils Limits are included for both high temperature high shear (HTHS) viscosity and evaporation loss.

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

SAE/ISO VISCOSITY CLASSIFICATION
SAE VISCOSITY GRADES FOR ENGINE OIL
SAE J300 REVISED JULY 04(1)

NOTE: 1 cP = 1 mPa.s; 1 cSt = 1 mm^2/s
(1) All values are critical specification as defined by ASTM D3244 (see tex, section 3).
(2) ASTM D5293
(3) ASTM D4684 (see also Appendix B and text, section 4.1).
Note that the presence of any yield stress detectable by this method constitutes a failure regardless of viscosity.
(4) ASTM D445.
(5) ASTM D4683, CEC L-36-A-90 (ASTM D4741).

SAE VG	LOW Temp. (°C) Cranking Vis. (2), Cp max	LOW Temp. (°C) Pumping Vis. (2), Cp max. with no yield stress	Low-Shear-Rate Kinematic Vis. (4) (cSt) @ 100 °C, min	Low-Shear-Rate Kinematic Vis. (5) (cSt) @ 100 °C, max.	High-Shear-Rate Vis. (5) (cSt) @ 150 °C, and 10 8S-1 min.
0W	6200 @ -35 °C	60,000 @ -40 °C	3.8	-	-
5W	6600 @ -30 °C	60,000 @ -35 °C	3.8	-	-
0W	6200 @ -35 °C	60000 @ -40 °C	3.8	-	-
5W	6600 @ -30 °C	60000 @ -35 °C	3.8	-	-
10W	7000 @ -25 °C	60000 @ -30 °C	4.1	-	-
15W	7000 @ -20 °C	60000 @ -25 °C	5.6	-	-
20W	9500 @ -15 °C	60000 @ -20 °C	5.6	-	-
25W	13000 @ -10 °C	60000 @ -15 °C	9.3	-	-
8	-	-	4.0	<6.1	1.7
12	-	-	5.0	<7.1	2.0
16	-	-	6.1	<8.2	2.3
20	-	-	6.9	<9.3	2.6
30	-	-	9.3	<12.5	2.9
40	-	-	12.5	<16.3	3.5 (0W, 5W, 10W)
40	-	-	12.5	<16.3	3.7 (other grades)
50	-	-	16.3	<21.9	3.7
60	-	-	21.9	<26.1	3.7
60	-	-	21.9	<26.1	3.7

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

SAE VISCOSITY FOR GEAR OILS

SAE J306 Standard

SAE Viscosity Grade	Maximum Temperature for Viscosity of 150,000 Cp (°C)[1]	Kinematic Viscosity at 100 °C (cSt)[2] Minimum[3]	Kinematic Viscosity at 100 °C (cSt)[2] Maximum
70W	-55	3.8	-
75W	-40	3.8	-
80W	-26	8.5	-
85W	-12	11.0	-
65	-	3.8	<5.0
70	-	5.0	<6.5
75	-	6.5	<8.5
80	-	8.5	<11.0
85	-	11.0	<13.5
90	-	13.5	<18.5
110	-	18.5	<24.0
140	-	24.0	<32.5
190	-	32.5	<41.0
250	-	41.0	-

1 Using ASTM D2983 2 Using ASTM D445 3 Limit must still be met following CEC L-45-A-99, Method C (20h)

AGMA SPECIFICATION FOR GEAR OILS

The American Gear Manufactures (AGMA) have issued specifications and recommendations for gear lubricants used in various types of gear application. AGMA standard 250.04 details specifications for rust and oxidation inhibited (R&O) and extreme-pressure (EP) lubricants used in enclosed gear drives. The viscosity brackets correspond to those given in ASTM D 2422 “Standard Recommended Practice For Viscosity System For Industrial Fluid Lubricants”.

AGMA Lubricant No.	Viscosity Limits of former AGMA ClassificationSUS at 100 °F	Corresponding ISO Viscosity Grade
1	193-235	46
2, 2EP	284-347	68
3,3EP	417-510	100
4,4EP	626-765	150
5,5EP	918-1122	220
6,6EP	1335-1632	320
7 Comp, 7EP	1919-2346	460
8 Comp, 8EP	2837-3467	680
8A Comp	4171-5098	1000

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

NLGI LUBRICATION GREASE CLASSIFICATIONS

NLGI GRADE	Worked Penetration @25°C, mm-1F	Consistency
000	445 - 475	SEMI - FLUID
00	400 - 430	SEMI - FLUID
0	355 - 385	VERY SOFT
1	310 - 340	SOFT
2	265 - 295	MEDIUM SOFT
3	220 - 250	MEDIUM
4	175 - 205	STIFF
5	130 - 160	VERY STIFF

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

ISO VISCOSITY SYSTEM FOR INDUSTRIAL OILS

Viscosity System Grade Identification	Mid-point Viscosity cSt (mm^2/s) at 40°C	Kinematic Viscosity Limits, cSt (mm^2/s) at 40°C	
		Minimum	Maximum
2	2.2	1.89	2.42
3	3.2	2.88	3.52
5	4.6	4.14	5.06
7	6.8	6.12	7.48
10	10	9.00	11.0
15	15	13.5	16.5
22	22	19.8	24.2
32	32	28.8	35.2
46	46	41.4	50.6
68	68	61.2	74.8
100	100	90.0	110
150	150	135	165
220	220	198	242
320	320	288	352
460	460	414	506
680	680	612	748
1000	1000	900	1100
1500	1500	1350	1650

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

MAIN ENGINE OIL CLASSIFICATIONS AND SPECIFICATIONS

ACEA	(A1-02, A2-96 Issue 3, A3-02, A5-02)
	(B1-02, B4-02, B5-02)
	(E5-02)
	A1/B1-04, A3/B3-04, A3/B4-04, A5/B5-04, A7/B7
	C1-04, C2-04, C3-04, C5, C6
	E2-96 Issue 5, E4-99/Issue 3, E6-04, E7-04
API	(SA, SB, SC, SD, SE, SF, SG)
	(CA, CB, CC, CD, CD-II, CE)
	SH, SJ, SL, SM, SN, SP
	CF, CF-2, CF-4, CG-4, CH-4, CI-4 PLUS, CJ-4, CK-4, FA-4
ILSAC	(ILSAC GF-1)
	ILSAC GF-2, ILSAC GF-3, ILSAC GF-4, ILSAC GF-5, ILSAC GF-6
MANUFACTURERS	(MB 227.0/.1)
	MB 226.5, MB 226.51, MB 229.3, MB 229.31, MB 229.5, MB 229.51, MB 229.52, MB 229.6, MB 229.61, MB 229.71 MB229.72 MB 228.23, MB 228.31, MB 228.5, MB 228.51, MB 228.52, MB 228.61
	MAN M 3275-1/2, M 3277, M 3377, M 3477, M 3575, M 3677, M 3777, M 3977
	MTU Oil category 1, 2, 2.1, 3, 3.1
	(RVI E2 R, RVI E3 R)
	RVI RXD, RVI RD-2, RVI RLD, RVI RLD-2, RVI RXT
	VOLVO VDS, VOLVO VDS-2, VOLVO VDS-3, VOLVO VDS 4, VOLVO VDS 4.5
	(VW 500 00, 501 01, 521 77, 502 00, 505 00, 521 73, 521 83, 503 00, 503 01, 505 01, 506 00, 506 01, 504.00, 507.00, 508.00, 508.88, 509.00, 509.99)
	VW 521 95, 504 00, 507 00, 521 67, 501 01, 502 00, 505 01
	(Mack EO-K/2), (Mack EO-L)
	Mack EO-M, Mack EO-M PLUS, Mack EO-N Premium Plus, MAC EO-O PREMIUM PLUS, MAC EOS 4.5
	DAF HP 1, DAF HP 2
	CES 20076, CES 20077, CES 20078, CES 20081, CES 20086, CES 20087
	BMW LL-01, LL-01 FE, LL-04, LL-12 FE, LL-14 FE+, LL-17 FE+
	FORD WSS M2C153-G, M2C913-A, M2C153-H, M2C171-C
	M2C950-A, M2C948-B, M2C913-D, M2C913-C, M2C925-B, M2C917-A WSS-M2C945-A (5W-20), WSS-M2C946-A (5W-30), WSS-M2C947-A (0W-20), WSS-M2C960-A1 (5W-20), WSS-M2C961-A1 (5W-30), WSS-M2C962-A1 (0W-20), WSS-M2C963-A1 (0W-30), WSS-M2C214-B1
	GLOBAL JASO DH-1, DH-2, DH-2F, DL-0, DL-1 JASO T 902 MA/MA1/MA2/MB
	OPEL B 040 2095, OPEL B 040 2098
	SCANIA LDF, LDF-2, LDF-3 Low Ash, LDF-4, LDF-3 FS, LDF-5.
	Cat ECF-1-a, Cat ECF-2, Cat ECF-3
	DEUTZ DQC I-02, DQC II-18, DQC II-18 LA, DQC III-18, DQC III-18 LA DQC IV-18, DQC IV-18 LA
	GM dexos1 tm gen 2, dexos2 tm
	Porsche A40, C40, C30, C20
	RENAULT RN0700, RN0710, RN0720 RENAULT RLD-2, RLD-3

TECHNICAL SPECIFICATIONS AND CLASSIFICATIONS

LUBRICANTS AND GREASE PLANT

ADNOC Lubricants blending and packaging plant was set up in 1979. It has since undergone a series of development and expansion to become one of the best such plants in the region. The capacity increased more than 5 times to accommodate the increasing demand for ADNOC lubricants locally and internationally. In 1983, a Grease production unit was commisioned, the second of its kind in the world, to manufacture high quality greases.

The plant comprises the following units and facilities:

1. State of the art lubricant blending, filling and packaging facility
2. Modern grease manufacturing unit
3. High-technology brake fluid filling unit
4. Modern Transformer oil dehydration, cleaning and filling unit
5. Extensive storage facilities to meet local and export commitments

CENTRAL TESTING LABORATORY

1. In order to ensure ADNOC lubricants stringent quality control, the central laboratory was set up and equipped with the latest technology and versatile facilities to carry out comprehensive testing and quality control services. Its activities include:
   Testing of blended and imported products–routine quality control.
2. Development and approvals of new products prior to marketing
3. Used Oil analysis
4. Fuel Analysis

TECHNICAL SUPPORT

The high quality of ADNOC products is matched by excellent technical services to ADNOC customers to ensure proper and extended usage of ADNO lubricants through:

1. Oil/Engine Monitoring program that provides advice on the condition of oils and engines to ADNOC valued customers
2. Lube Surveys to advise customers on the correct type of oil for specific applications based on manufacturer specifications and recommendations
3. Various forms of technical services to help ADNOC customers in ensuring trouble free operations.

PRODUCT STORAGE AND SHELF LIFE

It is absolutely necessary to store products properly to ensure quality. It is recommended to store lubricants indoors at moderate temperatures away from dust, moisture and other contaminating sources. If outdoor storage cannot be avoided, drums must be laid on their sides with the bungs horizontal in order to prevent migration of moisture. Mixing of oils should be avoided as some oil formulations are incompatible.
The majority of ADNOC products remain suitable for use for up to 3 years when stored properly. This period can be reduced to 2 years or less if stored outdoors.
Some products may have shorter shelf lives as shown below:

LUBRICANT	TYPICAL SHELF LIFE
Base Oils	5 + Years
Heavy Duty Diesel and Passenger Car Engine Oils (mineral/synthetic)	5 Years
2T-2stroke Engine Oils	5 Years
Natural Gas Engine Oils, Locomotive Diesel Engine Oils	3 Years
Grease straight lithium, lithium complex	5 Years
Grease NLGI grade 0 and softer greases	2 Years
Coolants and Antifreeze	3 Years
Brake fluids	2 Years
Water soluble metalworking oil	1 Years
Industrial and Automotive Gear Oils and Automatic Transmission Fluids	3 Years
Hydraulic, Air & Gas Compressor, Turbine and most other industrial oils	3 Years
Heat Transfer Fluids	3 Years
Open Gear Lubricants	2 Years
Transformer oils	1 Years

MATERIAL SAFETY DATA SHEETS

Most lubricants are relatively harmless and no unusual hazard is involved in their use, provided care is taken to avoid prolonged contact and inhalation.
Material Safety data sheets (MSDS) available for all ADNOC products if required.

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