



DESCRIPTION :

List of lubricating oils SAE 30
4-stroke and CPP systems

GUIDANCE :

The list is to be used only as a guide.
We undertake no responsibility for difficulties
that might be caused by the oils.

USE :

REMARKS :

The firms are stated in alphabetical order.
See comments and recommendations on page 3

| | | | | | | | | |
|---|-----------|--------------------------|-------|----------------------------|--|---------------------|-----------------------|------|
| Basic Standards (MBD SB) & Suppl. Drawing No. | | EN21C Surf. roughness | | Projection | | Material / Blank | | |
| | | EN21F-m Tolerances | | Mass (kg) | | Final User Material | | |
| Date | Des. | Chk | Appd. | A C | Change / Replacement | | | C No |
| | | | | * | Replaced by Ident. No. | | | 5 |
| | | | | * | | | | 4 |
| | | | | * | | | | 3 |
| 940505 | JGR | JGR | | Z4 | Caltex, Chevron, Fina and Texaco changed | | 2-5315 | 2 |
| 930304 | LNA | JGR | | * | Shell Sirius FB 30 deleted from List | | 2-4439 | 1 |
| 921214 | JGR | JGR | | * | | | 2-4256 | 0 |
| Similar Drawing No. | | | | Replacement for Ident. No. | | | | |
| Scale | Size | Type | | | Page No | | MAN B&W Diesel A/S | |
| | A4 | | | | 01 (03) | | | |
| I No | | Description | | | | | Ident. No. | |
| 000000 | | LIST OF LUBRICATING OILS | | | | | 2031247-9 | |
| Final User Info No. | | Final User Description | | | | | Final User Ident. No. | |
| | | | | | | | | |

CAD Drawing - do not correct by hand



PROPULSION SYSTEMS



| Firm | Name of oil | Specific Gravity 15°C | Flash Point°C COC | Viscosity in cSt at | | TBN | | API Class | FZG Load (Pass) |
|---------------------|-------------------------|--------------------------|----------------------|------------------------|-------|-----|----|--------------|-----------------------|
| | | | | 40°C | 100°C | 1 | 2 | | |
| AGIP | AGIP CLADIUM 120 | 0.895 | 225 | 110 | 12 | 12 | | CD | 10 |
| | AGIP CLADIUM 300 | 0.910 | 225 | 108 | 12 | | 30 | CD | 10 |
| BP | BP ENERGOL DS3-103 | 0.898 | 214 | 111 | 12.3 | 10 | | CD | 10 |
| | BP ENERGOL DS3-153 | 0.924 | 230 | 111 | 12.2 | 15 | | CD | 10 |
| | BP ENERGOL IC-HF 253 | 0.928 | 230 | 118 | 11.5 | | 25 | CD | 10 |
| | BP ENERGOL IC-HF 303 | 0.932 | 230 | 118 | 11.5 | | 30 | CD | 10 |
| CALTEX | DELO 1000 MARINE SAE 30 | 0.897 | 245 | 112 | 12.1 | 12 | | CD | 11 |
| | DELO 2000 MARINE SAE 30 | 0.900 | 240 | 106 | 12.0 | | 20 | CD | 10 |
| | DELO 3000 MARINE SAE 30 | 0.910 | 250 | 104 | 11.8 | | 30 | CD | 10 |
| CASTROL | CASTROL MLC 30 | 0.897 | 230 | 107 | 11.5 | 12 | | CD | 11 |
| | CASTROL 215 MX SUPER | 0.898 | 252 | 103 | 11.8 | 16 | | CD | 10 |
| | CASTROL 215 MXD | 0.901 | 246 | 113 | 12.2 | | 22 | CD | 10 |
| | CASTROL MXD 303 | 0.909 | 260 | 112 | 12.2 | | 30 | CD | 10 |
| CHEVRON | DELO 1000 MARINE 30 | 0.900 | 240 | 112 | 12.1 | 12 | | CD | 11 |
| | DELO 2000 MARINE 30 | 0.900 | 240 | 106 | 12.0 | | 20 | CD | 10 |
| | DELO 3000 MARINE 30 | 0.910 | 240 | 104 | 11.8 | | 30 | CD | 10 |
| ELF LUB MARINE | DISOLA M 3015 | 0.905 | 240 | 105 | 11.5 | 14 | | CD | 12 |
| | AURELIA 3020 | 0.905 | 240 | 105 | 11.5 | 20 | | CD | 11 |
| | AURELIA 3030 | 0.910 | 240 | 105 | 11.5 | | 30 | CD | 11 |
| ESSO/ EXXON | EXXMAR 12TP 30 | 0.898 | 252 | 110 | 12.0 | 12 | | CD | 11 |
| | EXXMAR 24TP 30 | 0.906 | 246 | 110 | 12.0 | | 24 | CD | 11 |
| | EXXMAR 30TP 30 | 0.910 | 244 | 110 | 12.0 | | 30 | CD | 11 |
| FINA | FINA CAPRANO 312 | 0.895 | 240 | 106 | 11.7 | 12 | | CD | 11 |
| | FINA STELLANO 320 | 0.900 | 240 | 109 | 12.0 | | 20 | CD | 10 |
| | FINA STELLANO 330 | 0.910 | 240 | 111 | 12.2 | | 30 | CD | 10 |
| KUWAIT PETROLEUM | 08 MOZART 400 30 | 0.894 | 202 | 100 | 11.3 | 9.5 | | | 11 |
| | 08 MOZART DP 30 | 0.896 | 260 | 114 | 12.1 | 15 | | CD | 12 |
| | 08 MOZART MS 30 | 0.912 | 234 | 114 | 12.1 | | 35 | CD | 10 |
| MOBIL | MOBILGARD ADL 30 | 0.893 | 228 | 103 | 11.6 | 15 | | CD | 11 |
| | MOBILGARD 312 | 0.898 | 240 | 103 | 11.4 | 15 | | CD | 10 |
| | MOBILGARD 324 | 0.910 | 236 | 106 | 11.8 | | 30 | CD | 10 |
| NOROL | NOROL MARINE TMA 153 | 0.923 | 235 | 128 | 12.2 | 15 | | CD | 11 |
| | NOROL MARINE HA 253 | 0.928 | 230 | 118 | 11.5 | | 25 | CD | 10 |
| SHELL | SHELL GADINIA OIL 30 | 0.897 | 227 | 104 | 11.8 | 11 | | CD | 12 |
| | SHELL ARGINA S OIL | 0.904 | 227 | 100 | 11.4 | | 20 | CD | 11 |
| | SHELL ARGINA OIL T 30 | 0.910 | 226 | 104 | 11.8 | | 30 | CD | 10 |
| STATOIL | STATOIL MARWAY 1230 | 0.998 | 252 | 110 | 12.0 | 12 | | CD | 11 |
| | STATOIL MARWAY 2430 | 0.906 | 246 | 110 | 12.0 | | 24 | CD | 11 |
| | STATOIL MARWAY 3030 | 0.910 | 244 | 110 | 12.0 | | 30 | CD | 11 |
| TEXACO | TEXACO TARO XD 30 | 0.923 | 240 | 102 | 11.2 | 16 | | CD | 11 |
| | TEXACO TARO DP 30 | 0.924 | 230 | 102 | 11.2 | | 32 | CD | 11 |
| TOTAL | TOTAL RUBIA S 30 | 0.897 | 248 | 100 | 12.0 | 12 | | CD | 11 |
| | TOTAL HMA 330 | 0.898 | 240 | 112 | 12.0 | | 30 | CD | 11 |

| | | |
|-------------------------|---|-------------------------|
| DEPT/SIGN KONAM/LNA/JGR | Description LIST OF LUBRICATING OILS 4-STROKE AND CPP SYSTEMS SAE 30 | PAGE 2 (3) |
| STATUS: 1994-05-05 | | Ident. no. 2031247-9 |

LUB OILS FOR 4-STROKE ENGINES AND CPP SYSTEMS

The oil list states lubricating oils which have been used in a number of Alpha diesel engines and CPP systems with satisfactory result. In case it is requested to use a lubricating oil not included in the list, Alpha must be consulted.

Reference to the API system should be taken only as a guide, as no current specification system fully covers the needs and requirements of marine lub oils, for operating on intermediate or heavy fuel oils.

TBN (total base number) indicates the alkalinity of the lub oil and, consequently, its neutralizing effect on acids developed from the sulphur in the fuel oil.

The TBN normally reduces gradually with the time in service. The influential elements are the sulphur content in the fuel oil, the lube oil amount and the amount of refilling due to normal consumption. After a certain time of operation, the TBN will stabilize at a lower value, the TBN equilibrium. Re-filling should be with lub oil having initial TBN. See fig. 1.

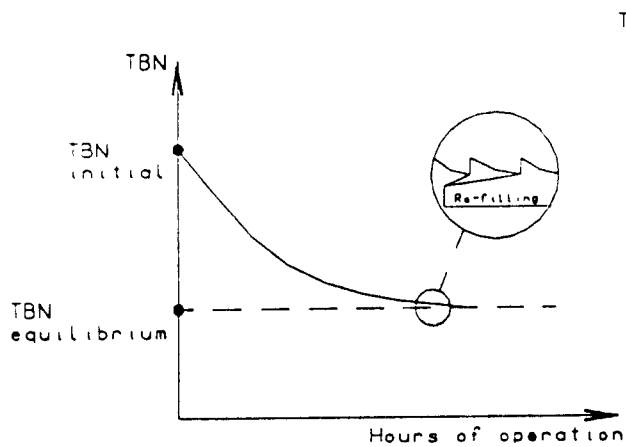


Fig. 1

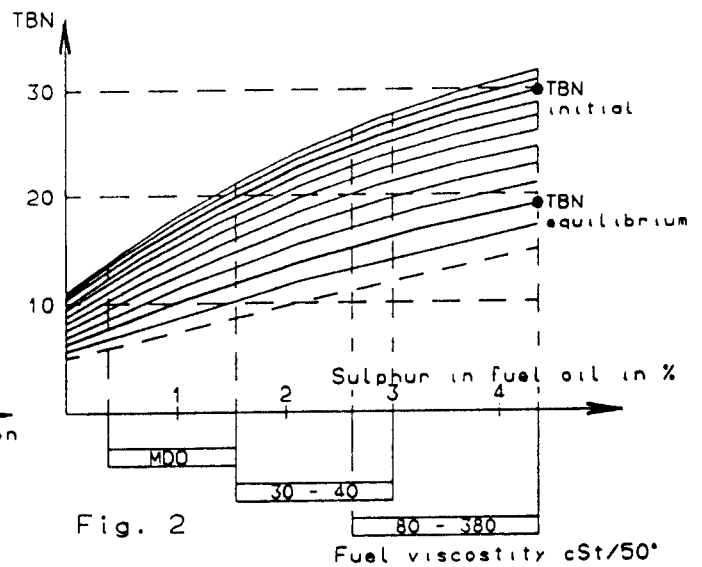


Fig. 2

When selecting a lubricating oil, attention must be paid to the fuel oil sulphur content. When operating on gas oil or diesel oil, a lubricating oil with TBN as indicated in column 1 of the oil list should be used. When operating on intermediate or heavy fuel, a lubricating oil with TBN as indicated in column 2 must be used. See fig. 2.

APPLICATION

The stated lubricating oils are also allowed for use in Alpha reduction gear, servo unit, propeller equipment and Woodward governor.

REDUCTION GEAR

An oil suitable for use in the Alpha reduction gear must obtain FZG load step 10 (Pass). The FZG load step is stated in the oil list.

PROPELLER EQUIPMENT

The specified lubricating oils are generally to be used in gear and propeller equipment. In special cases, we refer to the specified oil list from suppliers of propeller equipment and stern tube seals.

WOODWARD GOVERNOR

The oils stated in the list fulfil Woodward quality requirements.

LUBRICATING SCHEME

With regard to above requirements, we recommend that a lubricating scheme proposal is approved by Alpha.

| | | |
|-------------------------|---|-------------------------|
| DEPT/SIGN KONAM/LNA/JGR | Description LIST OF LUBRICATING OILS 4-STROKE AND CPP SYSTEMS SAE 30 | PAGE 3 (3) |
| STATUS: 1994-05-05 | | Ident. no. 2031247-9 |