



MISR PETROLEUM co.

MISR NAUTICA OILS FOR MARINE LUBRICATION

SYSTEM OILS
CYLINDER OILS
TRUNK PISTON ENGINE OILS
HYDRAULIC OILS
GEAR OILS
COMPRESSOR OILS
GREASES
AUXILIARY ENGINE OILS
HEAT TRANSFER OILS
TURBINE OILS



MISR NAUTICA S 05/30
CROSSHEAD ENGINE CRANKCASE OIL

INTRODUCTION

Misr Nautica S 05/30 is a premium alkaline system lubricant Incorporating the latest additive technology and is primarily designed for use in modern, highly rated marine crosshead type diesel engines, including the latest generation of “Camless” engines.

Misr Nautica S 05/30 is formulated from the highest quality base oils and a carefully selected balance of additives.

FEATURES AND BENEFITS

Misr Nautica S 05/30 provides the following:- good demulsibility, water tolerance and separation with regard to seawater and fresh water ingress; thermal stability and oxidation resistance are of particular importance with oil cooled pistons; anti rust properties; load carrying properties (requirements when engine application includes booster and power take off -systems) reserve alkalinity to combat acidic corrosive wear, detergents to maintain piston and crankcase cleanliness; Excellent hydraulic oil properties when used in the operating systems of the latest “Camless” or “Intelligent” engines.

TECHNICAL DATA

Typical Characteristics	Misr Nautica S 05/30
SAE Viscosity Grade	30
Density @ 15°C	0.89
Viscosity @ 100°C, cSt	9.3-12.4
Base Number	5
Flash Point, COC, °C	215
Pour Point, °C	-18



MISR NAUTICA C 70/50
CROSSHEAD ENGINE CYLINDER OIL

INTRODUCTION

Misr Nautica C 70/50 is developed to provide superior performance at the higher temperatures and pressures in modern engines.

FEATURES AND BENEFITS

In addition to its balanced blend of acid-neutralising and detergent additives, it incorporates an ashless dispersant which assists in maintaining cleanliness of cylinder ports, and under piston spaces. Formulated against oil breakdown at high temperatures, **Misr Nautica C 70/50** is suitable for a wide range of conditions and engine designs.

TECHNICAL DATA

Typical Characteristics	Misr Nautica C 70/50
SAE Viscosity Grade	50
Density @ 15 °C, kg/l	0.92
Viscosity @ 100°C, cSt	16.3-21.9
Base Number	70
Flash Point, COC, °C	220
Pour Point, °C	-18



MISR NAUTICA TP (15/30 & 15/40)

INTRODUCTION

Misr Nautica TP (15/30 & 15/40) is an engine oil specifically developed for use in modern highly rated marine and power generation four-stroke engines operating on distillate fuels.

This high performance lubricant has been formulated using the highest quality base oils and a unique balance of additives to offer both economic and operational benefits.

FEATURES AND BENEFITS

Misr Nautica TP (15/30& 15/40) exceeds the, API CF specification, excellent thermal and oxidative stability and enhanced performance at high temperatures.

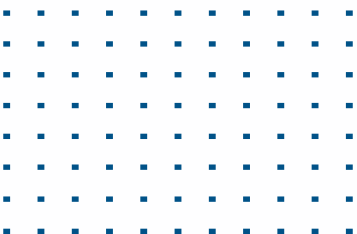
This product also exhibits high load carrying capabilities and superior gear performance that enables it to be used as a common oil for both engine and transmission systems.

The superior performance of Misr Nautica TP (15/30& 15/40) leads to reduce cost of use through:

- Cleaner piston ring belts
- Excellent engine cleanliness
- Reduced maintenance and wear
- Improved resistance to liner lacquering
- Extended time between overhauls

TECHNICAL DATA

Typical Characteristics	TP 15/30	TP 15/40
SAE Viscosity Grade	30	40
Density @15°C, kg/Ltr	0.890	0.895
Viscosity @100°C, cSt	9.3-12.4	12.5-16.2
Base Number	15	15
Flash Point, COC, °C	215	215
Pour Point, °C	-18	-18



MISR NAUTICA TP (30/30 & 30/40 & 40/40 & 40/30)



MISR NAUTICA TP (30/30 & 30/40 & 40/40 & 40/30)

INTRODUCTION

Misr Nautica TP Plus is a range of engine oils developed for use in medium speed diesel engines in marine propulsion and power generation applications. Formulated using high quality base oils, with a unique selection of additive technology systems designed to overcome the adverse conditions seen in low oil consumption engines operating with

varying heavy fuel qualities.

Misr Nautica TP Plus is available with 30, 40 BN, and SAE 30, 40 viscosity grades to suit different fuel sulphur contents and engine requirements.

FEATURES AND BENEFITS

Extensive severe field testing in heavy fuel burning engines has confirmed that **Misr Nautica TP Plus** is suitable for use in the most demanding highly rated medium speed marine diesel engines.

It excels in all the performance requirements demanded of a truly high quality marine lubricant:-

- Exceeds API CF specification
- Superior wear performance
- Improved thermal & oxidation stability
- Anti-rust against salt water
- High load carrying properties
- Excellent anti-foam properties
- Tolerant to water contamination

TECHNICAL DATA

Typical Characteristics	30/30	30/40	40/30	40/40
SAE Viscosity Grade	30	40	30	40
Density @15°C, kg/L	0.80	0.90	0.89	0.90
Viscosity @ 100°C, cSt	9.3-12.4	12.5-16.2	9.3-12.4	12.5-16.2
Base Number,	30	30	40	40
Flash Point, COC, °C	215	215	215	215
Pour Point, °C	-18	-18	-18	-18



MISR NAUTICA HYDRA OILS
HYDRAULIC OILS

INTRODUCTION

Nautica Hydra Oils is a range of mineral oil based, anti-wear hydraulic fluids. The high viscosity Index of the **Nautica Hydra Oils** ensures that they are suitable for use in marine hydraulic power systems such as winches, deck cranes, steering gears, hatch cover and

hydraulic valve systems etc. **Nautica Hydra Oils** may also be used in certain marine gearboxes and for turbocharger lubrication.

FEATURES AND BENEFITS

Nautica Hydra Oils are multigrade hydraulic fluids, that is they have a high viscosity index (VI). This allows a single grade of oil to be used in marine hydraulic systems which operate in different climate zones and wide range of operating temperature.

Nautica Hydra Oils contain a highly effective zinc based anti wear additive, as demonstrated by the four ball wear, vane pump wear and FZG gear test results, **Nautica Hydra Oils** have excellent water separation property and contain a highly effective corrosion inhibitor.

Nautica Hydra Oils fully meet the air release and anti foam requirements of the major hydraulic fluid specifications. The oils also have excellent resistance to oxidation.

With the exception of silver plated components Nautica Hydra Oils are fully compatible with all commonly used system metals and are compatible with most seal materials including Nitrite, Buna-N, Viton, EP & Silicone rubbers.

TECHNICAL DATA

Typical Characteristics	Hydra 15	Hydra 22	Hydra 32	Hydra 46	Hydra 68	Hydra 100	Hydra 150
ISO Grade	15	22	32	46	68	100	150
Relative Density @ 15°C, kg/ltr	0.88	0.88	0.88	0.88	0.88	0.88	0.89
Viscosity @ 40°C, cSt	15.0	22.0	32.0	32.0	32.0	100.0	150.0
Viscosity Index	140	140	140	140	140	120	120
Flash Point, COC, °C	175	185	185	185	185	205	210

PERFORMANCE LEVELS

DIN 51524 PART I & PART II & PART III

CINCINNATI MILACRON P68, P69, P70

DENISON HF-0 HF-2 HF-1

MIL-H-17672D

U.S. Steel 127,136

VICKERS I-286-S , M - 2950-S



MISR NAUTICA GEAR OILS
EXTREME PRESSURE GEAR OILS

INTRODUCTION

Misr Nautica Gear Oils are blended from high quality base oils with sulphur-phosphorus compounds imparting extreme pressure and anti-wear properties. These oils exhibit good thermal stability and oxidation resistance.

FEATURES AND BENEFITS

They have good demulsification characteristics and low foaming tendencies while providing good rust and corrosion protection of metal surfaces.

TECHNICAL DATA

Typical Characteristics	Gear 68	Gear 100	Gear 150	Gear 220	Gear 320	Gear 460
ISO Grade	68	100	150	220	320	460
Density @ 15°C, kg/ltr	0.888	0.890	0.898	0.900	0.904	0.910
Viscosity at 40°C, cSt	68	100	150	220	320	460
Flash Point COC, °C	180	185	190	195	200	205
Pour Point, °C	-21	-21	-21	-21	-21	-21

PERFORMANCE LEVELS

US STEEL 220

US STEEL 224

AGMA 250.04

DIN 51517 PART 3

DAVID BROWN S1.53 101 E



MISR NAUTICA VDL OILS
MINERAL AIR COMPRESSOR OILS

INTRODUCTION

Misr Nautica VDL air compressor lubricants are produced from high quality base oils ensuring a good natural resistance to oxidation. They contain antioxidants, which further resist oxidation, and protection against rusting is afforded by the inclusion of selected corrosion inhibitors.

In line with the DIN 51506 specification, these grades are recommended for air compressors with air discharge temperatures up to 200°C In fact, these oils have given excellent results in compressors in which much higher air discharge temperatures have been recorded.

FEATURES AND BENEFITS

Misr Nautica VDL range is approved by leading compressor manufacturers, and can be confidently recommended to promote efficient, economical and safe operation in air compressors of all types.

The following characteristics of Misr Nautica VDL oils contribute to their high performance:-

- Excellent resistance to oxidation.
- Minimum carbonisation and fire and explosion risks.
- Reduced valve replacement and delivery Pipework cleaning.
- Minimum down time of compressors. Lower oil consumption.
- Extended oil drain intervals.
- Superior protection against rusting and corrosion.
- Easy low temperature starting.

TECHNICAL DATA

Typical Characteristics	VDL 68	VDL 100
ISO Grade	68	100
Viscosity @ 40°C, cSt	68	90.70
Flash Point, °C	215	215
Pour Point, °C	-9	-9
Water Content % max.	0.08	0.08

PERFORMANCE LEVELS

DIN 51506 VDL.

ISO/DP 6521



Misr Nautica Multipurpose EP Grease
Lithium Base Greases

INTRODUCTION

Lithium base greases are favoured for marine service because of their ability to cope with wide range of applications, which offers a variety of rationalization possibilities, an important factor in grade selection.

FEATURES AND BENEFITS

Misr Nautica EP Greases contain extreme pressure additives in addition to corrosion and oxidation inhibitors. They are employed in bearings operating under unusually heavy and shock load conditions and frequently in centralized lubrication systems where their lower consistency and resultant pumpability are essential for distribution through small bore pipework.

Misr Nautica EP Grease is high temperature Lithium grease incorporating extreme pressure additives, which confer high load carrying ability. Recommended for heavy duty rolling bearing particularly those subjected to shock loads at temperatures up to 120 °C, they are suitable for use in the presence of water, also suitable for heavily loaded plain bearing. It possesses excellent pumping characteristics and suitable for use in hand operated and automatically operated centralized grease systems.

TECHNICAL DATA

Typical Characteristics			
NLGI grade NO.	0	1	2
Worked penetration @25°C	355/385	310/340	265/295
Drop Point °C (min)	-	165	180
Base type	lithium	lithium	lithium
Max Service Temp.°C	105	105	120

PERFORMANCE LEVELS

Timken OK value= (D2509) =55 IB (Min.)

4-BALL weld load (ASTM D-25960)=280 Kg (Min.)

Copper Corrosion (ASTM D-130) =1A (Max.)

Steel Corrosion (ASTM D-1743) =1(Max.)



MISR NAUTICA D 15W - 40
AUXILIARY ENGINE OILS

INTRODUCTION

Misr Nautica D 15W - 40 is a high performance, mineral based crankcase oil suitable for turbocharged and naturally aspirated diesel engines. A particular feature of **Nautica D 15W - 40** is its excellent performance under wide range of operating temperatures.

The powerful dispersants used in **Nautica D 15W - 40** reduces low temperature, sludges and ensures that oil insoluble materials are finely and harmlessly dispersed throughout the oil mass.

FEATURES AND BENEFITS

The viscosity of **Nautica D 15W - 40** promotes easy starting and efficient lubrication at low temperatures and provides optimum protection at high temperatures without increasing oil consumption.

Extensive engine tests have demonstrated that Nautica D 15W-40 lubricant produces minimum deposit formation and wear, thereby maintaining engine efficiency.

TECHNICAL DATA

Typical Characteristics	Nautica D 15W - 40
SAE Viscosity Grade	15W40
Density@15°C	0.89
Kinematic Viscosity @ 100°C, cSt	12.5 - 16.2
Viscosity Index	125
Flash Point (COC)°C	195
Base Number	9

PERFORMANCE LEVELS

API CF /CF-2/ SF

CAT TO-2

Allison C-3

MB 227.0,227.1



MISR NAUTICA MX 15W - 40
AUXILIARY ENGINE OILS

INTRODUCTION

Misr Nautica MX Oil is a premium commercial multipurpose engine oil formulated from high quality mineral base oils and a superior technology additive to meet the severe service requirements of modern designs of diesel engines.

FEATURES AND BENEFITS

Misr Nautica MX Oil provides superior protection against oil thickening, high temperature engine deposits, oxidation, sludge and corrosion.

Misr Nautica MX Oil has excellent low temperature properties which ensure ready oil circulation on start-up to prevent wear and extend engine life time.

Misr Nautica MX Oil is recommended for use in all high performance diesel engines requiring performance level API CH-4. It also provides soot handling and extended drain intervals.

TECHNICAL DATA

Typical Characteristics	MISR NAUTICA MX 15W - 40
SAE Viscosity Grade	15W/40
Sp.Gr.@15/4°C	0.92
Kin. Vis @ 100 °C cSt	12.5/16.2
V.I.	125
T.B.N mg KOH/g	9
Flash Point C.O.C °C	195

PERFORMANCE LEVELS

API CH-4 /SJ

MB. 228.1 229.1

VOLVO VDS

Mack EO-M Plus

MAN 271

ACEA B3/98 issue 2

ACEA E2-96 issue 2

ACEA A2/96 issue 3

MTU Type 1

Cummins CES (20071, 20076)



MISR NAUTICA THERM 32
HEAT TRANSFER OIL

INTRODUCTION

Misr Nautica Therm 32 is based on a solvent refined, high viscosity index mineral oil specially selected for its high thermal and oxidation stability.

FEATURES AND BENEFITS

Whilst the viscosity of **Misr Nautica Therm 32** is relatively low, its boiling and flash points are high, making an ideal combination for use in modern closed heat transfer systems for which it was primarily designed. A low viscosity fluid is essential when operating under turbulent flow conditions to achieve very high heat transfer rates. When used in modern closed systems under controlled conditions, the maximum recommended bulk-oil temperature is 320°C.

Design for high heat transfer rates necessitates the use of a relatively low viscosity oil, under turbulent flow conditions, to minimise the static film thickness and temperature differential. High fluid flow rates (e.g. 3m/s at 320°C) are required, and are readily achieved with **Misr Nautica Therm 32**.

TECHNICAL DATA

Typical Characteristics	Misr Nautica Therm 32
Density @ 15°C, kg/ltr	0.870
Viscosity @ 40°C, cSt	28-35
Viscosity @ 100°C, cSt	5
Viscosity Index	98
Pour Point, °C	-12
Flash Point PMCC, °C	210
Flash Point COC, °C	221
Fire Point, °C	240
Auto-Ignition Temperature, °C	350
Neutralisation Value, mgKOH/g	0.05
Specific heat, kJ/kg, °C	100°C - 200°C - 300°C
Thermal Conductivity	0.113
Thermal Expansion coefficient per °C	0.00077



MISR NAUTICA TURBO OILS
TURBINE OILS

INTRODUCTION

Misr Nautica Turbo Oils formulated from high quality base oils ensuring a good natural resistance to oxidation. This is further enhanced by the addition of an anti-oxidant.

Protection against rusting is afforded by the inclusion of corrosion inhibitors, selected to avoid detriment to the good water demulsibility of these products.

FEATURES AND BENEFITS

Turbo 100

This grade meets the requirements set by most manufacturers of marine steam turbine propulsion machinery. It passes the IP/ASTM rust prevention test and has good oxidation stability measured by the IP/ASTM turbine oxidation stability test (TOST).

Turbo 68

Manufactured to the same high standard as Turbo 100, this grade meets the lower viscosity requirement favoured by some manufacturers of marine turbine propulsion machinery and is predominantly used for the lubrication of turbine driven marine auxiliary equipment. Other applications include lubrication of diesel exhaust turbochargers and as hydraulic media in certain marine systems including engine governors.

TECHNICAL DATA

Typical Characteristics	Turbo 68	Turbo 100
ISO Grade	68	100
Relative Density at 20°C	0.880	0.880
Kinematic Viscosity at 40°C, cSt	61.2 - 74.8	90 - 110
Flash Point COC, °C	205	215
Demulsification No. (sec) max.	360	360

PERFORMANCE LEVELS

GECEK 32568F

SOLAR TURBINE ES 9-224

CINCINNATI MILACRON P- 45

US STEEL 126

AFNOR NF E 48-600

DIN 51515

BS 489

MIL-H-17672 D

DENISON STANDARD HF-1



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