

# FLS Lubricants

Key to lubricants

Description of lubricants and safety instructions

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### Note of Disclaimer

Reference by FLSmidth to any of the International or National Norms and Standards, i.e. ISO, EN, DIN, BS, etc., does not incur an obligation on FLSmidth to provide any receiver, reader or user of this Manual with samples or copies of the said Norms and Standards.

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#### NOTE !

The present instruction manual is concerned with the situations which, according to the experience of FLSmidth, are the most likely to occur. An exhaustive enumeration of all conceivable situations which may occur during the manufacturing, installation, operation and maintenance of the equipment cannot be provided.

Consequently, if a situation should arise, the occurrence of which **is not** foreseen in the instruction manual, and which the operator is/ or feels unable to handle, it is recommended that FLSmidth be contacted without undue delay for advice on appropriate action.

## 1 General information

### 1.1 Key to lubricants

FLSmidth maintains the key to lubricants in order to facilitate the choice of lubricant suppliers as well as the choice of the lubricant itself. The key to lubricants specifies mainly lubricants which are recommended for stationary machines.

Any equipment instruction manual takes precedence over this present key to lubricants.

The key to lubricants reflects those products which FLSmidth has found it necessary to register and which are normally used in FLSmidth's and sub-supplier's machinery installed in FLSmidth-supplied cement plants.

This scope of lubricants does not reflect all lubrication products necessary to operate all machinery installed in FLSmidth-supplied cement plants.

Under the designation "Special products", the product list includes oil or grease for which a test or practical use has proven that a specific product must be used.

A 4-digit code, the material code, designates each lubricant type in the FLSmidth key to lubricants. Each type of lubricants comprises a range of suppliers and products.

Products other than those specified in the key to lubricants may be used if appropriate.

The aim of the FLSmidth key to lubricants is to enable any user to choose a lubricant and to make a safe comparison between products.

### 1.2 An overview of the appendices

The introduction to section 5, Appendices, is a table giving the relationship between the viscosity code for each lubricant type and the material code.

#### 1.2.1 General and specific application of oil and grease

Appendix 1 enumerates the types of FLSmidth lubricant and all available products specified in each type.

Included are the application, property and requirement for the products registered under a material code (type of lubricant). The specified standard codes for designation and technical requirements are internationally accepted for lubricants. See the standard in sub-section 1.3.

This appendix includes lubricants which are specially approved for a certain purpose. Such lubricants may be registered under a type of lubricant (material code) without regard for any standard specifications.

#### 1.2.2 Key to oil company products

Appendix 2 includes lubricants from oil companies which meet the requirements specified in each material code.

### 1.2.3 Conversion table

Appendix 3 contains a conversion table which compares previous FLS designations with the present material code.

### 1.2.4 Changes

Appendix 4 reveals the changes in oil type and product name compared with the previous version of the key to lubricants.

## 1.3 Normative references

|      |          |   |
|------|----------|---|
| ANSI |          |   |
| AGMA | 9005-D94 | Industrial Gear Lubrication.  |
| DIN  | 51 501   | Schmieröle L-AN. Mindestanforderungen.  |
| DIN  | 51 502   | Kurzbezeichnung der Schmierstoffe und Kennzeichnung der Schmierstoffbehälter, Schmiergeräte und Schmierstellen.   |
| DIN  | 51 506   | Schmieröle VB und VC ohne Wirkstoffe und mit Wirkstoffen und Schmieröle VDL. Einteilung und Anforderungen.  |
| DIN  | 51 510   | Schmieröle Z. Mindestanforderungen.   |
| DIN  | 51 513   | Schmieröle B. Mindestanforderungen.   |
| DIN  | 51 515-1 | Schmier- und Regleröle L-TD. Mindestanforderungen.  |
| DIN  | 51 517-1 | Schmieröle C. Mindestanforderungen.   |
| DIN  | 51 517-2 | Schmieröle CL. Mindestanforderungen.  |
| DIN  | 51 517-3 | Schmieröle CLP. Mindestanforderungen.   |
| DIN  | 51 519   | ISO-Viskositätsklassifikation für flüssige Industrie-Schmierstoffe.   |
| DIN  | 51 524-1 | Hydrauliköle HL. Mindestanforderungen.  |
| DIN  | 51 524-2 | Hydrauliköle HLP. Mindestanforderungen.   |
| DIN  | 51 524-3 | Hydrauliköle HVLP. Mindestanforderungen.  |
| DIN  | 51 818   | Konsistenz-Einteilung für Schmierfette. NLGI-Klassen.   |
| DIN  | 51 825   | Schmierfette K. Einteilung und Anforderungen.   |
| DIN  | 57 370-1 | Isolieröle. Neue Isolieröle für Transformatoren und Schaltgeräte  |
| ISO  | 11 158   | Schmierstoffe, Industrieöle und verwandte Produkte (Klasse L) - Familie H (hydraulische Systeme) - Anforderungen an Kategorien HH, HL, HM, HR, HV und HG                                      |
| ISO  | 4406     | Fluidtechnik - Hydraulik-Druckflüssigkeiten - Zahlenschlüssel für den Grad der Verschmutzung durch feste Partikel   |
| ISO  | 6521     | Schmierstoffe, Industrieöle und verwandte Produkte (Klasse L) - Anforderungen an Kategorien L-DAA und L-DAB (Schmierstoffe für Kolben- und rotierende Luftkompressoren mit Tropfölschmierung) |
| ISO  | 6743-01  | Schmierstoffe, Industrieöle und verwandte Erzeugnisse (Klasse L) - Klassifizierung Teil 1: Familie (Einmal-Schmierfett)   |
| ISO  | 6743-03A | Schmierstoffe, Industrieöle und verwandte Erzeugnisse (Klasse L) - Klassifizierung Teil 3A: Familie D (Kompressoren)  |
| ISO  | 6743-04  | Schmierstoffe, Industrieöle und verwandte Erzeugnisse (Klasse L) - Klassifizierung Teil 4: Familie H (Hydrauliksysteme)   |
| ISO  | 6743-05  | Schmierstoffe, Industrieöle und verwandte Erzeugnisse (Klasse L) - Klassifizierung Teil 5: Familie T (Turbinen)   |
| ISO  | 6743-06  | Schmierstoffe, Industrieöle und verwandte Erzeugnisse (Klasse L) - Klassifizierung Teil 6: Familie C (Zahnräder)  |
| ISO  | 6743-08  | Schmierstoffe, Industrieöle und verwandte Erzeugnisse (Klasse L) - Klassifizierung Teil 8: Familie R (Zeitweiliger Korrosionsschutz)  |
| ISO  | 6743-09  | Schmierstoffe, Industrieöle und verwandte Erzeugnisse (Klasse L) - Klassifizierung Teil 9: Familie X (Fette)  |
| ISO  | 6743-11  | Schmierstoffe, Industrieöle und verwandte Erzeugnisse (Klasse L) - Klassifizierung Teil 11: Familie P (Druckluftwerkzeuge)  |

ISO 6743-12 Schmierstoffe, Industrieöle und verwandte Erzeugnisse (Klasse L) - Klassifizierung Teil 12: Familie Q (Wärmeträgermedien)

ISO 8068 Erdölprodukte und Schmierstoffe - Erdöl-Schmieröle für Turbinen (Kategorien ISO-L-TSA und ISO-L-LTGA) – Anforderungen.

## 1.4 Definitions and abbreviations

|                  |  |
|------------------|--|
| Standard product | A standard product belongs to a type of lubricant, which is described with "general application", "property" and "general requirement" in this manual. |
| Special product  | A special lubricant or group of lubricants is chosen based on a test or experience.  |
| FKM              | Fluorinated rubber.  |

## 1.5 Legend



### **Mandatory!**

This symbol appears in the instruction manual to indicate dangers which, in case of non-observance, may cause fatal or serious injuries!

### **Attention!**

This sign is shown in the instruction manual where specific attention and caution is needed to avoid damage to or destruction of the equipment and/or parts of the installation.

## 2 Use of the key to lubricants

### 2.1 The users

The following groups or persons are users:

- Client
- Lubricant supplier
- Procurement personnel
- FLSmidth mechanical and commissioning engineer

### **Attention!**

The directions in the instruction manual for given machinery take precedence over directions given in the Key to lubricants.

### 2.2 The characteristics of a type of lubricant

The application, property and requirements of the type of lubricant are numbered in the left margin aligned with the respective "General application", "Property" or "General requirement" heading.

### 2.3 The specification of lubricant

#### 2.3.1 The specification of standard lubricants

This manual specifies a 4-digit material code for each type of lubricant registered. Any "0" in the appendix 1 left margin aligned with the "Standard product" heading indicates that this type of lubricant is a standard type including products which can be used as described in the type's "general application". See definitions in sub-section 1.4.

To specify a standard product the 4-digit material code must be used. Example: "7012".

#### 2.3.2 The specification of special lubricants

Certain machines from a machine manufacturer (sub-supplier or FLSmidth) are designed to use either a special product from appendix 1 in this manual or a non-FLSmidth-coded lubricant.

The lubrication conditions for such machines are numbered from 1 to 999. The number is shown in appendix 1 in this manual in the left margin aligned with the "Special condition" heading.

One of two specifications of a special lubricant must be chosen:

- A 4-digit material code from appendix 1. This specification implies that the products in the group of "special" products from appendix 1 in this manual may be implemented at random in the said machine. Example: "7531".
- <Brand: product name>. Certain machines from a machine manufacturer (sub-supplier or FLSmidth) are designed to use a non-FLSmidth-coded lubricant. If any specific product other than one of those mentioned in appendix 1 must be used, the product must be specified as in the following example: "Shell: Alvania RL 3" or "Mobil: Mobil DTE 25".
- Where a specific product is specified in this way, only this product must be implemented in the said machine.

## 2.4 Writing style

### Attention!

Two different principles of designation of lubricants in FLSmidth documentation apply:

1. 4-digit material code.  
Example: 7012.
2. <Brand>: <Type of product>.  
Examples: "Shell: Alvania RL 3" or "Mobil: Mobil DTE 25".

## 2.5 Factory filling

The supplier or the manufacturer of mechanical equipment may choose to deliver machines filled with oil and grease before dispatch from the manufacturing and testing workshop. In this case, one of the following procedures (chosen in the specified order of precedence) for specifying the lubricant(s) must be employed:

- Lubricants specified with one or more of FLSmidth 4-digit material code(s).
- International standard codes according to DIN, ISO, ANSI/AGMA.
- A list of similar lubricants from two or more lubricant suppliers.
- A special lubricant given in the following nomenclature: <Brand>: Type of product.  
Example: Shell: Alvania RL 3 or "Mobil: Mobil DTE 25".

## 3 Safety

### 3.1 Personal safety

#### 3.1.1 Health and safety instructions

Any user of a lubrication product must be familiar with all relevant health and safety instructions from the lubrication supplier. Health and safety instructions are supplied together with the product or may be downloaded from a website from the supplier in question.

#### 3.1.2 Personal protective equipment

It is of great importance to practice a high standard of personal and workshop hygiene.

Any physical contact with lubricants or breathing of vaporised oil must be avoided. Oil with additives is toxic and must be handled with care. The toxic parts of the oils can be absorbed through the skin.

During handling of lubricants use of the following equipment is advisable:

- Waterproof, oil proof apron, gloves, goggles.
- Extraction ventilation.
- Hand washing equipment with hand protection cream.

### 3.2 Safety to equipment

#### 3.2.1 Oil cleanness

Oil may not be of sufficient cleanness. Contamination may occur from either packaging or filling from packaging to equipment. In particular hydraulic oil may show contaminants.

Cleanness ISO 4406 code -/16/13 must apply to the hydraulic oil in any FLSmidth equipment. Filtering to obtain cleanness requirement is acceptable and recommended when filling any hydraulic equipment.

### 3.3 Special products

#### **Attention!**

The special products listed in appendix 1 are approved as special products, all of which are intended for a certain FLSmidth or sub-supplier-manufactured machine or a certain group of FLSmidth (sub-supplier) machines.

The use of products for the said machines other than those chosen from the key to lubricants under "Special products" in appendix 1 or a specifically chosen non-FLSmidth-coded lubricant is not accepted and may lead to damage.

### 3.4 Storage of lubricants

All types of lubricant must be stored under clean, vented, fireproof and safe conditions. It is important that the labelling of each product is clear and legible. Basically, all lubricants must be stored indoors (certain products do not tolerate frost).

Oil barrels may be stored in the open. If so, place the barrels in a horizontal position to prevent water penetrating the thread sealing. Any thermal contraction in the barrel will suck water through even sealed plugs. The plugs must be level with each other to ensure they are covered with oil. Store the barrels in an indoor climate for up to 48 hours before use. For example if an ISO VG > 150 oil barrel has to be used and it is below 10°C, it should be kept in a heated room for 2 days before use.

Pumps, canisters, etc. must be clean. Do not use a canister for different types of lubricants since certain types of additive may have a harmful effect on a foreign lubricant.

Use a waste tray under the barrel tap and keep the surfaces clean, especially around the taps.

The storage time of lubricants may be limited. The packaging or the accompanying documents provide information about the durability of the lubricant. A first-in, first-out policy should be adopted.

If possible, the barrels should be lifted/moved with a forklift truck.

### 3.5 Cleaning of machines

Before emptying and refilling with lubricants, it may be necessary to clean machines with a cleaning agent.

#### **Attention!**

Take the necessary precautions to avoid damage to painted surfaces and not to cause fire when using cleanser.



#### **Mandatory!**

Cleaning agent may be harmful to personnel and may cause fire.

### 3.6 Disposal of waste lubricants

Before scrapping machines, the oil and grease must be emptied into approved waste canisters and disposed of according to approved procedures.



#### **Mandatory!**

Emptied lubricants will normally constitute a more dangerous product than fresh lubricants due to contamination with metal particles and foreign chemicals. The original health and safety instructions may not be sufficient to protect against any danger.

## 4 Grease

### 4.1 Compatibility

Wherever possible, greases of different types should not be mixed. The change-over of grease types should be deferred until shutdown of the equipment, when the bearings and other greased components may be cleaned thoroughly of the old grease and the new grease then introduced.

## 5 Synthetic lubricants

### 5.1 General notes

The machinery must be flushed before commissioning at the prescribed temperature and with the prescribed media. Filtering must be checked during the flushing process.

Flushing must be done for new machinery and when changing to a different type of lubricant in the machinery.

### 5.2 Polyalphaolefin (PAO)

Polyalphaolefin lubricant tolerates a full mix with mineral oil and is not aggressive to rubber sealings, paints, etc.

The following table shows examples of compatibility and is for guidance only:

|                                |                        |
|--------------------------------|------------------------|
| Nitrile rubber (Buna N)        | Below 100 °C           |
| Butyl rubber                   | Not appropriate        |
| Polyisoprene                   | Not appropriate        |
| Chlorine sulfuric polyethylene | Not appropriate        |
| Polyurethane ether             | Appropriate            |
| Ethylene acryl                 | Appropriate            |
| Polysulfide                    | Appropriate            |
| Chlorined polyethylene         | Preferred above 100 °C |
| Polyacrylate rubber            | Preferred above 100 °C |
| Fluorocarbon (Viton, Teflon)   | Preferred above 100 °C |

### 5.3 Polyglycol (PG)

Lubricants based on polyglycol must not be mixed with mineral or polyalphaolefin products or any other oil type.

#### **Attention!**

Changing the lubricant to PG oil requires a complete flushing of the gear with thin PG oil before filling with the operational PG lubricant.

Polyglycol products have the ability to absorb water and, since it is difficult to segregate water from polyglycol, the design of the machinery should prevent water from coming into contact with polyglycol lubricants. The density of polyglycol is higher than that of water.

Circulation and filtering systems must be designed to treat the high viscous polyglycol lubricant.

Polyglycol is not compatible with ordinary paints. Polyurethane or epoxy paints must be used.

Compatibility between polyglycol and rubber sealings is fairly poor. FKM (Viton) or PTFE (Teflon) should be used.

Aluminium may be discoloured on contact with polyglycol lubricants.



## 6 Appendices

### 6.1 Introduction table to appendix 1

#### Hydraulic oil HM. (SEW)

|                     |      |
|---------------------|------|
| ISO VG 15 - 22      | 7005 |
| ISO VG 32 - 46 - 68 | 7006 |

#### Hydraulic oil, HV

|           |      |
|-----------|------|
| ISO VG 10 | 7012 |
| ISO VG 15 | 7013 |

#### Hydraulic, HM. Low temperature

|           |      |
|-----------|------|
| ISO VG 32 | 7018 |
|-----------|------|

#### Hydraulic oil, HM (Flender FLUDEX)

|           |      |
|-----------|------|
| ISO VG 22 | 7019 |
| ISO VG 32 | 7020 |

#### Hydraulic oil, HM

|            |      |
|------------|------|
| ISO VG 10  | 7021 |
| ISO VG 22  | 7023 |
| ISO VG 32  | 7024 |
| ISO VG 46  | 7025 |
| ISO VG 68  | 7026 |
| ISO VG 100 | 7027 |

#### Compressor oil, synthetic

|           |      |
|-----------|------|
| ISO VG 32 | 7032 |
| ISO VG 46 | 7033 |
| ISO VG 68 | 7035 |

#### Compressor oil, mineral

|            |      |
|------------|------|
| ISO VG 68  | 7034 |
| ISO VG 100 | 7036 |

#### Turbine oil

|            |      |
|------------|------|
| ISO VG 32  | 7053 |
| ISO VG 46  | 7054 |
| ISO VG 68  | 7055 |
| ISO VG 100 | 7056 |

#### Oil for pneumatic tool

|           |      |
|-----------|------|
| ISO VG 32 | 7114 |
| ISO VG 46 | 7115 |

#### Oil for rotary blower

|            |      |
|------------|------|
| ISO VG 150 | 7123 |
| ISO VG 220 | 7124 |

#### Cylinder oil

|             |      |
|-------------|------|
| ISO VG 460  | 7134 |
| ISO VG 1000 | 7136 |

#### Enclosed Gear Unit oil (SEW)

|                  |      |
|------------------|------|
| ISO VG 100 - 150 | 7141 |
| ISO VG 220       | 7143 |
| ISO VG 680       | 7146 |

#### Enclosed Gear Unit. Mineral oil (Rossi)

|            |      |
|------------|------|
| ISO VG 150 | 7148 |
| ISO VG 220 | 7149 |
| ISO VG 320 | 7150 |
| ISO VG 460 | 7151 |

#### Enclosed Gear Unit oil

|            |      |
|------------|------|
| ISO VG 100 | 7152 |
| ISO VG 150 | 7153 |
| ISO VG 220 | 7154 |
| ISO VG 320 | 7155 |

|             |      |
|-------------|------|
| ISO VG 460  | 7156 |
| ISO VG 680  | 7157 |
| ISO VG 1000 | 7158 |

#### Enclosed Gear Unit mineral oil (Flender)

|             |      |
|-------------|------|
| ISO VG 100  | 7162 |
| ISO VG 150  | 7163 |
| ISO VG 220  | 7164 |
| ISO VG 320  | 7165 |
| ISO VG 460  | 7166 |
| ISO VG 680  | 7167 |
| ISO VG 1000 | 7168 |

#### Heat transfer oil

|           |      |
|-----------|------|
| ISO VG 32 | 7175 |
|-----------|------|

#### Transformer oil

|               |      |
|---------------|------|
| ISO VG 7 / 10 | 7195 |
| ISO VG 15     | 7196 |

#### Flushing oil

|           |      |
|-----------|------|
| ISO VG 22 | 7215 |
|-----------|------|

#### Engine oil

|                                  |      |
|----------------------------------|------|
| SAE 0W-40/5W-40. Full synthetic. | 7234 |
| SAE 15W-40                       | 7235 |

#### Kiln and mill gear units lubricant

|        |      |
|--------|------|
| ISO VG | 7253 |
| ISO VG | 7256 |
| ISO VG | 7257 |

#### Hand lubricant, open gear unit

|        |      |
|--------|------|
| ISO VG | 7265 |
|--------|------|

#### Wire lubricant

|        |      |
|--------|------|
| ISO VG | 7285 |
|--------|------|

#### Chain lubricant

|            |      |
|------------|------|
| ISO VG 22  | 7286 |
| ISO VG 100 | 7287 |

#### Synthetic oil, Polyalphaolefin (PAO, Flender)

|             |      |
|-------------|------|
| ISO VG 150  | 7302 |
| ISO VG 220  | 7303 |
| ISO VG 320  | 7304 |
| ISO VG 460  | 7305 |
| ISO VG 680  | 7306 |
| ISO VG 1000 | 7307 |

#### Synthetic oil, polyglycol (PG, Flender Worm gear)

|             |      |
|-------------|------|
| ISO VG 100  | 7308 |
| ISO VG 150  | 7309 |
| ISO VG 220  | 7310 |
| ISO VG 320  | 7311 |
| ISO VG 460  | 7312 |
| ISO VG 680  | 7313 |
| ISO VG 1000 | 7314 |

#### Synthetic oil, Polyalphaolefin (PAO, Rossi)

|            |      |
|------------|------|
| ISO VG 150 | 7322 |
| ISO VG 220 | 7323 |
| ISO VG 320 | 7324 |
| ISO VG 460 | 7325 |

**Synthetic oil, Polyalphaolefin (PAO, SEW)**

|            |      |
|------------|------|
| ISO VG 32  | 7329 |
| ISO VG 150 | 7332 |
| ISO VG 220 | 7333 |
| ISO VG 460 | 7335 |

|             |      |
|-------------|------|
| ISO VG 150  | 7391 |
| ISO VG 220  | 7392 |
| ISO VG 320  | 7393 |
| ISO VG 460  | 7394 |
| ISO VG 680  | 7395 |
| ISO VG 1000 | 7396 |
| ISO VG 1000 | 7406 |

**Synthetic oil, Polyalphaolefin (PAO)**

|             |      |
|-------------|------|
| ISO VG 32   | 7341 |
| ISO VG 46   | 7342 |
| ISO VG 68   | 7343 |
| ISO VG 100  | 7344 |
| ISO VG 150  | 7345 |
| ISO VG 220  | 7346 |
| ISO VG 320  | 7347 |
| ISO VG 460  | 7348 |
| ISO VG 680  | 7349 |
| ISO VG 1000 | 7350 |

**Grease, Multipurpose**

|        |      |
|--------|------|
| NLGI 2 | 7425 |
| NLGI 3 | 7426 |

**Grease, Low-temperature**

|        |      |
|--------|------|
| NLGI 1 | 7434 |
| NLGI 2 | 7435 |

**Grease, High-temperature**

|        |      |
|--------|------|
| NLGI 2 | 7445 |
| NLGI 2 | 7446 |

**Synthetic oil, Polyglycol (PG)**

|             |      |
|-------------|------|
| ISO VG 150  | 7353 |
| ISO VG 220  | 7354 |
| ISO VG 320  | 7355 |
| ISO VG 460  | 7356 |
| ISO VG 680  | 7357 |
| ISO VG 1000 | 7358 |

**Grease, Low-speed**

|             |      |
|-------------|------|
| NLGI 1 or 2 | 7455 |
| NLGI 1 or 2 | 7456 |
| NLGI 2      | 7457 |

**Synthetic oil, Polyglycol (PG, Rossi)**

|            |      |
|------------|------|
| ISO VG 150 | 7363 |
| ISO VG 220 | 7364 |
| ISO VG 320 | 7365 |
| ISO VG 460 | 7366 |
| ISO VG 220 | 7383 |
| ISO VG 320 | 7384 |
| ISO VG 460 | 7385 |
| ISO VG 680 | 7386 |

**Kiln and mill gear units spray lubricant**

|             |      |
|-------------|------|
| NLGI 1      | 7523 |
| NLGI 0 / 00 | 7525 |
| NLGI 0 / 00 | 7527 |
| NLGI 0 / 00 | 7529 |
| NLGI 0 / 00 | 7531 |

**Synthetic oil, Polyglycol (PG, SEW)**

|            |      |
|------------|------|
| ISO VG 220 | 7373 |
| ISO VG 680 | 7376 |

**Grease, Low viscosity (SEW)**

|            |      |
|------------|------|
| NLGI 00    | 7540 |
| NLGI 000-0 | 7541 |

**Anti-friction lubricant, live ring**

|        |      |
|--------|------|
| ISO VG | 7555 |
| ISO VG | 7557 |

**Synthetic oil, Polyglycol (PG, Flender)**

|            |      |
|------------|------|
| ISO VG 100 | 7390 |
|------------|------|

## 6.2 Appendix 1. General application of oil and grease

In addition to the general requirements from the machine manufacturer, the criteria applied by the manufacturer of the lubricant to determine the suitability of any lubricant also include factors such as low particle contamination and filterability.

**Attention: The following designation of products applies!**

A standard product: "**nnnn**"

A special product: "**nnnn**" or "**Brand: lubricant type**"

so that the "general application" or the "special condition" specified in each material number is in accordance with the actual intended application of the lubricant.

### Hydraulic oil HM. (SEW)

|   |                            |   |
|---|----------------------------|---|
| 2 | <b>General application</b> | Hydraulic systems. Lubricant for rolling and plain bearings and for lubrication of gear units where the use of extreme pressure gear oil is not required. |
| 3 | <b>Property</b>            | Hydraulic oil, HM consists of highly refined paraffinic base stocks with additives to prevent rust, oxidation and wear.                                   |
| 1 | <b>General requirement</b> | -   |

**7005 ISO VG 15 - 22**

Hydraulic oil HM. (SEW)

Designation acc. to:

|           |   |   |
|-----------|---|---|
| DIN       | : | - |
| ISO       | : | - |
| ANSI_AGMA | : | - |

Requirements acc. to:

|           |   |   |
|-----------|---|---|
| DIN       | : | - |
| ISO       | : | - |
| ANSI_AGMA | : | - |

|    |                          |  |
|----|--------------------------|--|
| 13 | <b>Special condition</b> | Special lubrication products recommended for SEW gear of type R..., K...(HK...), F... - See operating instruction SEW chapter 9 lubrication. |
|----|--------------------------|--|

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u> | <u>Comments on product</u> |
|------------------------|-------------------------|---------------------|----------------------------|
|                        | BP                      | Energol HLP-HM 15   |                            |
|                        | Caltex                  | Rando HDZ 15        |                            |
|                        | Klüber Lubrication      | Isoflex MT 30 ROT   |                            |
|                        | Mobil                   | Mobil DTE 11M       |                            |
|                        | Shell                   | Shell Tellus T 15   |                            |
|                        | Statoil                 | HydraWay HVXA 15    |                            |
|                        | Total                   | EQUIVIS ZS 15       |                            |

**7006 ISO VG 32 - 46 - 68** Hydraulic oil HM. (SEW)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

13 **Special condition** Special lubrication products recommended for SEW gear of type R..., K...(HK...), F... - See operating instruction SEW chapter 9 lubrication.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u> |
|------------------------|-------------------------|------------------------|----------------------------|
|                        | ARAL                    | Aral Degol BG 46       |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1100/68 |                            |
|                        | Fuchs Lubritech         | Renolin B 46 HVI       |                            |
|                        | Klüber Lubrication      | Klüberoil GEM 1-68 N   |                            |
|                        | Mobil                   | Mobil DTE 13M          |                            |
|                        | Shell                   | Shell Tellus T 32      |                            |
|                        | Statoil                 | HydraWay HVXA 68       |                            |
|                        | Statoil                 | HydraWay HVXA 46       |                            |
|                        | Statoil                 | HydraWay HVXA 32       |                            |
|                        | TEXACO                  | Rando EP Ashless 46    |                            |
|                        | Total                   | Equivis ZS 46          |                            |

**Hydraulic oil, HV**

- 1 **General application** Hydraulic systems working within a very large temperature range, mainly with hydrostatic drive unit. Power steering systems.
- 1 **Property** Hydraulic oil, HV consists of highly refined paraffinic base stocks with additives to prevent rust, oxidation and wear as well as additives improving the viscosity properties of the oil with increasing temperature.
- 1 **General requirement** -

**7012 ISO VG 10** Hydraulic oil, HV

|                             |                 |                              |                         |
|-----------------------------|-----------------|------------------------------|-------------------------|
| <u>Designation acc. to:</u> |                 | <u>Requirements acc. to:</u> |                         |
| DIN                         | : 51 502, HV 10 | DIN                          | : 51 524 part 3 HVLP 10 |
| ISO                         | : 6743-4, HV 10 | ISO                          | : 11 158, HV 10         |
| ANSI_AGMA                   | : -             | ANSI_AGMA                    | : -                     |

| <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u> | <u>Comments on product</u> |
|-------------------------|-------------------------|---------------------|----------------------------|
| 0                       | Castrol Classic         | Hyspin AWS 10       | DIN 51 524-2 HLP 10        |
|                         | Fuchs Lubritech         | Renolin MR 3        |                            |
|                         | Mobil                   | Mobil DTE 21        |                            |

**7013 ISO VG 15** Hydraulic oil, HV

|                             |                 |                              |                         |
|-----------------------------|-----------------|------------------------------|-------------------------|
| <u>Designation acc. to:</u> |                 | <u>Requirements acc. to:</u> |                         |
| DIN                         | : 51 502, HV 15 | DIN                          | : 51 524 part 3 HVLP 15 |
| ISO                         | : 6743-4, HV 15 | ISO                          | : 11 158, HV 15         |
| ANSI_AGMA                   | : -             | ANSI_AGMA                    | : -                     |

| <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>  | <u>Comments on product</u> |
|-------------------------|-------------------------|----------------------|----------------------------|
| 0                       | Caltex                  | Rando HDZ 15         |                            |
|                         | Castrol Classic         | Hyspin AWH-M 15      |                            |
|                         | Engen Petroleum         | Engen TQH 10/15      |                            |
|                         | ESSO-EXXON              | Esso Nuto H 15       |                            |
|                         | Fuchs Lubritech         | Renolin MR 310       |                            |
|                         | Kuwait Petroleum        | Q8 Handel 15         |                            |
|                         | Mobil                   | Mobil DTE 11M        |                            |
|                         | Rocol                   | Sapphire Hi-Power 22 |                            |
|                         | Shell                   | Shell Tellus T 15    |                            |
|                         | Statoil                 | HydraWay HVXA 15     |                            |
|                         | Total                   | EQUIVIS ZS 15        |                            |

**Hydraulic, HM. Low temperature**

- 2 **General application** Hydraulic systems. Lubricant for rolling and plain bearings and for lubrication of gear units where the use of extreme pressure gear oil is not required.
- 3 **Property** Hydraulic oil, HM consists of highly refined paraffinic base stocks with additives to prevent rust, oxidation and wear.
- 1 **General requirement** -

**7018 ISO VG 32**

Hydraulic, HM. Low temperature

|                             |              |                              |                           |
|-----------------------------|--------------|------------------------------|---------------------------|
| <u>Designation acc. to:</u> |              | <u>Requirements acc. to:</u> |                           |
| DIN                         | : 51502, HLP | DIN                          | : 51524 part 2, HLP 32-68 |
| ISO                         | : 6743-4, HM | ISO                          | : 11158, HM 32-68         |
| ANSI_AGMA                   | : -          | ANSI_AGMA                    | : -                       |

- 28 **Special condition** Transfluid transmissioni industriali. Fluid couplings KR....., -KSD-EK and CKR...../CCKR...../CCKSD..... - For operation under extreme low operation temperature Transfluid should be consulted.  
See Transfluid transmissioni industriali, fluid couplings instruction manual.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u> | <u>Comments on product</u> |
|------------------------|-------------------------|---------------------|----------------------------|
|                        | BP                      | Energol HLP-HM 32   |                            |
|                        | ESSO-EXXON              | Esso Nuto H 32      |                            |
|                        | Mobil                   | Mobil DTE 24        |                            |
|                        | Shell                   | Shell Tellus EE 32  |                            |
|                        | Shell                   | Shell Tellus T 32   |                            |
|                        | Total                   | AZOLLA ZS 32        |                            |

**Hydraulic oil, HM (Flender FLUDEX)**

- 2 **General application** Hydraulic systems. Lubricant for rolling and plain bearings and for lubrication of gear units where the use of extreme pressure gear oil is not required.
- 3 **Property** Hydraulic oil, HM consists of highly refined paraffinic base stocks with additives to prevent rust, oxidation and wear.
- 1 **General requirement** -

**7019 ISO VG 22**

Hydraulic oil, HM (Flender FLUDEX)

|                             |                  |                              |                         |
|-----------------------------|------------------|------------------------------|-------------------------|
| <u>Designation acc. to:</u> |                  | <u>Requirements acc. to:</u> |                         |
| DIN                         | : 51 502, HLP 22 | DIN                          | : 51 524 part 2, HLP 22 |
| ISO                         | : 6743-4, HM 22  | ISO                          | : 11 158, HM 22         |
| ANSI_AGMA                   | : -              | ANSI_AGMA                    | : -                     |

- 27 **Special condition** Flender FLUDEX Couplings Type FAO, FAD, FAE, FAM, FADB, FADS, FAK, FAKB AND FAR. Transfluid transmissioni industriali. Fluid couplings K-CK-CCK under normal operation temperature. . - See Flender instruction BA 4600 EN 09.04 or newer.  
See Transfluid transmissioni industriali. Fluid couplings 0509.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>      | <u>Comments on product</u> |
|------------------------|-------------------------|--------------------------|----------------------------|
|                        | ARAL                    | Aral Vitram GF 22        |                            |
|                        | BP                      | Energol HLP-HM 22        |                            |
|                        | Castrol Classic         | Hyspin DSP 22            |                            |
|                        | Castrol Classic         | Hyspin SP 22             |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 943 AW 22 |                            |
|                        | ESSO-EXXON              | Esso NUTO H 22           |                            |
|                        | Kuwait Petroleum        | Q8 Haydn 22              |                            |
|                        | Mobil                   | Mobil DTE 22             |                            |
|                        | Shell                   | Shell Tellus T 22        |                            |

**7020 ISO VG 32**

Hydraulic oil, HM (Flender FLUDEX)

|                             |                  |                              |                         |
|-----------------------------|------------------|------------------------------|-------------------------|
| <u>Designation acc. to:</u> |                  | <u>Requirements acc. to:</u> |                         |
| DIN                         | : 51 502, HLP 32 | DIN                          | : 51 524 part 2, HLP 32 |
| ISO                         | : 6743-4, HM 32  | ISO                          | : 11 158, HM 32         |
| ANSI_AGMA                   | : -              | ANSI_AGMA                    | : -                     |

- 27 **Special condition** Flender FLUDEX Couplings Type FAO, FAD, FAE, FAM, FADB, FADS, FAK, FAKB AND FAR. Transfluid transmissioni industriali. Fluid couplings K-CK-CCK under normal operation temperature. . - See Flender instruction BA 4600 EN 09.04 or newer.  
See Transfluid transmissioni industriali. Fluid couplings 0509.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>      | <u>Comments on product</u> |
|------------------------|-------------------------|--------------------------|----------------------------|
|                        | ARAL                    | Aral Vitram GF 32        |                            |
|                        | ARAL                    | Aral Degol BG 32         |                            |
|                        | BP                      | Energol HLP-HM 32        |                            |
|                        | Castrol Classic         | Hyspin SP 32             |                            |
|                        | Castrol Classic         | Hyspin DSP 32            |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 943 AW 32 |                            |
|                        | ESSO-EXXON              | Esso Nuto H 32           |                            |
|                        | Mobil                   | Mobil DTE 24             |                            |
|                        | Mobil                   | Mobilfluid 125           |                            |
|                        | Shell                   | Shell Tegula 32          |                            |
|                        | TEXACO                  | Rando-Oil 32             |                            |
|                        | TEXACO                  | Torque Fluid             |                            |

**Hydraulic oil, HM**

- 2 **General application** Hydraulic systems. Lubricant for rolling and plain bearings and for lubrication of gear units where the use of extreme pressure gear oil is not required.
- 3 **Property** Hydraulic oil, HM consists of highly refined paraffinic base stocks with additives to prevent rust, oxidation and wear.

|   |                             |   |  |                            |
|---|-----------------------------|---|--|----------------------------|
| 1 | <b>General requirement</b>  | -   |  |                            |
|   | <b>7021 ISO VG 10</b>       |   |  | Hydraulic oil, HM          |
|   | <u>Designation acc. to:</u> |   | <u>Requirements acc. to:</u>   |                            |
|   | DIN                         | : 51 502, HLP 10  | DIN  | : 51 524 part 2, HLP 10    |
|   | ISO                         | : 6743-4, HM 10   | ISO  | : 11 158, HM 10            |
|   | ANSI_AGMA                   | : -   | ANSI_AGMA  | : -                        |
| 0 | <b>Standard product</b>     | <b>Oil company name</b>   | <b>Product name</b>  | <b>Comments on product</b> |
|   |                             | Carl Bechem, GmbH<br>Kuwait Petroleum<br>Mobil  | Bechem staroil Nr. 10<br>Q8 Haydn 10<br>Mobil DTE 21   |                            |
|   | <b>7023 ISO VG 22</b>       |   |  | Hydraulic oil, HM          |
|   | <u>Designation acc. to:</u> |   | <u>Requirements acc. to:</u>   |                            |
|   | DIN                         | : 51 502, HLP 22  | DIN  | : 51 524 part 2, HLP 22    |
|   | ISO                         | : 6743-4, HM 22   | ISO  | : 11 158, HM 22            |
|   | ANSI_AGMA                   | : -   | ANSI_AGMA  | : -                        |
| 0 | <b>Standard product</b>     | <b>Oil company name</b>   | <b>Product name</b>  | <b>Comments on product</b> |
|   |                             | BP<br>Carl Bechem, GmbH<br>Castrol Classic<br>Krafft S. L.<br>Mobil<br>Shell  | Energol HLP-HM 22<br>Bechem staroil Nr. 22<br>Hyspin AWS 22<br>FH-22 EP<br>Mobil DTE 22<br>Shell Tellus 22   |                            |
|   | <b>7024 ISO VG 32</b>       |   |  | Hydraulic oil, HM          |
|   | <u>Designation acc. to:</u> |   | <u>Requirements acc. to:</u>   |                            |
|   | DIN                         | : 51 502, HLP 32  | DIN  | : 51 524 part 2, HLP 32    |
|   | ISO                         | : 6743-4, HM 32   | ISO  | : 11 158, HM 32            |
|   | ANSI_AGMA                   | : -   | ANSI_AGMA  | : -                        |
| 0 | <b>Standard product</b>     | <b>Oil company name</b>   | <b>Product name</b>  | <b>Comments on product</b> |
|   |                             | BP<br>Brugarolas<br>Caltex<br>Carl Bechem, GmbH<br>Castrol Classic<br>Castrol Performance-BP<br>Engen Petroleum<br>ESSO-EXXON<br>Fuchs Lubritech<br>India Oil Corporation<br>Klüber Lubrication<br>Krafft S. L.<br>Kuwait Petroleum<br>Kuwait Petroleum<br>Mobil<br>Rocol<br>Shell<br>Statoil<br>Statoil<br>Total | Energol HLP-HM 32<br>Fluid Drive HM-32<br>Rando HD 32<br>Bechem Staroil No. 32<br>Hyspin AWS 32<br>Castrol Tribol 943 AW 32<br>Engen TQH 20/32<br>Esso Nuto H 32<br>Renolin B 10<br>Servosystem HLP 32<br>Klübersynth UH 1 4 - 32<br>FH-32 EP<br>Q8 Haydn 32<br>Q8 Heller 32<br>Mobil DTE 24<br>Sapphire Hi-Power 32<br>Shell Tellus 32<br>HydraWay HMA 32<br>HydraWay HM 32<br>AZOLLA AF 32 | Denmark only               |
|   | <b>7025 ISO VG 46</b>       |   |  | Hydraulic oil, HM          |
|   | <u>Designation acc. to:</u> |   | <u>Requirements acc. to:</u>   |                            |
|   | DIN                         | : 51 502, HLP 46  | DIN  | : 51 524 part 2, HLP 46    |
|   | ISO                         | : 6743-4, HM 46   | ISO  | : 11 158, HM 46            |
|   | ANSI_AGMA                   | : -   | ANSI_AGMA  | : -                        |
| 0 | <b>Standard product</b>     | <b>Oil company name</b>   | <b>Product name</b>  | <b>Comments on product</b> |
|   |                             | BP<br>Brugarolas<br>Caltex<br>Carl Bechem, GmbH<br>Castrol Classic<br>Castrol Performance-BP<br>Engen Petroleum<br>ESSO-EXXON<br>Fuchs Lubritech<br>India Oil Corporation<br>Klüber Lubrication<br>Krafft S. L.<br>Kuwait Petroleum<br>Mobil<br>Rocol<br>Shell<br>Statoil<br>Statoil<br>Total                     | Energol HLP-HM 46<br>Fluid Drive HM-46<br>Rando HD 46<br>Bechem Staroil No. 46<br>Hyspin AWS 46<br>Castrol Tribol 943 AW 46<br>Engen TQH 20/46<br>Esso Nuto H 46<br>Renolin B 15<br>Servosystem HLP 46<br>Klübersynth UH 1 4 - 46<br>FH-46 EP<br>Q8 Haydn 46<br>Mobil DTE 25<br>Sapphire Hi-Power 46<br>Shell Tellus 46<br>HydraWay HMA 46<br>HydraWay HM 46<br>AZOLLA AF 46                 | Denmark only               |

**7026 ISO VG 68**

Hydraulic oil, HM

Designation acc. to:

DIN : 51 502, HLP 68  
ISO : 6743-4, HM 68  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 524 part 2, HLP 68  
ISO : 11 158, HM 68  
ANSI\_AGMA : -

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>      | <u>Comments on product</u> |
|---|-------------------------|-------------------------|--------------------------|----------------------------|
|   |                         | BP                      | Energol HLP-HM 68        |                            |
|   |                         | Brugarolas              | Fluid Drive HM-68        |                            |
|   |                         | Caltex                  | Rando HD 68              |                            |
|   |                         | Carl Bechem, GmbH       | Bechem Staroil No. 68    |                            |
|   |                         | Castrol Classic         | Hyspin AWS 68            |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 943 AW 68 |                            |
|   |                         | Engen Petroleum         | Engen TQH 20/68          |                            |
|   |                         | ESSO-EXXON              | Esso Nuto H 68           |                            |
|   |                         | Fuchs Lubritech         | Renolin B 20             |                            |
|   |                         | India Oil Corporation   | Servosystem HLP 68       |                            |
|   |                         | Klüber Lubrication      | Klübersynth UH 1 4 - 68  |                            |
|   |                         | Krafft S. L.            | FH-68 EP                 |                            |
|   |                         | Kuwait Petroleum        | Q8 Haydn 68              |                            |
|   |                         | Mobil                   | Mobil DTE 26             |                            |
|   |                         | Rocol                   | Sapphire Hi-Power 68     |                            |
|   |                         | Shell                   | Shell Tellus 68          |                            |
|   |                         | Statoil                 | HydraWay HM 68           | Denmark only               |
|   |                         | Statoil                 | HydraWay HMA 68          |                            |
|   |                         | Total                   | AZOLLA AF 68             |                            |

**7027 ISO VG 100**

Hydraulic oil, HM

Designation acc. to:

DIN : 51 502, HLP 100  
ISO : 6743-4, HM 100  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 524 part 2, HLP 100  
ISO : 11 158, HM 100  
ANSI\_AGMA : -

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u> |
|---|-------------------------|-------------------------|------------------------|----------------------------|
|   |                         | Carl Bechem, GmbH       | Bechem staroil Nr. 100 |                            |
|   |                         | Kuwait Petroleum        | Q8 Haydn 100           |                            |
|   |                         | Mobil                   | Mobil DTE 27           |                            |
|   |                         | Shell                   | Shell Tellus S 100     |                            |

**Compressor oil, synthetic oil**

- 3 **General application** Lubrication of air compressors, i.e. piston and rotary compressors for production of compressed air. Compressor outlet temperature < 220 °C.
- 28 **Property** Wax-free synthetic hydrocarbon fluids and a high technology additive system that assures exceptional resistance to oxidation and thermal degradation far superior to mineral oil-based air compressor oils and excellent wear protection. High viscosity index ensures effective lubrication at high temperatures.
- 1 **General requirement** -

**7032 ISO VG 32**

Compressor oil, synthetic oil

Designation acc. to:

DIN : 51 502, VDLHC 32  
ISO : -  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 506, VDLHC 32  
ISO : -  
ANSI\_AGMA : -

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>   | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-----------------------|----------------------------|
|   |                         | Klüber Lubrication      | Klüber - Summit SH 32 |                            |
|   |                         | Mobil                   | Mobil Rarus SHC 1024  |                            |
|   |                         | Shell                   | Shell Corena AS 32    |                            |

**7033 ISO VG 46**

Compressor oil, synthetic oil

Designation acc. to:

DIN : 51 502, VDLHC 46  
ISO : -  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 506, VDLHC 46  
ISO : -  
ANSI\_AGMA : -

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>   | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-----------------------|----------------------------|
|   |                         | Carl Bechem, GmbH       | Berusynth 46 H1       |                            |
|   |                         | Fuchs Lubritech         | Renolin SC 46         |                            |
|   |                         | Klüber Lubrication      | Klüber - Summit SH 46 |                            |
|   |                         | Mobil                   | Mobil Rarus SHC 1025  |                            |
|   |                         | Shell                   | Shell Corena AS 46    |                            |
|   |                         | Statoil                 | CompWay SX 46         |                            |

**7035 ISO VG 68**

Compressor oil, synthetic oil

|                             |                       |                              |                    |
|-----------------------------|-----------------------|------------------------------|--------------------|
| <u>Designation acc. to:</u> |                       | <u>Requirements acc. to:</u> |                    |
| DIN                         | : 51 502, VDLHC 68    | DIN                          | : 51 506, VDLHC 68 |
| ISO                         | : 6743-3A, DAC or DAJ | ISO                          | : -                |
| ANSI_AGMA                   | : -                   | ANSI_AGMA                    | : -                |

20 **Special condition** Kaeser compressor with high outlet air temperature. - No further remarks.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>  | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------|----------------------------|
|                        | ESSO-EXXON              | ESSO RS 68           |                            |
|                        | Mobil                   | Mobil Rarus SHC 1026 |                            |

**Compressor oil, mineral oil**

3 **General application** Lubrication of air compressors, i.e. piston and rotary compressors for production of compressed air. Compressor outlet temperature < 220 °C.

10 **Property** Compressor oil are made of highly refined paraffinic base stocks with additives to prevent oxidation, rust, foaming and wear.

1 **General requirement** -

**7034 ISO VG 68**

Compressor oil, mineral oil

|                             |                       |                              |                  |
|-----------------------------|-----------------------|------------------------------|------------------|
| <u>Designation acc. to:</u> |                       | <u>Requirements acc. to:</u> |                  |
| DIN                         | : 51 502, VDL 68      | DIN                          | : 51 506, VDL 68 |
| ISO                         | : 6743-3A, DAC or DAJ | ISO                          | : -              |
| ANSI_AGMA                   | : -                   | ANSI_AGMA                    | : -              |

| <b>Standard product</b> | <b>Oil company name</b> | <b>Product name</b>    | <b>Comments on product</b>                 |
|-------------------------|-------------------------|------------------------|--|
|                         | BP                      | Energol RC - R 68      | Oil-injected screw compressor: Atlas Copco |
|                         | BP                      | Energol THB 68         | Oil-free screw compressor: Atlas Copco     |
|                         | Brugarolas              | Beslux Airlube 68      |  |
|                         | Caltex                  | RPM Compressor Oil 68  |  |
|                         | Castrol Classic         | Aircol PD 68           |  |
|                         | Engen Petroleum         | Genair 68              |  |
|                         | ESSO-EXXON              | Exxcolub 68            |  |
|                         | Fuchs Lubritech         | Renolin 102 L          |  |
|                         | Fuchs Lubritech         | Renolin SC 68          |  |
|                         | India Oil Corporation   | Servopress 68          |  |
|                         | Klüber Lubrication      | Klüber - Summit DSL 68 |  |
|                         | Krafft S. L.            | Kroil Basela 60 CP     | This product is valid for ISO VG 46        |
|                         | Kuwait Petroleum        | Q8 Schubert 68         |  |
|                         | Mobil                   | Mobil Rarus 426        |  |
|                         | Rocol                   | Sapphire Hi-Power 68   |  |
|                         | Shell                   | Shell Corena P 68      | Piston compressor. Air outlet <200 C.      |
|                         | Shell                   | Shell Corena S 68      | Rotary compressor. Air outlet <100 C.      |
|                         | Statoil                 | CompWay 68             |  |
|                         | Total                   | DACNIS P 68            |  |

**7036 ISO VG 100**

Compressor oil, mineral oil

|                             |                       |                              |                   |
|-----------------------------|-----------------------|------------------------------|-------------------|
| <u>Designation acc. to:</u> |                       | <u>Requirements acc. to:</u> |                   |
| DIN                         | : 51 502, VDL 100     | DIN                          | : 51 506, VDL 100 |
| ISO                         | : 6743-3A, DAC or DAJ | ISO                          | : -               |
| ANSI_AGMA                   | : -                   | ANSI_AGMA                    | : -               |

| <b>Standard product</b> | <b>Oil company name</b> | <b>Product name</b>     | <b>Comments on product</b>           |
|-------------------------|-------------------------|-------------------------|--------------------------------------|
|                         | Brugarolas              | Beslux Airlube 100      |                                      |
|                         | Caltex                  | RPM Compressor Oil 100  |                                      |
|                         | Carl Bechem, GmbH       | Bechem Staroil LV 100   |                                      |
|                         | Castrol Classic         | Aircol PD 100           |                                      |
|                         | Engen Petroleum         | Genair 100              |                                      |
|                         | ESSO-EXXON              | Exxcolub 100            |                                      |
|                         | Fuchs Lubritech         | Renolin 104 L           |                                      |
|                         | India Oil Corporation   | Servopress 100          |                                      |
|                         | Klüber Lubrication      | Klüber - Summit DSL 100 |                                      |
|                         | Krafft S. L.            | Kroil Basela 120 CP     | This product is valid for ISO VG 150 |
|                         | Kuwait Petroleum        | Q8 Schubert 100         |                                      |
|                         | Mobil                   | Mobil Rarus 427         |                                      |
|                         | Rocol                   | Sapphire Hi-Power 100   |                                      |
|                         | Shell                   | Shell Corena P 100      | Piston compressor                    |
|                         | Shell                   | Shell Corena S 100      | Rotary compressor                    |
|                         | Statoil                 | CompWay 100             |                                      |
|                         | Total                   | DACNIS P 100            |                                      |

**Turbine oil**

4 **General application** Lubrication of high-speed rolling and plain bearings.

11 **Property** The oil is made of highly refined paraffinic base stocks with additives to prevent oxidation, rust and foaming.

1 **General requirement** -

**7053 ISO VG 32**

Turbine oil

Designation acc. to:

DIN : 51 502, TD 32  
ISO : 6743-5, TSA  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 515 part 1 TD 32  
ISO : 8068, AR  
ANSI\_AGMA : -

0 **Standard product**      **Oil company name**      **Product name**      **Comments on product**

|                       |                   |
|-----------------------|-------------------|
| Brugarolas            | Beslux Airlube 32 |
| Caltex                | Regal EP 32       |
| Caltex                | Regal R&O 32      |
| Castrol Classic       | Perfecto T 32     |
| Engen Petroleum       | GENCIRC 32        |
| ESSO-EXXON            | Teresstic T 32    |
| Fuchs Lubritech       | Renolin SC 32     |
| India Oil Corporation | Servoprime 32     |
| Kuwait Petroleum      | Q8 Van Gogh 32    |
| Mobil                 | Mobil DTE 732     |
| Shell                 | Shell Turbo T 32  |
| Statoil               | TurbWay 32        |
| Total                 | PRESLIA 32        |

**7054 ISO VG 46**

Turbine oil

Designation acc. to:

DIN : 51 502, TD 46  
ISO : 6743-5, TSA  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 515 part 1 TD 46  
ISO : 8068, AR  
ANSI\_AGMA : -

0 **Standard product**      **Oil company name**      **Product name**      **Comments on product**

|                       |                        |
|-----------------------|------------------------|
| Brugarolas            | Beslux Airlube 46      |
| Caltex                | Regal R&O 46           |
| Caltex                | Regal EP 46            |
| Carl Bechem, GmbH     | BEICHEM STAROIL LTD 46 |
| Castrol Classic       | Perfecto T 46          |
| Engen Petroleum       | GENCIRC 46             |
| ESSO-EXXON            | Teresstic T 46         |
| Fuchs Lubritech       | Renolin SC 46          |
| India Oil Corporation | Servoprime 46          |
| Kuwait Petroleum      | Q8 Van Gogh 46         |
| Mobil                 | Mobil DTE 746          |
| Shell                 | Shell Turbo T 46       |
| Statoil               | TurbWay 46             |
| Total                 | PRESLIA 46             |

**7055 ISO VG 68**

Turbine oil

Designation acc. to:

DIN : 51 502, TD 68  
ISO : 6743-5, TSA  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 515 part 1 TD 68  
ISO : 8068, AR  
ANSI\_AGMA : -

0 **Standard product**      **Oil company name**      **Product name**      **Comments on product**

|                       |                            |
|-----------------------|----------------------------|
| Brugarolas            | Beslux Airlube 68          |
| Caltex                | Regal R&O 68               |
| Caltex                | Regal EP 68                |
| Castrol Classic       | Perfecto T 68              |
| Engen Petroleum       | GENCIRC 68                 |
| ESSO-EXXON            | Teresstic T 68             |
| Fuchs Lubritech       | Renolin SC 68              |
| India Oil Corporation | Servoprime 68              |
| Kuwait Petroleum      | Q8 Van Gogh 68             |
| Mobil                 | Mobil DTE oil heavy medium |
| Shell                 | Shell Turbo T 68           |
| Statoil               | TurbWay 68                 |
| Total                 | PRESLIA 68                 |

**7056 ISO VG 100**

Turbine oil

Designation acc. to:

DIN : -  
ISO : -  
ANSI\_AGMA : -

Requirements acc. to:

DIN : -  
ISO : -  
ANSI\_AGMA : -

0 **Standard product**      **Oil company name**      **Product name**      **Comments on product**

|       |                     |
|-------|---------------------|
| Mobil | Mobil DTE oil heavy |
| Shell | Shell Turbo T 100   |
| Total | PRESLIA 100         |



## Oil for pneumatic tool

- 5 **General application** Lubrication of all types of pneumatic tools.
- 12 **Property** Pneumatic Tool Oil consists of highly refined naphthenic or paraffinic base stocks with additives to prevent rust, wear and foam. Emulsifying additives are added.
- 2 **General requirement** The oil must be suitable for both rotary and pneumatic impact tools and suitable where small amounts of condensate occur in the compressed air. For outdoor use at temperatures below approx. +10°C the oil must contain anti-icing additives to avoid stops because of ice formations in the pneumatic equipment.

### 7114 ISO VG 32

Oil for pneumatic tool

Designation acc. to:

DIN : 51 502, D 32  
ISO : 6743 part 11 PAC or PBC  
ANSI\_AGMA : -

Requirements acc. to:

DIN : -  
ISO : 6743 part 11 PAC or PBC  
ANSI\_AGMA : -

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>              | <u>Comments on product</u> |
|---|-------------------------|-------------------------|----------------------------------|----------------------------|
|   |                         | Brugarolas              | Beslux Neulub 32                 |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol FoodProof 1840/32 | Not according to DIN/ISO   |
|   |                         | ESSO-EXXON              | Arox EP 32                       |                            |
|   |                         | Shell                   | Shell Torcula 32                 |                            |
|   |                         | Statoil                 | RockWay EP 32                    |                            |
|   |                         | Total                   | PNEUMA 32                        |                            |

### 7115 ISO VG 46

Oil for pneumatic tool

Designation acc. to:

DIN : 51 502, D 46  
ISO : 6743 part 11 PAC or PBC  
ANSI\_AGMA : -

Requirements acc. to:

DIN : -  
ISO : 6743 part 11 PAC or PBC  
ANSI\_AGMA : -

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>              | <u>Comments on product</u> |
|---|-------------------------|-------------------------|----------------------------------|----------------------------|
|   |                         | Brugarolas              | Beslux Neulub 46                 |                            |
|   |                         | Caltex                  | Aries 46                         |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol FoodProof 1840/46 | Not according to DIN/ISO   |
|   |                         | ESSO-EXXON              | Arox EP 46                       |                            |
|   |                         | Fuchs Lubritech         | Kompranol 1002                   |                            |
|   |                         | Kuwait Petroleum        | Q8 Chopin 46                     |                            |
|   |                         | Mobil                   | Mobil Almo 525                   |                            |
|   |                         | Shell                   | Shell Torcula 46                 |                            |
|   |                         | Statoil                 | RockWay EP 46                    |                            |
|   |                         | Total                   | PNEUMA 46                        |                            |

## Oil for rotary blower

- 6 **General application** Lubrication of rotary blowers. The oil is also suitable for lubrication of bearings as well as gear units which do not require extreme pressure gear oil.
- 11 **Property** The oil is made of highly refined paraffinic base stocks with additives to prevent oxidation, rust and foaming.
- 4 **General requirement** Compound oil is not accepted.

### 7123 ISO VG 150

Oil for rotary blower

Designation acc. to:

DIN : 51 502, CL 150  
ISO : 6743 part 6 CKB  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 517 part 2 CL 150  
ISO : -  
ANSI\_AGMA : 9005-D94 R&O

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-------------------------|----------------------------|
|   |                         | Brugarolas              | Beslux Gear 150         |                            |
|   |                         | Caltex                  | Meropa 150              |                            |
|   |                         | Carl Bechem, GmbH       | BECHEM OVITOL KT 150 S  |                            |
|   |                         | Castrol Classic         | Alpha SP 150            |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 1100/150 |                            |
|   |                         | Engen Petroleum         | Gencirc 150             |                            |
|   |                         | ESSO-EXXON              | Teresso 150, Nuto 150   |                            |
|   |                         | Fuchs Lubritech         | Renolin DTA 150         |                            |
|   |                         | Klüber Lubrication      | Klüberoil GEM 1-150 N   |                            |
|   |                         | Krafft S. L.            | Kroil Basela 150        |                            |
|   |                         | Kuwait Petroleum        | Q8 Goya 150             |                            |
|   |                         | Mobil                   | Mobil Vacuoline 528     |                            |
|   |                         | Shell                   | Shell Morlina 150       |                            |
|   |                         | Shell                   | Shell Omala 150         |                            |
|   |                         | Statoil                 | LubeWay XA 150          |                            |
|   |                         | Total                   | CIRKAN RO 150           |                            |

**7124 ISO VG 220**

Oil for rotary blower

Designation acc. to:

DIN : 51 502, CL 220  
ISO : 6743 part 6 CKB  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 517 part 2 CL 220  
ISO : -  
ANSI\_AGMA : 9005-D94 R&O

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-------------------------|----------------------------|
|   |                         | Brugarolas              | BesLux Gear 220         |                            |
|   |                         | Caltex                  | Meropa 220              |                            |
|   |                         | Carl Bechem, GmbH       | BECHEM OVITOL KT 220 S  |                            |
|   |                         | Castrol Classic         | Alpha SP 220            |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 1100/220 |                            |
|   |                         | Engen Petroleum         | Gencirc 220             |                            |
|   |                         | ESSO-EXXON              | Teresso 220, Nuto 220   |                            |
|   |                         | Fuchs Lubritech         | Renolin DTA 220         |                            |
|   |                         | Klüber Lubrication      | Klüberoil GEM 1-220 N   |                            |
|   |                         | Krafft S. L.            | Kroil Basela 220        |                            |
|   |                         | Kuwait Petroleum        | Q8 Goya 220             |                            |
|   |                         | Mobil                   | Mobil Vacuoline 533     |                            |
|   |                         | Rocol                   | Sapphire Hi-Torque 220  |                            |
|   |                         | Shell                   | Shell Morlina 220       |                            |
|   |                         | Shell                   | Shell Omala 220         |                            |
|   |                         | Statoil                 | LubeWay XA 220          |                            |
|   |                         | Total                   | CIRKAN RO 220           |                            |

**Cylinder oil**

- 7 **General application** Lubrication of large plain bearings and worm gear units.
- 13 **Property** Cylinder oil is made of highly refined naphthenic or paraffinic base stocks with additives to prevent rust, oxidation and foam and can be compounded with a fat oil to improve the lubricating properties.
- 8 **General requirement** DIN 51510, Z A does not apply to values for viscosity at 100°C > 25 cSt. or Flash point > 260

**7134 ISO VG 460**

Cylinder oil

Designation acc. to:

DIN : 51 502, Z 460  
ISO : -  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 510, ZA  
ISO : -  
ANSI\_AGMA : -

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>           | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-------------------------------|----------------------------|
|   |                         | Brugarolas              | Vulcasan BS                   |                            |
|   |                         | Caltex                  | Vanguard 460                  |                            |
|   |                         | Engen Petroleum         | Gencyl 460                    |                            |
|   |                         | Mobil                   | Mobil 600W Super Cylinder Oil |                            |
|   |                         | Shell                   | Shell Valvata 460             |                            |
|   |                         | Statoil                 | CylWay 460                    |                            |
|   |                         | Total                   | CYL 460                       |                            |

**7136 ISO VG 1000**

Cylinder oil

Designation acc. to:

DIN : 51 502, Z 1000  
ISO : -  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 510, ZB  
ISO : -  
ANSI\_AGMA : -

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>                  | <u>Comments on product</u> |
|---|-------------------------|-------------------------|--------------------------------------|----------------------------|
|   |                         | Brugarolas              | Vulcasan 222                         |                            |
|   |                         | Caltex                  | Vanguard 1000                        |                            |
|   |                         | Castrol Classic         | Cresta SHS                           |                            |
|   |                         | Engen Petroleum         | Gencyl 1000                          |                            |
|   |                         | ESSO-EXXON              | Cylesstic 1000                       |                            |
|   |                         | Fuchs Lubritech         | Renolin CH 500                       |                            |
|   |                         | Mobil                   | Mobil Extra Hecla Super Cylinder Oil |                            |
|   |                         | Shell                   | Mineral                              |                            |
|   |                         | Shell                   | Shell Valvata 1000                   |                            |
|   |                         | Statoil                 | CylWay 1000                          |                            |
|   |                         | Total                   | CYL 1000                             |                            |

**Enclosed Gear Unit oil (SEW)**

- 8 **General application** Lubrication of low and high-load gear units and bearings of FLS design. For gear units from other suppliers: See special recommendations from the supplier in question. Suitable for use at operating T < 90 °C approx.
- 14 **Property** This mineral oil consists of highly refined paraffinic base stocks with additives to prevent rust, wear and foam. The oil yields extreme pressure properties.
- 1 **General requirement** -

**7141 ISO VG 100 - 150**

Enclosed Gear Unit oil (SEW)

|                             |                   |                              |     |
|-----------------------------|-------------------|------------------------------|-----|
| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |     |
| DIN                         | : 51 502, CLP 100 | DIN                          | : - |
| ISO                         | : -               | ISO                          | : - |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : - |

- 17 **Special condition** Special lubrication products recommended for SEW gear of type R..., K...(HK...), F... and special lubrication products recommended for S.E.W. Gear of type S...(HS...) - See operating instruction SEW chapter 9 lubrication.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | ARAL                    | Aral Degol BG 100       |                            |
|                        | BP                      | Energol GR-XP 100       |                            |
|                        | Caltex                  | Meropa 150              |                            |
|                        | Castrol Performance-BP  | Castrol Optigear BM 100 |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1100/100 |                            |
|                        | Fuchs Lubritech         | Renolin CLP 150         |                            |
|                        | Klüber Lubrication      | Klüberoil GEM 1-150 N   |                            |
|                        | Mobil                   | Mobilgear 600 XP 100    |                            |
|                        | Shell                   | Shell Omala 100         |                            |
|                        | Statoil                 | LoadWay EP 100          |                            |
|                        | Total                   | CARTER EP 100           |                            |

**7143 ISO VG 220**

Enclosed Gear Unit oil (SEW)

|                             |                   |                              |     |
|-----------------------------|-------------------|------------------------------|-----|
| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |     |
| DIN                         | : 51 502, CLP 220 | DIN                          | : - |
| ISO                         | : -               | ISO                          | : - |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : - |

- 13 **Special condition** Special lubrication products recommended for SEW gear of type R..., K...(HK...), F... - See operating instruction SEW chapter 9 lubrication.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | ARAL                    | Aral Degol BG 220       |                            |
|                        | BP                      | Energol GR-XP 220       |                            |
|                        | Caltex                  | Meropa 220              |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1100/220 |                            |
|                        | Castrol Performance-BP  | Castrol Optigear BM 220 |                            |
|                        | Fuchs Lubritech         | Renolin CLP 220         |                            |
|                        | Klüber Lubrication      | Klüberoil GEM 1-220 N   |                            |
|                        | Mobil                   | Mobilgear 600 XP 220    |                            |
|                        | Shell                   | Shell Omala 220         |                            |
|                        | Statoil                 | LoadWay EP 220          |                            |
|                        | Total                   | CARTER EP 220           |                            |

**7146 ISO VG 680**

Enclosed Gear Unit oil (SEW)

|                             |                   |                              |     |
|-----------------------------|-------------------|------------------------------|-----|
| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |     |
| DIN                         | : 51 502, CLP 680 | DIN                          | : - |
| ISO                         | : -               | ISO                          | : - |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : - |

- 16 **Special condition** Special lubrication products recommended for SEW gear of type S...(HS...). - See operating instruction SEW chapter 9 lubrication.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | ARAL                    | Aral Degol BG 680       |                            |
|                        | BP                      | Energol GR-XP 680       |                            |
|                        | Caltex                  | Meropa 680              |                            |
|                        | Castrol Performance-BP  | Castrol Optigear BM 680 |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1100/680 |                            |
|                        | Fuchs Lubritech         | Renolin CLP 680         |                            |
|                        | Klüber Lubrication      | Klüberoil GEM 1-680 N   |                            |
|                        | Mobil                   | Mobilgear 600 XP 680    |                            |
|                        | Shell                   | Shell Omala 680         |                            |
|                        | Statoil                 | LoadWay EP 680          |                            |
|                        | Total                   | CARTER EP 680           |                            |

**Enclosed Gear Unit. Mineral oil (Rossi)**

- 8 **General application** Lubrication of low and high-load gear units and bearings of FLS design. For gear units from other suppliers: See special recommendations from the supplier in question. Suitable for use at operating T < 90 °C approx.
- 14 **Property** This mineral oil consists of highly refined paraffinic base stocks with additives to prevent rust, wear and foam. The oil yields extreme pressure properties.
- 1 **General requirement** -

**7148 ISO VG 150**

Enclosed Gear Unit. Mineral oil (Rossi)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

21 **Special condition** Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>  | <u>Comments on product</u> |
|------------------------|-------------------------|----------------------|----------------------------|
|                        | ARAL                    | Aral Degol BG 150    |                            |
|                        | Caltex                  | Meropa 150           |                            |
|                        | ESSO-EXXON              | Spartan EP 150       |                            |
|                        | Mobil                   | Mobilgear 600 XP 150 |                            |
|                        | Shell                   | Shell Omala 150      |                            |
|                        | Total                   | CARTER EP 150        |                            |

**7149 ISO VG 220**

Enclosed Gear Unit. Mineral oil (Rossi)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

21 **Special condition** Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>  | <u>Comments on product</u> |
|------------------------|-------------------------|----------------------|----------------------------|
|                        | ARAL                    | Aral Degol BG 220    |                            |
|                        | Caltex                  | Meropa 220           |                            |
|                        | ESSO-EXXON              | Spartan EP 220       |                            |
|                        | Mobil                   | Mobilgear 600 XP 220 |                            |
|                        | Shell                   | Shell Omala 220      |                            |
|                        | Total                   | CARTER EP 220        |                            |

**7150 ISO VG 320**

Enclosed Gear Unit. Mineral oil (Rossi)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

21 **Special condition** Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>  | <u>Comments on product</u> |
|------------------------|-------------------------|----------------------|----------------------------|
|                        | ARAL                    | Aral Degol BG 320    |                            |
|                        | Caltex                  | Meropa 320           |                            |
|                        | ESSO-EXXON              | Spartan EP 320       |                            |
|                        | Mobil                   | Mobilgear 600 XP 320 |                            |
|                        | Shell                   | Shell Omala 320      |                            |
|                        | Total                   | CARTER EP 320        |                            |

**7151 ISO VG 460**

Enclosed Gear Unit. Mineral oil (Rossi)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

21 **Special condition** Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>  | <u>Comments on product</u> |
|------------------------|-------------------------|----------------------|----------------------------|
|                        | ARAL                    | Aral Degol BG 460    |                            |
|                        | Caltex                  | Meropa 460           |                            |
|                        | ESSO-EXXON              | Spartan EP 460       |                            |
|                        | Mobil                   | Mobilgear 600 XP 460 |                            |
|                        | Shell                   | Shell Omala 460      |                            |
|                        | Total                   | CARTER EP 460        |                            |

**Enclosed Gear Unit oil**

- 8 **General application** Lubrication of low and high-load gear units and bearings of FLS design. For gear units from other suppliers: See special recommendations from the supplier in question. Suitable for use at operating T < 90 °C approx.
- 14 **Property** This mineral oil consists of highly refined paraffinic base stocks with additives to prevent rust, wear and foam. The oil yields extreme pressure properties.

- 10 **General requirement** The oil must be able to run with a filter reduction rate of beta 10 > 75 (10my absolute filtration) defined in ISO 4572 (multipass test), without loss of additives.

**7152 ISO VG 100**

Enclosed Gear Unit oil

Designation acc. to:

DIN : 51 502, CLP 100  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 517 part 3 CLP 100  
ISO : -  
ANSI\_AGMA : 9005-D94

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-------------------------|----------------------------|
|   |                         | Brugarolas              | Extra Gear 100          |                            |
|   |                         | Caltex                  | Meropa 100              |                            |
|   |                         | Carl Bechem, GmbH       | Bechem Staroil G 100    |                            |
|   |                         | Carl Bechem, GmbH       | Berugear GS 100 BM      |                            |
|   |                         | Castrol Classic         | Alpha SP 100            |                            |
|   |                         | Castrol Performance-BP  | Castrol Optigear BM 100 |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 1100/100 |                            |
|   |                         | Engen Petroleum         | Gengear 100             |                            |
|   |                         | ESSO-EXXON              | Spartan EP 100          |                            |
|   |                         | Fuchs Lubritech         | Gearmaster CLP 100      |                            |
|   |                         | India Oil Corporation   | Servomesh Plus 100      |                            |
|   |                         | Klüber Lubrication      | Klüberoil GEM 1-100 N   |                            |
|   |                         | Krafft S. L.            | Kroil Basela 100        |                            |
|   |                         | Kuwait Petroleum        | Q8 Goya 100             |                            |
|   |                         | Mobil                   | Mobilgear 600 XP 100    |                            |
|   |                         | Rocol                   | Sapphire Hi-Torque 100  |                            |
|   |                         | Shell                   | Shell Omala 100         |                            |
|   |                         | Statoil                 | LoadWay EP 100          |                            |
|   |                         | Total                   | CARTER EP 100           |                            |

**7153 ISO VG 150**

Enclosed Gear Unit oil

Designation acc. to:

DIN : 51 502, CLP 150  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 517 part 3 CLP 150  
ISO : -  
ANSI\_AGMA : 9005-D94

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-------------------------|----------------------------|
|   |                         | Brugarolas              | Extra Gear 150          |                            |
|   |                         | Caltex                  | Meropa 150              |                            |
|   |                         | Carl Bechem, GmbH       | Bechem Staroil G 150    |                            |
|   |                         | Carl Bechem, GmbH       | Berugear GS 150 BM      |                            |
|   |                         | Castrol Classic         | Alpha SP 150            |                            |
|   |                         | Castrol Performance-BP  | Castrol Optigear BM 150 |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 1100/150 |                            |
|   |                         | Engen Petroleum         | Gengear 150             |                            |
|   |                         | ESSO-EXXON              | Spartan EP 150          |                            |
|   |                         | Fuchs Lubritech         | Gearmaster CLP 150      |                            |
|   |                         | India Oil Corporation   | Servomesh Plus 150      |                            |
|   |                         | Klüber Lubrication      | Klüberoil GEM 1-150 N   |                            |
|   |                         | Krafft S. L.            | Kroil Basela 150        |                            |
|   |                         | Kuwait Petroleum        | Q8 Goya 150             |                            |
|   |                         | Mobil                   | Mobilgear 600 XP 150    |                            |
|   |                         | Shell                   | Shell Omala 150         |                            |
|   |                         | Statoil                 | LoadWay EP 150          |                            |
|   |                         | Total                   | CARTER EP 150           |                            |

**7154 ISO VG 220**

Enclosed Gear Unit oil

Designation acc. to:

DIN : 51 502, CLP 220  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 517 part 3 CLP 220  
ISO : -  
ANSI\_AGMA : 9005-D94

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-------------------------|----------------------------|
|   |                         | Brugarolas              | Extra Gear 220          |                            |
|   |                         | Caltex                  | Meropa 220              |                            |
|   |                         | Carl Bechem, GmbH       | Berugear GS 220 BM      |                            |
|   |                         | Carl Bechem, GmbH       | Bechem Staroil G 220    |                            |
|   |                         | Castrol Classic         | Alpha SP 220            |                            |
|   |                         | Castrol Performance-BP  | Castrol Optigear BM 220 |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 1100/220 |                            |
|   |                         | Engen Petroleum         | Gengear 220             |                            |
|   |                         | ESSO-EXXON              | Spartan EP 220          |                            |
|   |                         | Fuchs Lubritech         | Gearmaster CLP 220      |                            |
|   |                         | India Oil Corporation   | Servomesh Plus 220      |                            |
|   |                         | Klüber Lubrication      | Klüberoil GEM 1-220 N   |                            |
|   |                         | Krafft S. L.            | Kroil Basela 220        |                            |
|   |                         | Kuwait Petroleum        | Q8 Goya 220             |                            |
|   |                         | Mobil                   | Mobilgear 600 XP 220    |                            |
|   |                         | Rocol                   | Sapphire Hi-Torque 220  |                            |
|   |                         | Shell                   | Shell Omala 220         |                            |
|   |                         | Statoil                 | LoadWay EP 220          |                            |
|   |                         | Total                   | CARTER EP 220           |                            |

**7155 ISO VG 320**

Enclosed Gear Unit oil

Designation acc. to:

DIN : 51 502, CLP 320  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 517 part 3 CLP 320  
ISO : -  
ANSI\_AGMA : 9005-D94

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-------------------------|----------------------------|
|   |                         | Brugarolas              | Extra Gear 320          |                            |
|   |                         | Caltex                  | Meropa 320              |                            |
|   |                         | Carl Bechem, GmbH       | Berugear GS 320 BM      |                            |
|   |                         | Carl Bechem, GmbH       | Bechem Staroil G 320    |                            |
|   |                         | Castrol Classic         | Alpha SP 320            |                            |
|   |                         | Castrol Performance-BP  | Castrol Optigear BM 320 |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 1100/320 |                            |
|   |                         | Engen Petroleum         | Gengear 320             |                            |
|   |                         | ESSO-EXXON              | Spartan EP 320          |                            |
|   |                         | Fuchs Lubritech         | Gearmaster CLP 320      |                            |
|   |                         | India Oil Corporation   | Servomesh Plus 320      |                            |
|   |                         | Klüber Lubrication      | Klüberoil GEM 1-320 N   |                            |
|   |                         | Krafft S. L.            | Kroil Basela 320        |                            |
|   |                         | Kuwait Petroleum        | Q8 Goya 320             |                            |
|   |                         | Mobil                   | Mobilgear 600 XP 320    |                            |
|   |                         | Rocol                   | Sapphire Hi-Torque 320  |                            |
|   |                         | Shell                   | Shell Omala 320         |                            |
|   |                         | Statoil                 | LoadWay EP 320          |                            |
|   |                         | Total                   | CARTER EP 320           |                            |

**7156 ISO VG 460**

Enclosed Gear Unit oil

Designation acc. to:

DIN : 51 502, CLP 460  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 517 part 3 CLP 460  
ISO : -  
ANSI\_AGMA : 9005-D94

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-------------------------|----------------------------|
|   |                         | Brugarolas              | Extra Gear 460          |                            |
|   |                         | Caltex                  | Meropa 460              |                            |
|   |                         | Carl Bechem, GmbH       | Berugear GS 460 BM      |                            |
|   |                         | Carl Bechem, GmbH       | Bechem Staroil G 460    |                            |
|   |                         | Castrol Classic         | Alpha SP 460            |                            |
|   |                         | Castrol Performance-BP  | Castrol Optigear BM 460 |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 1100/460 |                            |
|   |                         | Engen Petroleum         | Gengear 460             |                            |
|   |                         | ESSO-EXXON              | Spartan EP 460          |                            |
|   |                         | Fuchs Lubritech         | Gearmaster CLP 460      |                            |
|   |                         | India Oil Corporation   | Servomesh Plus 460      |                            |
|   |                         | Klüber Lubrication      | Klüberoil GEM 1-460 N   |                            |
|   |                         | Krafft S. L.            | Kroil Basela 460        |                            |
|   |                         | Kuwait Petroleum        | Q8 Goya 460             |                            |
|   |                         | Mobil                   | Mobilgear 600 XP 460    |                            |
|   |                         | Rocol                   | Sapphire Hi-Torque 460  |                            |
|   |                         | Shell                   | Shell Omala 460         |                            |
|   |                         | Statoil                 | LoadWay EP 460          |                            |
|   |                         | Total                   | CARTER EP 460           |                            |

**7157 ISO VG 680**

Enclosed Gear Unit oil

Designation acc. to:

DIN : 51 502, CLP 680  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 517 part 3 CLP 680  
ISO : -  
ANSI\_AGMA : 9005-D94

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-------------------------|----------------------------|
|   |                         | Brugarolas              | Extra Gear 680          |                            |
|   |                         | Caltex                  | Meropa 680              |                            |
|   |                         | Carl Bechem, GmbH       | Bechem Staroil G 680    |                            |
|   |                         | Carl Bechem, GmbH       | Berugear GS 680 BM      |                            |
|   |                         | Castrol Classic         | Alpha SP 680            |                            |
|   |                         | Castrol Performance-BP  | Castrol Optigear BM 680 |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 1100/680 |                            |
|   |                         | Engen Petroleum         | Gengear 680             |                            |
|   |                         | ESSO-EXXON              | Spartan EP 680          |                            |
|   |                         | Fuchs Lubritech         | Gearmaster CLP 680      |                            |
|   |                         | India Oil Corporation   | Servomesh Plus 680      |                            |
|   |                         | Klüber Lubrication      | Klüberoil GEM 1-680 N   |                            |
|   |                         | Krafft S. L.            | Kroil Basela 680        |                            |
|   |                         | Kuwait Petroleum        | Q8 Goya 680             |                            |
|   |                         | Mobil                   | Mobilgear 600 XP 680    |                            |
|   |                         | Rocol                   | Sapphire Hi-Torque 680  |                            |
|   |                         | Shell                   | Shell Omala 680         |                            |
|   |                         | Statoil                 | LoadWay EP 680          |                            |
|   |                         | Total                   | CARTER EP 680           |                            |

**7158 ISO VG 1000**

Enclosed Gear Unit oil

|                             |                    |                              |                     |
|-----------------------------|--------------------|------------------------------|---------------------|
| <u>Designation acc. to:</u> |                    | <u>Requirements acc. to:</u> |                     |
| DIN                         | : 51 502, CLP 1000 | DIN                          | : 51 517 part 3 CLP |
| ISO                         | : 6743-6, CKC      | ISO                          | : -                 |
| ANSI_AGMA                   | : -                | ANSI_AGMA                    | : 9005-D94          |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>      | <u>Comments on product</u> |
|---|-------------------------|-------------------------|--------------------------|----------------------------|
|   |                         | Brugarolas              | Extra Gear 1000          |                            |
|   |                         | Caltex                  | Meropa 1000              |                            |
|   |                         | Carl Bechem, GmbH       | Berugear GS 1000 BM      |                            |
|   |                         | Carl Bechem, GmbH       | Bechem Staroil G 1000    |                            |
|   |                         | Castrol Classic         | Alpha SP 1000            | Not available in Denmark.  |
|   |                         | Castrol Performance-BP  | Castrol Tribol 1100/1000 |                            |
|   |                         | Castrol Performance-BP  | Castrol Optigear BM 1000 |                            |
|   |                         | Fuchs Lubritech         | Gearmaster CLP 1000      |                            |
|   |                         | India Oil Corporation   | Servomesh Plus 1000      |                            |
|   |                         | Kuwait Petroleum        | Q8 Goya 1000             |                            |
|   |                         | Shell                   | Shell Omala 1000         |                            |
|   |                         | Statoil                 | LoadWay EP 1000          |                            |
|   |                         | Total                   | CARTER EP 1000           |                            |

**Enclosed Gear Unit mineral oil (Flender)**

- 8 **General application** Lubrication of low and high-load gear units and bearings of FLS design. For gear units from other suppliers: See special recommendations from the supplier in question. Suitable for use at operating T < 90 °C approx.
- 15 **Property** Polyglycol is synthetic high-performance gear oil. Not miscible with mineral oil and synthetic hydrocarbons.  
CLP mineral oil contains additives for improvement of corrosion protection, resistance to ageing and reduces wear in mixed-friction areas according to DIN 51 517-3.
- 15 **General requirement** See endnote no. 15 in this appendix 1 for more details on general requirements.

**7162 ISO VG 100**

Enclosed Gear Unit mineral oil (Flender)

|                             |                   |                              |                 |
|-----------------------------|-------------------|------------------------------|-----------------|
| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |                 |
| DIN                         | : 51 502, CLP 100 | DIN                          | : 51 517-3, CLP |
| ISO                         | : 6743-6, CKC     | ISO                          | : 6743-6, CKC   |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : -             |

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| 11 | <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|----|------------------------|-------------------------|-------------------------|----------------------------|
|    |                        | Castrol Classic         | Alpha SP 100            |                            |
|    |                        | Castrol Performance-BP  | Castrol Optigear BM 100 |                            |
|    |                        | Castrol Performance-BP  | Castrol Tribol 1100/100 |                            |
|    |                        | Fuchs Lubritech         | Gearmaster CLP 100      |                            |
|    |                        | Klüber Lubrication      | Klüberoil GEM 1-100 N   |                            |
|    |                        | Mobil                   | Mobilgear 600 XP 100    |                            |

**7163 ISO VG 150**

Enclosed Gear Unit mineral oil (Flender)

|                             |                   |                              |                 |
|-----------------------------|-------------------|------------------------------|-----------------|
| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |                 |
| DIN                         | : 51 502, CLP 150 | DIN                          | : 51 517-3, CLP |
| ISO                         | : 6743-6, CKC     | ISO                          | : 6743-6, CKC   |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : -             |

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| 11 | <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|----|------------------------|-------------------------|-------------------------|----------------------------|
|    |                        | BP                      | Energol GR-XF 150       |                            |
|    |                        | Castrol Classic         | Alpha SP 150            |                            |
|    |                        | Castrol Performance-BP  | Castrol Tribol 1100/150 |                            |
|    |                        | Castrol Performance-BP  | Castrol Optigear BM 150 |                            |
|    |                        | Fuchs Lubritech         | Gearmaster CLP 150      |                            |
|    |                        | Klüber Lubrication      | Klüberoil GEM 1-150 N   |                            |
|    |                        | Kuwait Petroleum        | Q8 Goya NT 150          |                            |
|    |                        | Mobil                   | Mobilgear 600 XP 150    |                            |
|    |                        | Statoil                 | LoadWay EP 150          |                            |

**7164 ISO VG 220**

Enclosed Gear Unit mineral oil (Flender)

|                             |                   |                              |                 |
|-----------------------------|-------------------|------------------------------|-----------------|
| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |                 |
| DIN                         | : 51 502, CLP 220 | DIN                          | : 51 517-3, CLP |
| ISO                         | : 6743-6, CKC     | ISO                          | : 6743-6, CKC   |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : -             |

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | BP                      | Energol GR-XF 220       |                            |
|                        | Brugarolas              | Beslux Gear XP 220      |                            |
|                        | Castrol Classic         | Alpha SP 220            |                            |
|                        | Castrol Performance-BP  | Castrol Optigear BM 220 |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1100/220 |                            |
|                        | Fuchs Lubritech         | Gearmaster CLP 220      |                            |
|                        | Klüber Lubrication      | Klüberoil GEM 1-220 N   |                            |
|                        | Kuwait Petroleum        | Q8 Goya NT 220          |                            |
|                        | Mobil                   | Mobilgear 600 XP 220    |                            |
|                        | Shell                   | Shell Omala F 220       |                            |
|                        | Statoil                 | LoadWay EP 220          |                            |
|                        | Total                   | CARTER EP 220           |                            |

**7165 ISO VG 320**

Enclosed Gear Unit mineral oil (Flender)

Designation acc. to:

DIN : 51 502, CLP 320  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 517-3, CLP  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | BP                      | Energol GR-XF 320       |                            |
|                        | Brugarolas              | Beslux Gear XP 320      |                            |
|                        | Castrol Classic         | Alpha SP 320            |                            |
|                        | Castrol Performance-BP  | Castrol Optigear BM 320 |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1100/320 |                            |
|                        | Fuchs Lubritech         | Gearmaster CLP 320      |                            |
|                        | Klüber Lubrication      | Klüberoil GEM 1-320 N   |                            |
|                        | Kuwait Petroleum        | Q8 Goya NT 320          |                            |
|                        | Mobil                   | Mobilgear 600 XP 320    |                            |
|                        | Shell                   | Shell Omala F 320       |                            |
|                        | Statoil                 | LoadWay EP 320          |                            |
|                        | Total                   | CARTER EP 320           |                            |

**7166 ISO VG 460**

Enclosed Gear Unit mineral oil (Flender)

Designation acc. to:

DIN : 51 502, CLP 460  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 517-3, CLP  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | BP                      | Energol GR-XF 460       |                            |
|                        | Brugarolas              | Beslux Gear XP 460      |                            |
|                        | Castrol Classic         | Alpha SP 460            |                            |
|                        | Castrol Performance-BP  | Castrol Optigear BM 460 |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1100/460 |                            |
|                        | Fuchs Lubritech         | Gearmaster CLP 460      |                            |
|                        | Klüber Lubrication      | Klüberoil GEM 1-460 N   |                            |
|                        | Mobil                   | Mobilgear 600 XP 460    |                            |
|                        | Shell                   | Shell Omala F 460       |                            |
|                        | Statoil                 | LoadWay EP 460          |                            |
|                        | Total                   | CARTER EP 460           |                            |

**7167 ISO VG 680**

Enclosed Gear Unit mineral oil (Flender)

Designation acc. to:

DIN : 51 502, CLP 680  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

Requirements acc. to:

DIN : 51 517-3, CLP  
ISO : 6743-6, CKC  
ANSI\_AGMA : -

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | BP                      | Energol GR-XF 680       |                            |
|                        | Brugarolas              | Beslux Gear XP 680      |                            |
|                        | Castrol Classic         | Alpha SP 680            |                            |
|                        | Castrol Performance-BP  | Castrol Optigear BM 680 |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1100/680 |                            |
|                        | Fuchs Lubritech         | Gearmaster CLP 680      |                            |
|                        | Klüber Lubrication      | Klüberoil GEM 1-680 N   |                            |
|                        | Mobil                   | Mobilgear 600 XP 680    |                            |
|                        | Statoil                 | LoadWay EP 680          |                            |
|                        | Total                   | CARTER EP 680           |                            |



### 7168 ISO VG 1000

Enclosed Gear Unit mineral oil (Flender)

|                             |                    |                              |                 |
|-----------------------------|--------------------|------------------------------|-----------------|
| <u>Designation acc. to:</u> |                    | <u>Requirements acc. to:</u> |                 |
| DIN                         | : 51 502, CLP 1000 | DIN                          | : 51 517-3, CLP |
| ISO                         | : 6743-6, CKC      | ISO                          | : 6743-6, CKC   |
| ANSI_AGMA                   | : -                | ANSI_AGMA                    | : -             |

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>      | <u>Comments on product</u> |
|------------------------|-------------------------|--------------------------|----------------------------|
|                        | BP                      | Energol GR-XP 1000       |                            |
|                        | Brugarolas              | Beslux Gear XP 1000      |                            |
|                        | Castrol Classic         | Alpha SP 1000            | Not available in Denmark.  |
|                        | Castrol Performance-BP  | Castrol Optigear BM 1000 |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1100/1000 |                            |
|                        | Total                   | CARTER EP 1000           |                            |

### Heat transfer oil

- 10 **General application** Heat Transfer Oil for boiler or electric heater.
- 16 **Property** Heat transfer oil consists of highly refined paraffinic base stocks with good anti oxidation properties.
- 6 **General requirement** The heat transfer oil must be able to work at temperatures up to 300 °C.

### 7175 ISO VG 32

Heat transfer oil

|                             |               |                              |               |
|-----------------------------|---------------|------------------------------|---------------|
| <u>Designation acc. to:</u> |               | <u>Requirements acc. to:</u> |               |
| DIN                         | : 51 502, Q   | DIN                          | : 51 522, Q   |
| ISO                         | : 6743-12, QC | ISO                          | : 6743-12, QC |
| ANSI_AGMA                   | : -           | ANSI_AGMA                    | : -           |

0 **Standard product**

| <u>Oil company name</u> | <u>Product name</u>      | <u>Comments on product</u> |
|-------------------------|--------------------------|----------------------------|
| Brugarolas              | Beslux Term              |                            |
| Caltex                  | Texatherm 32             |                            |
| Caltex                  | Texatherm HT 22          |                            |
| Carl Bechem, GmbH       | Bechem Therm B ISO VG 32 |                            |
| Castrol Classic         | Perfecto HT 5            |                            |
| Engen Petroleum         | Genheat 32               |                            |
| ESSO-EXXON              | Essotherm 500            |                            |
| Fuchs Lubritech         | Renolin Therm 350 S      |                            |
| India Oil Corporation   | Servotherm special       |                            |
| Kuwait Petroleum        | Q8 Gluck M               |                            |
| Mobil                   | Mobiltherm 605           |                            |
| Shell                   | Shell Thermia B          |                            |
| Statoil                 | ThermWay 32              |                            |
| Total                   | SERIOLA ETA 32           |                            |

### Transformer oil

- 11 **General application** Insulating and cooling oil in transformer, switch, circuit-breaker and switches.
- 17 **Property** Transformer oil consists of highly refined naphthenic or paraffinic base stocks with additives to reduce the pour point and prevent oxidation.
- 14 **General requirement** British Standard 148, I or IA or IEC 296, class I or IA.

### 7195 ISO VG 7 / 10

Transformer oil

|                             |             |                              |                         |
|-----------------------------|-------------|------------------------------|-------------------------|
| <u>Designation acc. to:</u> |             | <u>Requirements acc. to:</u> |                         |
| DIN                         | : 51 502, J | DIN                          | : 57 370 part 1 class A |
| ISO                         | : -         | ISO                          | : -                     |
| ANSI_AGMA                   | : -         | ANSI_AGMA                    | : -                     |

0 **Standard product**

| <u>Oil company name</u> | <u>Product name</u>           | <u>Comments on product</u> |
|-------------------------|-------------------------------|----------------------------|
| Brugarolas              | Lectroil                      |                            |
| Caltex                  | Transformer Oil BSI Inhibited |                            |
| Caltex                  | Transformer Oil BSI           |                            |
| Carl Bechem, GmbH       | Bechem Transformatorenöl T10  |                            |
| Castrol Classic         | Insulating Oil BS 148         |                            |
| Engen Petroleum         | POWEROIL TO 1020 (60U)        |                            |
| ESSO-EXXON              | Univolt N 53                  |                            |
| Fuchs Lubritech         | Renolin E 7                   |                            |
| Kuwait Petroleum        | Q8 Michelangelo S             |                            |
| Mobil                   | Mobillect 44                  |                            |
| Shell                   | Shell Diala D                 |                            |
| Statoil                 | VoltWay N7 X                  |                            |
| Total                   | ISOVOLTINE II                 |                            |

### 7196 ISO VG 15

Transformer oil

|                             |             |                              |                         |
|-----------------------------|-------------|------------------------------|-------------------------|
| <u>Designation acc. to:</u> |             | <u>Requirements acc. to:</u> |                         |
| DIN                         | : 51 502, J | DIN                          | : 57 370 part 1 class A |
| ISO                         | : -         | ISO                          | : -                     |
| ANSI_AGMA                   | : -         | ANSI_AGMA                    | : -                     |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u> | <u>Comments on product</u> |
|---|-------------------------|-------------------------|---------------------|----------------------------|
|   |                         | Shell                   | Shell Diala B       |                            |

## Flushing oil

|    |                            |   |  |  |
|----|----------------------------|---|--|--|
| 12 | <u>General application</u> | Flushing of machinery components.   |  |  |
| 18 | <u>Property</u>            | Flushing oil consists of highly refined naphthenic or paraffinic base stocks. |  |  |
| 3  | <u>General requirement</u> | 51 501, AN 22 or DIN 51 517 part 1 C 22 are alternative to DIN 51524          |  |  |

### 7215 ISO VG 22

Flushing oil

#### Designation acc. to:

|           |   |                          |
|-----------|---|--------------------------|
| DIN       | : | 51 502, AN               |
| ISO       | : | 6743-1, AN or 6743-4, HH |
| ANSI_AGMA | : | -                        |

#### Requirements acc. to:

|           |   |                         |
|-----------|---|-------------------------|
| DIN       | : | DIN 51 524 part 1 HL 22 |
| ISO       | : | -                       |
| ANSI_AGMA | : | -                       |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>   | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-----------------------|----------------------------|
|   |                         | Brugarolas              | Hidraulic B-22        |                            |
|   |                         | Caltex                  | Rando HD 22           |                            |
|   |                         | Caltex                  | Rando 22              |                            |
|   |                         | Carl Bechem, GmbH       | Bechem staroil Nr. 22 |                            |
|   |                         | Castrol Classic         | Hyspin AWS 22         |                            |
|   |                         | Castrol Performance-BP  | Castrol Ultra 22      |                            |
|   |                         | Engen Petroleum         | Genheat 22            |                            |
|   |                         | ESSO-EXXON              | Esso Nuto H 22        |                            |
|   |                         | Fuchs Lubritech         | Renolin MR 5          |                            |
|   |                         | Krafft S. L.            | FH-22 EP              |                            |
|   |                         | Kuwait Petroleum        | Q8 Haydn 22           |                            |
|   |                         | Kuwait Petroleum        | Q8 Heller 22          |                            |
|   |                         | Mobil                   | Mobil DTE 22          |                            |
|   |                         | Shell                   | Shell Tellus 22       |                            |
|   |                         | Statoil                 | HydraWay HMA 22       |                            |
|   |                         | Statoil                 | HydraWay HV 22        | Denmark only               |
|   |                         | Total                   | TORILIS 2500          |                            |

## Engine oil

|    |                            |  |  |  |
|----|----------------------------|--|--|--|
| 13 | <u>General application</u> | Mobile and stationary diesel and 4-stroke petrol engines.  |  |  |
| 26 | <u>Property</u>            | Engine oil consists of highly refined paraffinic base stocks with detergent-dispersant additives and additives to prevent rust, foaming, oxidation and wear. |  |  |
| 16 | <u>General requirement</u> | API CH-4, SAE 0W-40 / 5W-40 / 15W-40 or ACEA E4, SAE 0W-40 / 5W-40 / 15W-40  |  |  |

### 7234 SAE 0W-40/5W-40

Engine oil

#### Designation acc. to:

|           |   |   |
|-----------|---|---|
| DIN       | : | - |
| ISO       | : | - |
| ANSI_AGMA | : | - |

#### Requirements acc. to:

|           |   |   |
|-----------|---|---|
| DIN       | : | - |
| ISO       | : | - |
| ANSI_AGMA | : | - |

|    |                          |  |  |  |
|----|--------------------------|--|--|--|
| 24 | <u>Special condition</u> | Full synthetic oil is required - No further remarks. |  |  |
|----|--------------------------|--|--|--|

#### Special product

| <u>Oil company name</u> | <u>Product name</u>                 | <u>Comments on product</u> |
|-------------------------|-------------------------------------|----------------------------|
| Carl Bechem, GmbH       | Bechem Staroil Synergie Alpha 5W-40 |                            |
| Kuwait Petroleum        | Q8 T 670 5W-40                      |                            |
| Mobil                   | Mobil 1 SAE 0W-40                   | Other alternatives exist   |
| Shell                   | Shell Helix Ultra 0W-40             |                            |

### 7235 SAE 15W-40

Engine oil

#### Designation acc. to:

|           |   |            |
|-----------|---|------------|
| DIN       | : | 51 502, HD |
| ISO       | : | -          |
| ANSI_AGMA | : | -          |

#### Requirements acc. to:

|           |   |   |
|-----------|---|---|
| DIN       | : | - |
| ISO       | : | - |
| ANSI_AGMA | : | - |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>                     | <u>Comments on product</u> |
|---|-------------------------|-------------------------|---|----------------------------|
|   |                         | Brugarolas              | Bradol Truck 15W-40                     |                            |
|   |                         | Caltex                  | Delo Multigrade SAE 15W-40              |                            |
|   |                         | Carl Bechem, GmbH       | Bechem Staroil Multigrade S 3 HD 15W/40 |                            |
|   |                         | Castrol Classic         | Tection 15W/40                          |                            |
|   |                         | Engen Petroleum         | Engen Dieselube 600 Super               |                            |
|   |                         | ESSO-EXXON              | Essolube XT 3                           |                            |
|   |                         | Fuchs Lubritech         | Titan Universal HD 1540                 |                            |
|   |                         | Krafft S. L.            | 15W40 SHPD                              |                            |
|   |                         | Kuwait Petroleum        | Q8 T 720 SAE 15W-40                     |                            |
|   |                         | Mobil                   | Mobil Delvac MX (15W-40)                |                            |
|   |                         | Shell                   | Shell Rimula R3 U 15W-40                |                            |
|   |                         | Statoil                 | PowerWay 15W-40                         |                            |
|   |                         | Total                   | RUBIA XT 15W40                          |                            |

## Kiln and mill gear units lubricant

- 14 **General application** Lubrication of open industrial gear units with dip lubrication and for kiln and mill gear rims.
- 19 **Property** The lubricants consist of mineral oil or synthetic oil with extreme pressure additives (EP additives) and may contain MoS2 and graphite as well as other types of solid lubricant. The lubricant can be liquid or fatty.

1 **General requirement** -

### 7253 ISO VG

Kiln and mill gear units lubricant

|                             |                    |                              |     |
|-----------------------------|--------------------|------------------------------|-----|
| <u>Designation acc. to:</u> |                    | <u>Requirements acc. to:</u> |     |
| DIN                         | : 51 502, BC or OG | DIN                          | : - |
| ISO                         | : 6743-6, CKL      | ISO                          | : - |
| ANSI_AGMA                   | : -                | ANSI_AGMA                    | : - |

- 1 **Special condition** Special products recommended for open gears with dip lubrication. Kiln and mill gear rims. -  
Operational lubricant for temperate areas, the final choice depends on the operating conditions.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>              | <u>Comments on product</u> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | Castrol Performance-BP  | Castrol Molub-Alloy 8031/3000-00 |                            |
|                        | Fuchs Lubritech         | Ceplattyn 100 HV                 |                            |
|                        | Klüber Lubrication      | Klüberfluid C-F 1 Ultra          | Contains graphite only.    |
|                        | Shell                   | Shell Malleus GL 205             |                            |

### 7256 ISO VG

Kiln and mill gear units lubricant

|                             |                    |                              |     |
|-----------------------------|--------------------|------------------------------|-----|
| <u>Designation acc. to:</u> |                    | <u>Requirements acc. to:</u> |     |
| DIN                         | : 51 502, BC or OG | DIN                          | : - |
| ISO                         | : 6743-6, CKL      | ISO                          | : - |
| ANSI_AGMA                   | : -                | ANSI_AGMA                    | : - |

- 2 **Special condition** Special products recommended for open gears with dip lubrication. Kiln and mill gear rims. -  
Running-in lubricant only.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | Carl Bechem, GmbH       | Berulit EL 420 Fluid    |                            |
|                        | Fuchs Lubritech         | Ceplattyn RN            |                            |
|                        | Klüber Lubrication      | Klüberfluid B-F 1 Ultra | Contains graphite only     |
|                        | Shell                   | Shell Malleus RN        |                            |

### 7257 ISO VG

Kiln and mill gear units lubricant

|                             |               |                              |     |
|-----------------------------|---------------|------------------------------|-----|
| <u>Designation acc. to:</u> |               | <u>Requirements acc. to:</u> |     |
| DIN                         | : 51 502, OG  | DIN                          | : - |
| ISO                         | : 6743-6, CKL | ISO                          | : - |
| ANSI_AGMA                   | : -           | ANSI_AGMA                    | : - |

- 3 **Special condition** Special products recommended for open gears with dip lubrication. Kiln and mill gear rims. -  
Operational lubricant for tropical and sub-tropical areas, the final choice depends on the operating conditions.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>              | <u>Comments on product</u>    |
|------------------------|-------------------------|----------------------------------|-------------------------------|
|                        | Carl Bechem, GmbH       | Berulit GA 2500 Fluid            |                               |
|                        | Castrol Performance-BP  | Castrol Molub-Alloy 8031/3000-00 |                               |
|                        | Fuchs Lubritech         | Ceplattyn 100 HV                 |                               |
|                        | Klüber Lubrication      | Klüberfluid C-F 4 Ultra          | For dip and spray lubrication |
|                        | Shell                   | Shell Malleus GL 400             |                               |

## Hand lubricant, open gear unit

- 16 **General application** Hand lubrication of open gears and gears for kiln and mill. Hand lubrication for chain. A solvent may be added to facilitate application.
- 21 **Property** The lubricant consists of mineral oil with a high viscosity and with bitumen or graphite added and is characterised in that it can resist high loads at low speeds without seizures occurring. The lubricant can be a fluid or grease and a solvent may be added to facilitate application.

1 **General requirement** -

### 7265 ISO VG

Hand lubricant, open gear unit

|                             |                    |                              |                               |
|-----------------------------|--------------------|------------------------------|-------------------------------|
| <u>Designation acc. to:</u> |                    | <u>Requirements acc. to:</u> |                               |
| DIN                         | : 51 502, BC or OG | DIN                          | : 51 513, BC or DIN 51 826, G |
| ISO                         | : 6743-6, CKM      | ISO                          | : 6743 part 6 CKM             |
| ANSI_AGMA                   | : -                | ANSI_AGMA                    | : -                           |

| <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>             | <u>Comments on product</u> |
|-------------------------|-------------------------|---------------------------------|----------------------------|
|                         | Brugarolas              | G. Beslux Crown H-1/R           |                            |
|                         | Caltex                  | Way Lubricant 220               |                            |
|                         | Carl Bechem, GmbH       | Berulit GA 2500                 |                            |
|                         | Carl Bechem, GmbH       | Berulit GA 443                  |                            |
|                         | Castrol Performance-BP  | Castrol Viscogen 4              |                            |
|                         | Castrol Performance-BP  | Castrol Molub-Alloy 9790/2500-1 |                            |

|                    |                               |                             |
|--------------------|-------------------------------|-----------------------------|
| Fuchs Lubritech    | Ceplattyn KG 10 HMF           |                             |
| Fuchs Lubritech    | Ceplattyn 300                 |                             |
| Klüber Lubrication | Grafloscon CA 901 Ultra Spray |                             |
| Krafft S. L.       | KGP-2/M                       | Solvent free. Graphite      |
| Krafft S. L.       | K-165-X                       | With solvent and Mo2S       |
| Krafft S. L.       | KL Complex 2000               | Solvent free. Graphite+Mo2S |
| Kuwait Petroleum   | Q8 Giotto                     |                             |
| Mobil              | Mobilgear OGL 461             |                             |
| Rocol              | Tufgear Universal             |                             |
| Shell              | Shell Malleus OGH             |                             |
| Total              | CARTER MS 100                 |                             |

## Wire lubricant

- 17 **General application** Temporary protection against corrosion. Severe duty conditions of lubrication and rust proofing of wire and chain.
- 22 **Property** Wire lubricant consists of mineral, synthetic or semisynthetic oil with rust-proofing additives and water-displacing properties. Wire lubricant contains a solvent to facilitate penetration between the strands of the wire.
- 7 **General requirement** The product must have adhesive properties.

### 7285 ISO VG

Wire lubricant

Designation acc. to:

DIN : 51 502, R or R-V  
ISO : 6743-8, RD or RE  
ANSI\_AGMA : -

Requirements acc. to:

DIN : -  
ISO : 6743 Part 8 RD or RE  
ANSI\_AGMA : -

| 0 | <b>Standard product</b> | <b>Oil company name</b> | <b>Product name</b>        | <b>Comments on product</b> |
|---|-------------------------|-------------------------|----------------------------|----------------------------|
|   | Brugarolas              |                         | G. Beslux KBL              |                            |
|   | Caltex                  |                         | Crater Fluid M             |                            |
|   | Carl Bechem, GmbH       |                         | Berulit WR 400             |                            |
|   | Carl Bechem, GmbH       |                         | Bechem Seilstar            |                            |
|   | Fuchs Lubritech         |                         | Ceplattyn BL               |                            |
|   | Fuchs Lubritech         |                         | Ceplattyn 300              |                            |
|   | Klüber Lubrication      |                         | Grafloscon C-SG 2000 Ultra | Contains graphite only.    |
|   | Kuwait Petroleum        |                         | Q8 Giotto                  |                            |
|   | Mobil                   |                         | Mobilgrease XHP 461        |                            |
|   | Rocol                   |                         | Wire Rope Dressing         |                            |
|   | Shell                   |                         | Ensis Fluid DW 2462        |                            |
|   | Statoil                 |                         | GreaseWay CaH 92 (spray)   |                            |
|   | Total                   |                         | OSYRIS DWX 3000            |                            |

## Chain lubricant

- 17 **General application** Temporary protection against corrosion. Severe duty conditions of lubrication and rust proofing of wire and chain.
- 22 **Property** Wire lubricant consists of mineral, synthetic or semisynthetic oil with rust-proofing additives and water-displacing properties. Wire lubricant contains a solvent to facilitate penetration between the strands of the wire.
- 26 **General requirement** Dry or semi-dry lubricant with low adherence of dust. Large ability to penetrate into chain rollers is required.

### 7286 ISO VG 22

Chain lubricant

Designation acc. to:

DIN : -  
ISO : -  
ANSI\_AGMA : -

Requirements acc. to:

DIN : -  
ISO : -  
ANSI\_AGMA : -

- 15 **Special condition** Special products recommended for side scraper chain of breaking strength 35-128 ton. Roller size ø100 to ø150 mm. Link plates of 10-20 mm thickness. Low chain speed and temperatures between minus 20 to 50 degrees C. - No further remarks.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b>                 |
|------------------------|-------------------------|----------------------------------|--|
|                        | Castrol Performance-BP  | Castrol Molub-Alloy Chain oil 22 | Do not use where ceramic fibre is present. |

### 7287 ISO VG 100

Chain lubricant

Designation acc. to:

DIN : -  
ISO : -  
ANSI\_AGMA : -

Requirements acc. to:

DIN : -  
ISO : -  
ANSI\_AGMA : -

- 15 **Special condition** Special products recommended for side scraper chain of breaking strength 35-128 ton. Roller size ø100 to ø150 mm. Link plates of 10-20 mm thickness. Low chain speed and temperatures between minus 20 to 50 degrees C. - No further remarks.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>     | <b>Comments on product</b> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | Castrol Performance-BP  | Castrol Viscogen KL 9   | Base viscosity group 100   |
|                        | Castrol Performance-BP  | Castrol Tribol 1730/100 | Viscosity group 100        |

## Synthetic oil, Polyalphaolefin (PAO, Flender)

- 18 **General application** Polyalphaolefin are used for lubrication of e.g. gear units, hydraulic systems, air compressors and for lubrication of bearings. For running at low and high temperatures.
- 23 **Property** See endnote no. 23 in this appendix 1 for more details on the property.
- 15 **General requirement** See endnote no. 15 in this appendix 1 for more details on general requirements.

### 7301 ISO VG 100

Synthetic oil, Polyalphaolefin (PAO, Flender)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | BP                      | Energyn EP-XF 100                |                            |
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 100 | See comments in appendix 4 |

### 7302 ISO VG 150

Synthetic oil, Polyalphaolefin (PAO, Flender)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | BP                      | Energyn EP-XF 150                |                            |
|                        | Brugarolas              | Beslux Gearsint 150              |                            |
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 150 | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster SYN 150               |                            |
|                        | India Oil Corporation   | Servosyngear AMP 150             |                            |
|                        | Klüber Lubrication      | Klübersynth GEM 4-150 N          |                            |
|                        | Kuwait Petroleum        | Q8 El Greco 150                  |                            |
|                        | Mobil                   | Mobil SHC 629                    |                            |
|                        | Shell                   | Shell Omala HD 150               |                            |
|                        | Statoil                 | Mereta 150                       |                            |
|                        | Total                   | CARTER SH 150                    |                            |

### 7303 ISO VG 220

Synthetic oil, Polyalphaolefin (PAO, Flender)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | BP                      | Energyn EP-XF 220                |                            |
|                        | Brugarolas              | Beslux Gearsint 220              |                            |
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 220 | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster SYN 220               |                            |
|                        | India Oil Corporation   | Servosyngear Plus 220            |                            |
|                        | India Oil Corporation   | Servosyngear AMP 220             |                            |
|                        | Klüber Lubrication      | Klübersynth GEM 4-220 N          |                            |
|                        | Kuwait Petroleum        | Q8 El Greco 220                  |                            |
|                        | Mobil                   | Mobil SHC 630                    |                            |
|                        | Shell                   | Shell Omala HD 220               |                            |
|                        | Statoil                 | Mereta 220                       |                            |
|                        | Total                   | CARTER SH 220                    |                            |

### 7304 ISO VG 320

Synthetic oil, Polyalphaolefin (PAO, Flender)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | BP                      | Energyn EP-XF 320                |                            |
|                        | Brugarolas              | Beslux Gearsint 320              |                            |
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 320 | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster SYN 320               |                            |

|                       |                         |
|-----------------------|-------------------------|
| India Oil Corporation | Servosyngear Plus 320   |
| India Oil Corporation | Servosyngear AMP 320    |
| Klüber Lubrication    | Klübersynth GEM 4-320 N |
| Kuwait Petroleum      | Q8 El Greco 320         |
| Mobil                 | Mobil SHC 632           |
| Shell                 | Shell Omala HD 320      |
| Statoil               | Mereta 320              |
| Total                 | CARTER SH 320           |

**7305 ISO VG 460**

Synthetic oil, Polyalphaolefin (PAO, Flender)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>              | <u>Comments on product</u> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | BP                      | Energyn EP-XF 460                |                            |
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 460 | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster SYN 460               |                            |
|                        | India Oil Corporation   | Servosyngear Plus 460            |                            |
|                        | India Oil Corporation   | Servosyngear AMP 460             |                            |
|                        | Klüber Lubrication      | Klübersynth GEM 4-460 N          |                            |
|                        | Kuwait Petroleum        | Q8 El Greco 460                  |                            |
|                        | Mobil                   | Mobil SHC 634                    |                            |
|                        | Shell                   | Shell Omala HD 460               |                            |
|                        | Total                   | CARTER SH 460                    |                            |

**7306 ISO VG 680**

Synthetic oil, Polyalphaolefin (PAO, Flender)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>              | <u>Comments on product</u> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | Brugarolas              | Beslux Gearsint 680              |                            |
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 680 | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster SYN 680               |                            |
|                        | India Oil Corporation   | Servosyngear Plus 680            |                            |
|                        | Klüber Lubrication      | Klübersynth GEM 4-680 N          |                            |
|                        | Shell                   | Shell Omala HD 680               |                            |
|                        | Total                   | CARTER SH 680                    |                            |

**7307 ISO VG 1000**

Synthetic oil, Polyalphaolefin (PAO, Flender)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

- 11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>               | <u>Comments on product</u> |
|------------------------|-------------------------|-----------------------------------|----------------------------|
|                        | Brugarolas              | Beslux Gearsint 1000              |                            |
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 1000 | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster SYN 1000               |                            |
|                        | Mobil                   | Mobil SHC 639                     |                            |
|                        | Total                   | CARTER SH 1000                    |                            |

**Synthetic oil, polyglycol (PG, Flender Worm gear)**

- 15 **General application** Polyglycol oil is a lubricant for all types of industrial gears and anti-friction bearing applications under severe service conditions. Lubrication of filled for life gearboxes and heavy-duty worm gears, other industrial gearing in a wide variety of applications, lubrication of plain and rolling contact bearings, and most types of compressors.
- 31 **Property** See endnote no. 2 in this appendix 1 for more details on the property.
- 15 **General requirement** See endnote no. 15 in this appendix 1 for more details on general requirements.

**7308 ISO VG 100**

Synthetic oil, polyglycol (PG, Flender Worm gear)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

29 **Special condition** Special products recommended for Flender Worm gear units. - See Flender instructions BA 7303.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>      | <b>Comments on product</b> |
|------------------------|-------------------------|--------------------------|----------------------------|
|                        | Carl Bechem, GmbH       | Berusynth EP 100         |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 800/100   | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster PGP 100       |                            |
|                        | Klüber Lubrication      | Klüber Syntheso D 100 EP |                            |

**7309 ISO VG 150** Synthetic oil, polyglycol (PG, Flender Worm gear)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

29 **Special condition** Special products recommended for Flender Worm gear units. - See Flender instructions BA 7303.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>      | <b>Comments on product</b> |
|------------------------|-------------------------|--------------------------|----------------------------|
|                        | Carl Bechem, GmbH       | Berusynth EP 150         |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 800/150   | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster PGP 150       |                            |
|                        | Klüber Lubrication      | Klüber Syntheso D 150 EP |                            |
|                        | Shell                   | Shell Tivela S 150       |                            |

**7310 ISO VG 220** Synthetic oil, polyglycol (PG, Flender Worm gear)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

29 **Special condition** Special products recommended for Flender Worm gear units. - See Flender instructions BA 7303.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>      | <b>Comments on product</b> |
|------------------------|-------------------------|--------------------------|----------------------------|
|                        | Carl Bechem, GmbH       | Berusynth EP 220         |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 800/220   | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster PGP 220       |                            |
|                        | Klüber Lubrication      | Klüber Syntheso D 220 EP |                            |
|                        | Shell                   | Shell Tivela S 220       |                            |

**7311 ISO VG 320** Synthetic oil, polyglycol (PG, Flender Worm gear)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

29 **Special condition** Special products recommended for Flender Worm gear units. - See Flender instructions BA 7303.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>      | <b>Comments on product</b> |
|------------------------|-------------------------|--------------------------|----------------------------|
|                        | Carl Bechem, GmbH       | Berusynth EP 320         |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 800/320   | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster PGP 320       |                            |
|                        | Klüber Lubrication      | Klüber Syntheso D 320 EP |                            |
|                        | Shell                   | Shell Tivela S 320       |                            |

**7312 ISO VG 460** Synthetic oil, polyglycol (PG, Flender Worm gear)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

29 **Special condition** Special products recommended for Flender Worm gear units. - See Flender instructions BA 7303.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>      | <b>Comments on product</b> |
|------------------------|-------------------------|--------------------------|----------------------------|
|                        | Carl Bechem, GmbH       | Berusynth EP 460         |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 800/460   | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster PGP 460       |                            |
|                        | Klüber Lubrication      | Klüber Syntheso D 460 EP |                            |
|                        | Shell                   | Shell Tivela S 460       |                            |

**7313 ISO VG 680** Synthetic oil, polyglycol (PG, Flender Worm gear)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

29 **Special condition** Special products recommended for Flender Worm gear units. - See Flender instructions BA 7303.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>    | <b>Comments on product</b> |
|------------------------|-------------------------|------------------------|----------------------------|
|                        | Carl Bechem, GmbH       | Berusynth EP 680       |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 800/680 | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster PGP 680     |                            |

Klüber Lubrication Shell Klüber Syntheso D 680 EP Shell Tivela S 680

**7314 ISO VG 1000**

Synthetic oil, polyglycol (PG, Flender Worm gear)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

29 **Special condition** Special products recommended for Flender Worm gear units. - See Flender instructions BA 7303.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>       | <b>Comments on product</b> |
|------------------------|-------------------------|---------------------------|----------------------------|
|                        | Castrol Performance-BP  | Castrol Tribol 800/1000   | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Gearmaster PGP 1000       |                            |
|                        | Klüber Lubrication      | Klüber Syntheso D 1000 EP |                            |
|                        | Shell                   | Shell Tivela S 1000       |                            |

**Synthetic oil, Polyalphaolefin (PAO, Rossi)**

18 **General application** Polyalphaolefin are used for lubrication of e.g. gear units, hydraulic systems, air compressors and for lubrication of bearings. For running at low and high temperatures.

23 **Property** See endnote no. 23 in this appendix 1 for more details on the property.

1 **General requirement** -

**7322 ISO VG 150**

Synthetic oil, Polyalphaolefin (PAO, Rossi)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

21 **Special condition** Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 150 | See comments in appendix 4 |
|                        | ESSO-EXXON              | Spartan SEP 150                  |                            |
|                        | Klüber Lubrication      | Klübersynth EG 4 - 150           |                            |
|                        | Mobil                   | Mobilgear SHC XMP 150            |                            |

**7323 ISO VG 220**

Synthetic oil, Polyalphaolefin (PAO, Rossi)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

21 **Special condition** Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 220 | See comments in appendix 4 |
|                        | ESSO-EXXON              | Spartan SEP 220                  |                            |
|                        | Klüber Lubrication      | Klübersynth EG 4 - 220           |                            |
|                        | Mobil                   | Mobilgear SHC XMP 220            |                            |
|                        | Total                   | CARTER SH 220                    |                            |

**7324 ISO VG 320**

Synthetic oil, Polyalphaolefin (PAO, Rossi)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

21 **Special condition** Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 320 | See comments in appendix 4 |
|                        | ESSO-EXXON              | Spartan SEP 320                  |                            |
|                        | Klüber Lubrication      | Klübersynth EG 4 - 320           |                            |
|                        | Mobil                   | Mobilgear SHC XMP 320            |                            |
|                        | Total                   | CARTER SH 320                    |                            |

**7325 ISO VG 460**

Synthetic oil, Polyalphaolefin (PAO, Rossi)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |



21 **Special condition** Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 460 | See comments in appendix 4 |
|                        | ESSO-EXXON              | Spartan SEP 460                  |                            |
|                        | Klüber Lubrication      | Klübersynth EG 4 - 460           |                            |
|                        | Mobil                   | Mobilgear SHC XMP 460            |                            |

### Synthetic oil, Polyalphaolefin (PAO, SEW)

18 **General application** Polyalphaolefin are used for lubrication of e.g. gear units, hydraulic systems, air compressors and for lubrication of bearings. For running at low and high temperatures.

23 **Property** See endnote no. 23 in this appendix 1 for more details on the property.

1 **General requirement** -

#### 7329 ISO VG 32 Synthetic oil, Polyalphaolefin (PAO, SEW)

| Designation acc. to: |     | Requirements acc. to: |     |
|----------------------|-----|-----------------------|-----|
| DIN                  | : - | DIN                   | : - |
| ISO                  | : - | ISO                   | : - |
| ANSI_AGMA            | : - | ANSI_AGMA             | : - |

17 **Special condition** Special lubrication products recommended for SEW gear of type R..., K...(HK...), F... and special lubrication products recommended for S.E.W. Gear of type S...(HS...) - See operating instruction SEW chapter 9 lubrication.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>         | <b>Comments on product</b> |
|------------------------|-------------------------|-----------------------------|----------------------------|
|                        | Klüber Lubrication      | Klüber - Summit HySyn FG-32 |                            |
|                        | Mobil                   | Mobil SHC 624               |                            |
|                        | Statoil                 | Mereta 32                   |                            |
|                        | TEXACO                  | Cetus PAO 46                |                            |
|                        | Total                   | DACNIS SH 32                |                            |

#### 7332 ISO VG 150 Synthetic oil, Polyalphaolefin (PAO, SEW)

| Designation acc. to: |     | Requirements acc. to: |     |
|----------------------|-----|-----------------------|-----|
| DIN                  | : - | DIN                   | : - |
| ISO                  | : - | ISO                   | : - |
| ANSI_AGMA            | : - | ANSI_AGMA             | : - |

17 **Special condition** Special lubrication products recommended for SEW gear of type R..., K...(HK...), F... and special lubrication products recommended for S.E.W. Gear of type S...(HS...) - See operating instruction SEW chapter 9 lubrication.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>    | <b>Comments on product</b> |
|------------------------|-------------------------|------------------------|----------------------------|
|                        | Caltex                  | Pinnacle EP 150        |                            |
|                        | Klüber Lubrication      | klübersynth EG 4 - 150 |                            |
|                        | Mobil                   | Mobil SHC 629          |                            |
|                        | Shell                   | Shell Omala HD 150     |                            |
|                        | Statoil                 | Mereta 150             |                            |
|                        | Total                   | CARTER SH 150          |                            |

#### 7333 ISO VG 220 Synthetic oil, Polyalphaolefin (PAO, SEW)

| Designation acc. to: |     | Requirements acc. to: |     |
|----------------------|-----|-----------------------|-----|
| DIN                  | : - | DIN                   | : - |
| ISO                  | : - | ISO                   | : - |
| ANSI_AGMA            | : - | ANSI_AGMA             | : - |

13 **Special condition** Special lubrication products recommended for SEW gear of type R..., K...(HK...), F... - See operating instruction SEW chapter 9 lubrication.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | ARAL                    | Aral Degol PAS 220               | See comments in appendix 4 |
|                        | Caltex                  | Pinnacle EP 220                  |                            |
|                        | Castrol Performance-BP  | Castrol Optigear Synthetic X 220 |                            |
|                        | Fuchs Lubritech         | Renolin Unisyn CLP 220           |                            |
|                        | Klüber Lubrication      | Klübersynth EG 4 - 220           |                            |
|                        | Mobil                   | Mobil SHC 630                    |                            |
|                        | Shell                   | Shell Omala HD 220               |                            |
|                        | Statoil                 | Mereta 220                       |                            |

#### 7335 ISO VG 460 Synthetic oil, Polyalphaolefin (PAO, SEW)

| Designation acc. to: |     | Requirements acc. to: |     |
|----------------------|-----|-----------------------|-----|
| DIN                  | : - | DIN                   | : - |
| ISO                  | : - | ISO                   | : - |
| ANSI_AGMA            | : - | ANSI_AGMA             | : - |

16 **Special condition** Special lubrication products recommended for SEW gear of type S...(HS...). - See operating instruction SEW chapter 9 lubrication.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u> |
|------------------------|-------------------------|------------------------|----------------------------|
|                        | Caltex                  | Pinnacle EP 460        |                            |
|                        | Klüber Lubrication      | Klübersynth EG 4 - 460 |                            |
|                        | Mobil                   | Mobil SHC 634          |                            |
|                        | Shell                   | Shell Omala HD 460     |                            |
|                        | Statoil                 | Mereta 460             |                            |

## Synthetic oil, Polyalphaolefin (PAO)

|    |                            |  |  |
|----|----------------------------|--|--|
| 18 | <b>General application</b> | Polyalphaolefin are used for lubrication of e.g. gear units, hydraulic systems, air compressors and for lubrication of bearings. For running at low and high temperatures. |  |
| 23 | <b>Property</b>            | See endnote no. 23 in this appendix 1 for more details on the property.  |  |
| 10 | <b>General requirement</b> | The oil must be able to run with a filter reduction rate of beta 10 > 75 (10my absolute filtration) defined in ISO 4572 (multipass test), without loss of additives.       |  |

### 7341 ISO VG 32 Synthetic oil, Polyalphaolefin (PAO)

| <u>Designation acc. to:</u> |                 | <u>Requirements acc. to:</u> |            |
|-----------------------------|-----------------|------------------------------|------------|
| DIN                         | : 51 502, HC 32 | DIN                          | : -        |
| ISO                         | : -             | ISO                          | : -        |
| ANSI_AGMA                   | : -             | ANSI_AGMA                    | : 9005-D94 |

| <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u> |
|-------------------------|-------------------------|------------------------|----------------------------|
|                         | Brugarolas              | Beslux Skydow NH-36    |                            |
|                         | Castrol Performance-BP  | Castrol Tribol 1555/32 |                            |
|                         | India Oil Corporation   | Servosyngear 32        |                            |
|                         | Klüber Lubrication      | Klübersynth GEM 4-32 N |                            |
|                         | Kuwait Petroleum        | Q8 Schumann 32         |                            |
|                         | Statoil                 | Mereta 32              |                            |

### 7342 ISO VG 46 Synthetic oil, Polyalphaolefin (PAO)

| <u>Designation acc. to:</u> |                 | <u>Requirements acc. to:</u> |            |
|-----------------------------|-----------------|------------------------------|------------|
| DIN                         | : 51 502, HC 68 | DIN                          | : -        |
| ISO                         | : -             | ISO                          | : -        |
| ANSI_AGMA                   | : -             | ANSI_AGMA                    | : 9005-D94 |

| <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u> |
|-------------------------|-------------------------|------------------------|----------------------------|
|                         | Brugarolas              | Beslux Ultrasint 46    |                            |
|                         | Carl Bechem, GmbH       | BERUSYNTH FG-H 46      |                            |
|                         | Carl Bechem, GmbH       | Berusrynth 46 H1       |                            |
|                         | Castrol Performance-BP  | Castrol Optileb V 46   |                            |
|                         | Castrol Performance-BP  | Castrol Tribol 1555/46 |                            |
|                         | India Oil Corporation   | Servosyngear 46        |                            |
|                         | Klüber Lubrication      | Klübersynth GEM 4-46 N |                            |
|                         | Kuwait Petroleum        | Q8 Schumann 46         |                            |
|                         | Statoil                 | Mereta 46              |                            |
|                         | Total                   | DACNIS SH 46           |                            |

### 7343 ISO VG 68 Synthetic oil, Polyalphaolefin (PAO)

| <u>Designation acc. to:</u> |                 | <u>Requirements acc. to:</u> |            |
|-----------------------------|-----------------|------------------------------|------------|
| DIN                         | : 51 502, HC 68 | DIN                          | : -        |
| ISO                         | : -             | ISO                          | : -        |
| ANSI_AGMA                   | : -             | ANSI_AGMA                    | : 9005-D94 |

| <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u> | <u>Comments on product</u> |
|-------------------------|-------------------------|---------------------|----------------------------|
|                         | Carl Bechem, GmbH       | Berusrynth GP 68    |                            |

### 7343 ISO VG 68 Synthetic oil, Polyalphaolefin (PAO)

| <u>Designation acc. to:</u> |                 | <u>Requirements acc. to:</u> |            |
|-----------------------------|-----------------|------------------------------|------------|
| DIN                         | : 51 502, HC 68 | DIN                          | : -        |
| ISO                         | : -             | ISO                          | : -        |
| ANSI_AGMA                   | : -             | ANSI_AGMA                    | : 9005-D94 |

26 **Special condition** Lubrication for fan. - No further remarks.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u> | <u>Comments on product</u> |
|------------------------|-------------------------|---------------------|----------------------------|
|                        | Mobil                   | Mobil SHC 626       |                            |

### 7344 ISO VG 100 Synthetic oil, Polyalphaolefin (PAO)

| <u>Designation acc. to:</u> |                  | <u>Requirements acc. to:</u> |            |
|-----------------------------|------------------|------------------------------|------------|
| DIN                         | : 51 502, HC 100 | DIN                          | : -        |
| ISO                         | : -              | ISO                          | : -        |
| ANSI_AGMA                   | : -              | ANSI_AGMA                    | : 9005-D94 |

| <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>              | <u>Comments on product</u> |
|-------------------------|-------------------------|----------------------------------|----------------------------|
|                         | Carl Bechem, GmbH       | Berusrynth GP 100                |                            |
|                         | Castrol Performance-BP  | Castrol Optigear Synthetic X 100 | See comments in appendix 4 |
|                         | Fuchs Lubritech         | Gearmaster SYN 100               |                            |

|                       |                         |
|-----------------------|-------------------------|
| India Oil Corporation | Servosyngear 100        |
| Klüber Lubrication    | Klübersynth GEM 4-100 N |
| Kuwait Petroleum      | Q8 Schumann 100         |
| Mobil                 | Mobil SHC 627           |
| Shell                 | Shell Omala HD 100      |
| Statoil               | Mereta 100              |
| TEXACO                | Pinnacle EP 100         |
| Total                 | DACNIS SH 100           |

**7345 ISO VG 150**

Synthetic oil, Polyalphaolefin (PAO)

Designation acc. to:

|           |                  |
|-----------|------------------|
| DIN       | : 51 502, HC 150 |
| ISO       | : -              |
| ANSI_AGMA | : -              |

Requirements acc. to:

|           |            |
|-----------|------------|
| DIN       | : -        |
| ISO       | : -        |
| ANSI_AGMA | : 9005-D94 |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>              | <u>Comments on product</u> |
|---|-------------------------|-------------------------|----------------------------------|----------------------------|
|   |                         | Brugarolas              | Beslux Gearsint 150              |                            |
|   |                         | Caltex                  | Pinnacle EP 150                  |                            |
|   |                         | Carl Bechem, GmbH       | Berusynth GP 150                 |                            |
|   |                         | Castrol Classic         | Alphasyn T 150                   |                            |
|   |                         | Castrol Performance-BP  | Castrol Optigear Synthetic X 150 | See comments in appendix 4 |
|   |                         | Fuchs Lubritech         | Gearmaster SYN 150               |                            |
|   |                         | India Oil Corporation   | Servosyngear 150                 |                            |
|   |                         | Klüber Lubrication      | Klübersynth GEM 4-150 N          |                            |
|   |                         | Krafft S. L.            | Kroil Sintlube 150               |                            |
|   |                         | Kuwait Petroleum        | Q8 El Greco 150                  |                            |
|   |                         | Kuwait Petroleum        | Q8 Schumann 150                  |                            |
|   |                         | Mobil                   | Mobil SHC 629                    |                            |
|   |                         | Shell                   | Shell Omala HD 150               |                            |
|   |                         | Statoil                 | Mereta 150                       |                            |
|   |                         | Total                   | CARTER SH 150                    |                            |

**7346 ISO VG 220**

Synthetic oil, Polyalphaolefin (PAO)

Designation acc. to:

|           |                  |
|-----------|------------------|
| DIN       | : 51 502, HC 220 |
| ISO       | : -              |
| ANSI_AGMA | : -              |

Requirements acc. to:

|           |            |
|-----------|------------|
| DIN       | : -        |
| ISO       | : -        |
| ANSI_AGMA | : 9005-D94 |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>              | <u>Comments on product</u> |
|---|-------------------------|-------------------------|----------------------------------|----------------------------|
|   |                         | Caltex                  | Pinnacle EP 220                  |                            |
|   |                         | Carl Bechem, GmbH       | Berusynth GP 220                 |                            |
|   |                         | Castrol Performance-BP  | Castrol Optigear Synthetic X 220 | See comments in appendix 4 |
|   |                         | Fuchs Lubritech         | Gearmaster SYN 220               |                            |
|   |                         | India Oil Corporation   | Servosyngear 220                 |                            |
|   |                         | Klüber Lubrication      | Klübersynth EG 4 - 220           |                            |
|   |                         | Krafft S. L.            | Kroil Sintlube 220               |                            |
|   |                         | Kuwait Petroleum        | Q8 El Greco 220                  |                            |
|   |                         | Mobil                   | Mobil SHC 630                    |                            |
|   |                         | Shell                   | Shell Omala HD 220               |                            |
|   |                         | Statoil                 | Mereta 220                       |                            |
|   |                         | Total                   | CARTER SH 220                    |                            |

**7347 ISO VG 320**

Synthetic oil, Polyalphaolefin (PAO)

Designation acc. to:

|           |                  |
|-----------|------------------|
| DIN       | : 51 502, HC 320 |
| ISO       | : -              |
| ANSI_AGMA | : -              |

Requirements acc. to:

|           |            |
|-----------|------------|
| DIN       | : -        |
| ISO       | : -        |
| ANSI_AGMA | : 9005-D94 |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>              | <u>Comments on product</u> |
|---|-------------------------|-------------------------|----------------------------------|----------------------------|
|   |                         | Caltex                  | Pinnacle EP 320                  |                            |
|   |                         | Carl Bechem, GmbH       | Berusynth GP 320                 |                            |
|   |                         | Castrol Performance-BP  | Castrol Optigear Synthetic X 320 | See comments in appendix 4 |
|   |                         | Fuchs Lubritech         | Gearmaster SYN 320               |                            |
|   |                         | India Oil Corporation   | Servosyngear 320                 |                            |
|   |                         | Krafft S. L.            | Kroil Sintlube 320               |                            |
|   |                         | Kuwait Petroleum        | Q8 El Greco 320                  |                            |
|   |                         | Mobil                   | Mobil SHC 632                    |                            |
|   |                         | Shell                   | Shell Omala HD 320               |                            |
|   |                         | Statoil                 | Mereta 320                       |                            |
|   |                         | Total                   | CARTER SH 320                    |                            |

**7348 ISO VG 460**

Synthetic oil, Polyalphaolefin (PAO)

Designation acc. to:

|           |                  |
|-----------|------------------|
| DIN       | : 51 502, HC 460 |
| ISO       | : -              |
| ANSI_AGMA | : -              |

Requirements acc. to:

|           |            |
|-----------|------------|
| DIN       | : -        |
| ISO       | : -        |
| ANSI_AGMA | : 9005-D94 |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u> | <u>Comments on product</u> |
|---|-------------------------|-------------------------|---------------------|----------------------------|
|   |                         | Brugarolas              | Beslux Gearsint 460 |                            |
|   |                         | Caltex                  | Pinnacle EP 460     |                            |

|                        |                                  |                            |
|------------------------|----------------------------------|----------------------------|
| Carl Bechem, GmbH      | Berusynth GP 460                 |                            |
| Castrol Performance-BP | Castrol Optigear Synthetic X 460 | See comments in appendix 4 |
| Fuchs Lubritech        | Gearmaster SYN 460               |                            |
| India Oil Corporation  | Servosyngear 460                 |                            |
| Klüber Lubrication     | Klübersynth GEM 4-460 N          |                            |
| Krafft S. L.           | Kroil Sintlube 460               |                            |
| Kuwait Petroleum       | Q8 El Greco 460                  |                            |
| Mobil                  | Mobil SHC 634                    |                            |
| Shell                  | Shell Omala HD 460               |                            |
| Statoil                | Mereta 460                       |                            |
| Total                  | CARTER SH 460                    |                            |

**7349 ISO VG 680**

Synthetic oil, Polyalphaolefin (PAO)

|                             |                  |                              |            |
|-----------------------------|------------------|------------------------------|------------|
| <u>Designation acc. to:</u> |                  | <u>Requirements acc. to:</u> |            |
| DIN                         | : 51 502, HC 680 | DIN                          | : -        |
| ISO                         | : -              | ISO                          | : -        |
| ANSI_AGMA                   | : -              | ANSI_AGMA                    | : 9005-D94 |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>              | <u>Comments on product</u> |
|---|-------------------------|-------------------------|----------------------------------|----------------------------|
|   |                         | Caltex                  | Pinnacle EP 680                  |                            |
|   |                         | Carl Bechem, GmbH       | Berusynth GP 680                 |                            |
|   |                         | Castrol Performance-BP  | Castrol Optigear Synthetic X 680 | See comments in appendix 4 |
|   |                         | Fuchs Lubritech         | Gearmaster SYN 680               |                            |
|   |                         | India Oil Corporation   | Servosyngear 680                 |                            |
|   |                         | Klüber Lubrication      | Klübersynth GEM 4-680 N          |                            |
|   |                         | Mobil                   | Mobil SHC 636                    |                            |
|   |                         | Shell                   | Shell Omala HD 680               |                            |
|   |                         | Statoil                 | Mereta 680                       |                            |
|   |                         | Total                   | CARTER SH 680                    |                            |

**7350 ISO VG 1000**

Synthetic oil, Polyalphaolefin (PAO)

|                             |                   |                              |            |
|-----------------------------|-------------------|------------------------------|------------|
| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |            |
| DIN                         | : 51 502, HC 1000 | DIN                          | : -        |
| ISO                         | : -               | ISO                          | : -        |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : 9005-D94 |

4 **Special condition** Special products recommended for Atox mill roller bearing and for OK mill roller bearing. - No further remarks.

|  | <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|--|------------------------|-------------------------|-------------------------|----------------------------|
|  |                        | Carl Bechem, GmbH       | Berusynth GP 1000       |                            |
|  |                        | Fuchs Lubritech         | Gearmaster SYN 1000     |                            |
|  |                        | Klüber Lubrication      | Klübersynth EG 4 - 1000 |                            |
|  |                        | Mobil                   | Mobil SHC 639           |                            |
|  |                        | Shell                   | Shell Omala HD 1000     |                            |
|  |                        | Statoil                 | Mereta 1000             |                            |
|  |                        | Total                   | CARTER SH 1000          |                            |

**Synthetic oil, Polyglycol (PG)**

20 **General application** Lubrication of bearings, gear units and hydraulic systems running at very high temperatures. NOT RECOMMENDED for gear units manufactured by Flender.

31 **Property** See endnote no. 2 in this appendix 1 for more details on the property.

1 **General requirement** -

**7353 ISO VG 150**

Synthetic oil, Polyglycol (PG)

|                             |                      |                              |            |
|-----------------------------|----------------------|------------------------------|------------|
| <u>Designation acc. to:</u> |                      | <u>Requirements acc. to:</u> |            |
| DIN                         | : 51 502, PG 150     | DIN                          | : -        |
| ISO                         | : -                  | ISO                          | : -        |
| ANSI_AGMA                   | : 9005-D94 lub no. 4 | ANSI_AGMA                    | : 9005-D94 |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u>        |
|---|-------------------------|-------------------------|------------------------|-----------------------------------|
|   |                         | Brugarolas              | Beslux Sincart 150-W   |                                   |
|   |                         | Caltex                  | Synlube CLP 150        |                                   |
|   |                         | Carl Bechem, GmbH       | Berusynth EP 150       |                                   |
|   |                         | Castrol Classic         | Alphasyn PG 150        |                                   |
|   |                         | Castrol Performance-BP  | Castrol Tribol 800/150 | See comments in appendix 4        |
|   |                         | Fuchs Lubritech         | Gearmaster PGP 150     |                                   |
|   |                         | Klüber Lubrication      | Klübersynth GH 6 - 150 |                                   |
|   |                         | Kuwait Petroleum        | Q8 Gade 150            |                                   |
|   |                         | Mobil                   | Mobil Glygoyle 150     | Do not mix with Mobil Glygoyle 22 |
|   |                         | Shell                   | Shell Tivela S 150     |                                   |
|   |                         | Statoil                 | LoadWay PG 150         |                                   |
|   |                         | Total                   | CARTER SY 150          |                                   |

**7354 ISO VG 220**

Synthetic oil, Polyglycol (PG)

|                             |                      |                              |            |
|-----------------------------|----------------------|------------------------------|------------|
| <u>Designation acc. to:</u> |                      | <u>Requirements acc. to:</u> |            |
| DIN                         | : 51 502, PG 220     | DIN                          | : -        |
| ISO                         | : -                  | ISO                          | : -        |
| ANSI_AGMA                   | : 9005-D94 lub no. 5 | ANSI_AGMA                    | : 9005-D94 |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u>        |
|---|-------------------------|-------------------------|------------------------|-----------------------------------|
|   |                         | Brugarolas              | Beslux Sincart 220-W   |                                   |
|   |                         | Carl Bechem, GmbH       | Berusynth EP 220       |                                   |
|   |                         | Castrol Classic         | Alphasyn PG 220        |                                   |
|   |                         | Castrol Performance-BP  | Castrol Tribol 800/220 | See comments in appendix 4        |
|   |                         | Fuchs Lubritech         | Gearmaster PGP 220     |                                   |
|   |                         | Klüber Lubrication      | Klübersynth GH 6 - 220 |                                   |
|   |                         | Kuwait Petroleum        | Q8 Gade 220            |                                   |
|   |                         | Mobil                   | Mobil Glygoyle 220     | Do not mix with Mobil Glygoyle 30 |
|   |                         | Shell                   | Shell Tivela S 220     |                                   |
|   |                         | Statoil                 | LoadWay PG 220         |                                   |
|   |                         | TEXACO                  | Synlube CLP 220        |                                   |
|   |                         | Total                   | CARTER SY 220          |                                   |

**7355 ISO VG 320**

Synthetic oil, Polyglycol (PG)

| <u>Designation acc. to:</u> |                      | <u>Requirements acc. to:</u> |            |
|-----------------------------|----------------------|------------------------------|------------|
| DIN                         | : 51 502, PG 320     | DIN                          | : -        |
| ISO                         | : -                  | ISO                          | : -        |
| ANSI_AGMA                   | : 9005-D94 lub no. 6 | ANSI_AGMA                    | : 9005-D94 |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u> |
|---|-------------------------|-------------------------|------------------------|----------------------------|
|   |                         | Brugarolas              | Beslux Sincart 320-W   |                            |
|   |                         | Caltex                  | Synlube CLP 320        |                            |
|   |                         | Carl Bechem, GmbH       | Berusynth EP 320       |                            |
|   |                         | Castrol Classic         | Alphasyn PG 320        |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 800/320 | See comments in appendix 4 |
|   |                         | Fuchs Lubritech         | Gearmaster PGP 320     |                            |
|   |                         | Klüber Lubrication      | Klübersynth GH 6 - 320 |                            |
|   |                         | Kuwait Petroleum        | Q8 Gade 320            |                            |
|   |                         | Mobil                   | Mobil Glygoyle 320     |                            |
|   |                         | Shell                   | Shell Tivela S 320     |                            |
|   |                         | Statoil                 | LoadWay PG 320         |                            |
|   |                         | Total                   | CARTER SY 320          |                            |

**7356 ISO VG 460**

Synthetic oil, Polyglycol (PG)

| <u>Designation acc. to:</u> |                      | <u>Requirements acc. to:</u> |            |
|-----------------------------|----------------------|------------------------------|------------|
| DIN                         | : 51 502, PG 460     | DIN                          | : -        |
| ISO                         | : -                  | ISO                          | : -        |
| ANSI_AGMA                   | : 9005-D94 lub no. 7 | ANSI_AGMA                    | : 9005-D94 |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u> |
|---|-------------------------|-------------------------|------------------------|----------------------------|
|   |                         | Brugarolas              | Beslux Sincart 460-W   |                            |
|   |                         | Caltex                  | Synlube CLP 460        |                            |
|   |                         | Carl Bechem, GmbH       | Berusynth EP 460       |                            |
|   |                         | Castrol Classic         | Alphasyn PG 460        |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 800/460 | See comments in appendix 4 |
|   |                         | Fuchs Lubritech         | Gearmaster PGP 460     |                            |
|   |                         | Klüber Lubrication      | Klübersynth GH 6 - 460 |                            |
|   |                         | Kuwait Petroleum        | Q8 Gade 460            |                            |
|   |                         | Mobil                   | Mobil Glygoyle 460     |                            |
|   |                         | Shell                   | Shell Tivela S 460     |                            |
|   |                         | Statoil                 | LoadWay PG 460         |                            |
|   |                         | Total                   | CARTER SY 460          |                            |

**7357 ISO VG 680**

Synthetic oil, Polyglycol (PG)

| <u>Designation acc. to:</u> |                      | <u>Requirements acc. to:</u> |            |
|-----------------------------|----------------------|------------------------------|------------|
| DIN                         | : 51 502, PG 680     | DIN                          | : -        |
| ISO                         | : -                  | ISO                          | : -        |
| ANSI_AGMA                   | : 9005-D94 lub no. 8 | ANSI_AGMA                    | : 9005-D94 |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u> |
|---|-------------------------|-------------------------|------------------------|----------------------------|
|   |                         | Brugarolas              | Beslux Sincart 680-W   |                            |
|   |                         | Carl Bechem, GmbH       | Berusynth EP 680       |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 800/680 | See comments in appendix 4 |
|   |                         | Fuchs Lubritech         | Gearmaster PGP 680     |                            |
|   |                         | Klüber Lubrication      | Klübersynth GH 6 - 680 |                            |
|   |                         | Kuwait Petroleum        | Q8 Gade 680            |                            |
|   |                         | Mobil                   | Mobil Glygoyle 680     |                            |
|   |                         | Shell                   | Shell Tivela S 680     |                            |
|   |                         | Statoil                 | LoadWay PG 680         |                            |
|   |                         | TEXACO                  | Synlube CLP 680        |                            |

**7358 ISO VG 1000**

Synthetic oil, Polyglycol (PG)

| <u>Designation acc. to:</u> |                      | <u>Requirements acc. to:</u> |            |
|-----------------------------|----------------------|------------------------------|------------|
| DIN                         | : 51 502, PG 1000    | DIN                          | : -        |
| ISO                         | : -                  | ISO                          | : -        |
| ANSI_AGMA                   | : 9005-D94 lub no. 9 | ANSI_AGMA                    | : 9005-D94 |

| 0 | <b>Standard product</b> | <b>Oil company name</b>                                       | <b>Product name</b>  | <b>Comments on product</b> |
|---|-------------------------|---|--|----------------------------|
|   |                         | Carl Bechem, GmbH<br>Castrol Performance-BP<br>Mobil<br>Shell | Berusynth EP 1000<br>Castrol Tribol 800/1000<br>Mobil Glygoyle 1000<br>Shell Tivela S 1000 | See comments in appendix 4 |

### Synthetic oil, Polyglycol (PG, Rossi)

|    |                            |  |  |  |
|----|----------------------------|--|--|--|
| 20 | <b>General application</b> | Lubrication of bearings, gear units and hydraulic systems running at very high temperatures. NOT RECOMMENDED for gear units manufactured by Flender. |  |  |
| 31 | <b>Property</b>            | See endnote no. 2 in this appendix 1 for more details on the property.   |  |  |

#### 1 **General requirement**

-

#### 7363 ISO VG 150

Synthetic oil, Polyglycol (PG, Rossi)

| Designation acc. to: |     | Requirements acc. to: |     |
|----------------------|-----|-----------------------|-----|
| DIN                  | : - | DIN                   | : - |
| ISO                  | : - | ISO                   | : - |
| ANSI_AGMA            | : - | ANSI_AGMA             | : - |

|    |                          |   |  |  |
|----|--------------------------|---|--|--|
| 21 | <b>Special condition</b> | Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5) |  |  |
|----|--------------------------|---|--|--|

| <b>Special product</b> | <b>Oil company name</b>              | <b>Product name</b>   | <b>Comments on product</b>         |
|------------------------|--------------------------------------|---|------------------------------------|
|                        | Klüber Lubrication<br>Mobil<br>Shell | Klübersynth GH 6 - 150<br>Mobil Glygoyle 22<br>Shell Tivela S 150 | Do not mix with Mobil Glygoyle 150 |

#### 7364 ISO VG 220

Synthetic oil, Polyglycol (PG, Rossi)

| Designation acc. to: |     | Requirements acc. to: |     |
|----------------------|-----|-----------------------|-----|
| DIN                  | : - | DIN                   | : - |
| ISO                  | : - | ISO                   | : - |
| ANSI_AGMA            | : - | ANSI_AGMA             | : - |

|    |                          |   |  |  |
|----|--------------------------|---|--|--|
| 21 | <b>Special condition</b> | Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5) |  |  |
|----|--------------------------|---|--|--|

| <b>Special product</b> | <b>Oil company name</b>              | <b>Product name</b>   | <b>Comments on product</b>         |
|------------------------|--------------------------------------|---|------------------------------------|
|                        | Klüber Lubrication<br>Mobil<br>Shell | Klübersynth GH 6 - 220<br>Mobil Glygoyle 30<br>Shell Tivela S 220 | Do not mix with Mobil Glygoyle 220 |

#### 7365 ISO VG 320

Synthetic oil, Polyglycol (PG, Rossi)

| Designation acc. to: |     | Requirements acc. to: |     |
|----------------------|-----|-----------------------|-----|
| DIN                  | : - | DIN                   | : - |
| ISO                  | : - | ISO                   | : - |
| ANSI_AGMA            | : - | ANSI_AGMA             | : - |

|    |                          |   |  |  |
|----|--------------------------|---|--|--|
| 21 | <b>Special condition</b> | Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5) |  |  |
|----|--------------------------|---|--|--|

| <b>Special product</b> | <b>Oil company name</b>              | <b>Product name</b>  | <b>Comments on product</b> |
|------------------------|--------------------------------------|--|----------------------------|
|                        | Klüber Lubrication<br>Mobil<br>Shell | Klübersynth GH 6 - 320<br>Mobil Glygoyle 320<br>Shell Tivela S 320 |                            |

#### 7366 ISO VG 460

Synthetic oil, Polyglycol (PG, Rossi)

| Designation acc. to: |     | Requirements acc. to: |     |
|----------------------|-----|-----------------------|-----|
| DIN                  | : - | DIN                   | : - |
| ISO                  | : - | ISO                   | : - |
| ANSI_AGMA            | : - | ANSI_AGMA             | : - |

|    |                          |   |  |  |
|----|--------------------------|---|--|--|
| 21 | <b>Special condition</b> | Lubrication for Rossi Motoriduttori gear of type Coaxial 100 ... 180, Parallel and right angle shaft sizes 100 ... 631. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5) |  |  |
|----|--------------------------|---|--|--|

| <b>Special product</b> | <b>Oil company name</b>              | <b>Product name</b>  | <b>Comments on product</b> |
|------------------------|--------------------------------------|--|----------------------------|
|                        | Klüber Lubrication<br>Mobil<br>Shell | Klübersynth GH 6 - 460<br>Mobil Glygoyle 460<br>Shell Tivela S 460 |                            |

#### 7383 ISO VG 220

Synthetic oil, Polyglycol (PG, Rossi)

| Designation acc. to: |     | Requirements acc. to: |     |
|----------------------|-----|-----------------------|-----|
| DIN                  | : - | DIN                   | : - |
| ISO                  | : - | ISO                   | : - |
| ANSI_AGMA            | : - | ANSI_AGMA             | : - |

22 **Special condition** Lubrication for Rossi Motoriduttori gear of type Worm Sizes 100 ... 250. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>    | <b>Comments on product</b>        |
|------------------------|-------------------------|------------------------|-----------------------------------|
|                        | ARAL                    | Aral Degol GS 220      |                                   |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 220 |                                   |
|                        | Mobil                   | Mobil Glygoyle 220     | Do not mix with Mobil Glygoyle 30 |
|                        | Shell                   | Shell Tivela S 220     |                                   |

**7384 ISO VG 320** Synthetic oil, Polyglycol (PG, Rossi)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

22 **Special condition** Lubrication for Rossi Motoriduttori gear of type Worm Sizes 100 ... 250. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>    | <b>Comments on product</b> |
|------------------------|-------------------------|------------------------|----------------------------|
|                        | ARAL                    | Aral Degol GS 320      |                            |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 320 |                            |
|                        | Mobil                   | Mobil Glygoyle 320     |                            |
|                        | Shell                   | Shell Tivela S 320     |                            |

**7385 ISO VG 460** Synthetic oil, Polyglycol (PG, Rossi)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

22 **Special condition** Lubrication for Rossi Motoriduttori gear of type Worm Sizes 100 ... 250. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>    | <b>Comments on product</b> |
|------------------------|-------------------------|------------------------|----------------------------|
|                        | ARAL                    | Aral Degol GS 460      |                            |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 460 |                            |
|                        | Mobil                   | Mobil Glygoyle 460     |                            |
|                        | Shell                   | Shell Tivela S 460     |                            |

**7386 ISO VG 680** Synthetic oil, Polyglycol (PG, Rossi)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

22 **Special condition** Lubrication for Rossi Motoriduttori gear of type Worm Sizes 100 ... 250. - See operating instruction Rossi Motoriduttori chapter 6 lubrication. (UT.D 045 Version 5)

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>    | <b>Comments on product</b> |
|------------------------|-------------------------|------------------------|----------------------------|
|                        | ARAL                    | Aral Degol GS 680      |                            |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 680 |                            |
|                        | Mobil                   | Mobil Glygoyle 680     |                            |
|                        | Shell                   | Shell Tivela S 680     |                            |

**Synthetic oil, Polyglycol (PG, SEW)**

20 **General application** Lubrication of bearings, gear units and hydraulic systems running at very high temperatures. NOT RECOMMENDED for gear units manufactured by Flender.

31 **Property** See endnote no. 2 in this appendix 1 for more details on the property.

1 **General requirement** -

**7373 ISO VG 220** Synthetic oil, Polyglycol (PG, SEW)

| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
|-----------------------------|-----|------------------------------|-----|
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

17 **Special condition** Special lubrication products recommended for SEW gear of type R..., K...(HK...), F... and special lubrication products recommended for S.E.W. Gear of type S...(HS...) - See operating instruction SEW chapter 9 lubrication.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>    | <b>Comments on product</b>        |
|------------------------|-------------------------|------------------------|-----------------------------------|
|                        | Castrol Performance-BP  | Castrol Tribol 800/220 | See comments in appendix 4        |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 220 |                                   |
|                        | Mobil                   | Mobil Glygoyle 220     | Do not mix with Mobil Glygoyle 30 |
|                        | Shell                   | Shell Tivela S 220     |                                   |
|                        | Statoil                 | LoadWay PG 220         |                                   |
|                        | TEXACO                  | Synlube CLP 220        |                                   |
|                        | Total                   | CARTER SY 220          |                                   |

**7376 ISO VG 680**

Synthetic oil, Polyglycol (PG, SEW)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

16 **Special condition** Special lubrication products recommended for SEW gear of type S...(HS...). - See operating instruction SEW chapter 9 lubrication.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u> |
|------------------------|-------------------------|------------------------|----------------------------|
|                        | BP                      | Energyn SG-XP 680      |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 800/680 | See comments in appendix 4 |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 680 |                            |
|                        | Shell                   | Shell Tivela S 680     |                            |
|                        | Statoil                 | LoadWay PG 680         |                            |
|                        | TEXACO                  | Synlube CLP 680        |                            |

**Synthetic oil, Polyglycol (PG, Flender)**

- 36 **General application** Lubrication of bearings, gear units and hydraulic systems running at very high temperatures. NOT RECOMMENDED for gear units manufactured by FLS.
- 20 **Property** CLP polyglycol (PG) oil contains additives for improvement of corrosion protection, resistance to ageing and reduces wear in mixed-friction areas according to DIN 51 517-3. See also Endnote 2 in appendix 1.
- 18 **General requirement** Flender instruction BA 6610TU EN 03.05 should be considered when choosing lubricant. See endnote no. 15 in this appendix 1 for more details on general requirements.

**7390 ISO VG 100**

Synthetic oil, Polyglycol (PG, Flender)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u> | <u>Comments on product</u> |
|------------------------|-------------------------|---------------------|----------------------------|
|                        | BP                      | Energyn SG-XP 100   |                            |
|                        | Carl Bechem, GmbH       | Berusynth EP 100    |                            |
|                        | Fuchs Lubritech         | Gearmaster PGP 100  |                            |

**7391 ISO VG 150**

Synthetic oil, Polyglycol (PG, Flender)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>    | <u>Comments on product</u> |
|------------------------|-------------------------|------------------------|----------------------------|
|                        | BP                      | Energyn SG-XP 150      |                            |
|                        | Brugarolas              | Beslux Sincart 150-W   |                            |
|                        | Carl Bechem, GmbH       | Berusynth EP 150       |                            |
|                        | Fuchs Lubritech         | Gearmaster PGP 150     |                            |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 150 |                            |
|                        | Shell                   | Shell Tivela S 150     |                            |

**7392 ISO VG 220**

Synthetic oil, Polyglycol (PG, Flender)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | BP                      | Energyn SG-XP 220       |                            |
|                        | Brugarolas              | Beslux Sincart 220-W    |                            |
|                        | Carl Bechem, GmbH       | Berusynth EP 220        |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1300/220 |                            |
|                        | Fuchs Lubritech         | Gearmaster PGP 220      |                            |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 220  |                            |
|                        | Shell                   | Shell Tivela S 220      |                            |



**7393 ISO VG 320**

Synthetic oil, Polyglycol (PG, Flender)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | BP                      | Energyn SG-XP 320       |                            |
|                        | Brugarolas              | Beslux Sincart 320-W    |                            |
|                        | Carl Bechem, GmbH       | Berusynth EP 320        |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1300/320 |                            |
|                        | Fuchs Lubritech         | Gearmaster PGP 320      |                            |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 320  |                            |
|                        | Shell                   | Shell Tivela S 320      |                            |

**7394 ISO VG 460**

Synthetic oil, Polyglycol (PG, Flender)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | BP                      | Energyn SG-XP 460       |                            |
|                        | Brugarolas              | Beslux Sincart 460-W    |                            |
|                        | Carl Bechem, GmbH       | Berusynth EP 460        |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1300/460 |                            |
|                        | Fuchs Lubritech         | Gearmaster PGP 460      |                            |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 460  |                            |
|                        | Shell                   | Shell Tivela S 460      |                            |

**7395 ISO VG 680**

Synthetic oil, Polyglycol (PG, Flender)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | BP                      | Energyn SG-XP 680       |                            |
|                        | Brugarolas              | Beslux Sincart 680-W    |                            |
|                        | Carl Bechem, GmbH       | Berusynth EP 680        |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1300/680 |                            |
|                        | Fuchs Lubritech         | Gearmaster PGP 680      |                            |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 680  |                            |
|                        | Shell                   | Shell Tivela S 680      |                            |

**7396 ISO VG 1000**

Synthetic oil, Polyglycol (PG, Flender)

|                             |     |                              |     |
|-----------------------------|-----|------------------------------|-----|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |     |
| DIN                         | : - | DIN                          | : - |
| ISO                         | : - | ISO                          | : - |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : - |

11 **Special condition** Special products recommended for Flender helical-gear, bevel-helical gear, planetary gear units and geared motors. - See Flender instructions BA 7300 EN 12.08, Table A.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>      | <u>Comments on product</u> |
|------------------------|-------------------------|--------------------------|----------------------------|
|                        | Brugarolas              | Beslux Sincart 1000-W    |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 1300/1000 |                            |
|                        | Fuchs Lubritech         | Gearmaster PGP 1000      |                            |
|                        | Klüber Lubrication      | Klübersynth GH 6 - 1000  |                            |
|                        | Shell                   | Shell Tivela S 1000      |                            |

**7406 ISO VG 1000**

Synthetic oil, Polyglycol (PG, Flender)

|                             |                     |                              |                    |
|-----------------------------|---------------------|------------------------------|--------------------|
| <u>Designation acc. to:</u> |                     | <u>Requirements acc. to:</u> |                    |
| DIN                         | : 51502 CLP PG 1000 | DIN                          | : 51517-3 CLP 1000 |
| ISO                         | : -                 | ISO                          | : -                |
| ANSI_AGMA                   | : -                 | ANSI_AGMA                    | : -                |

19 **Special condition** FLENDER DRIVES & AUTOMATIC, BA 6610TU EN 03.05. - Lubrication product given for Flender drives & automatic are compulsory. The use of any other lubricant results in responsibility for technical suitability.

| <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>     | <u>Comments on product</u> |
|------------------------|-------------------------|-------------------------|----------------------------|
|                        | ARAL                    | Degol GS 1000           |                            |
|                        | Castrol Performance-BP  | Castrol Tribol 800/1000 | See comments in appendix 4 |
|                        | Fuchs Lubritech         | Renolin PG 1000         |                            |

## Grease, Multipurpose

|    |                            |  |
|----|----------------------------|--|
| 21 | <b>General application</b> | General industrial lubrication. Electrical motor and generator. Large bearings > 75 mm bore. Lubrication of all types of roller and plain bearing for medium to high loads and moderate to high speeds (dN-factor < 200.000).<br>Special application: Solyvent damper, bearing and ball joint at temperature up to 110 °C.               |
| 6  | <b>Property</b>            | The multipurpose grease and the low-temperature grease consist of a highly refined mineral oil or polyalphaolefin with a thickener added as well as additives to prevent corrosion and oxidation. Multipurpose grease and low-temperature grease is not mixable unless thickener is of the same type. Grease of NLGI 3 is not pump able. |
| 1  | <b>General requirement</b> | -  |

### 7425 NLGI 2

Grease, Multipurpose

#### Designation acc. to:

|           |   |                      |
|-----------|---|----------------------|
| DIN       | : | 51 502, KP2K-20      |
| ISO       | : | 6743 part 9, XBCHB 2 |
| ANSI_AGMA | : | -                    |

#### Requirements acc. to:

|           |   |                    |
|-----------|---|--------------------|
| DIN       | : | 51 825, KP 2 K -20 |
| ISO       | : | -                  |
| ANSI_AGMA | : | -                  |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>           | <u>Comments on product</u> |
|---|-------------------------|-------------------------|-------------------------------|----------------------------|
|   |                         | Brugarolas              | G. A. Plex-2                  |                            |
|   |                         | Caltex                  | Starplex 2                    |                            |
|   |                         | Caltex                  | Multifak EP 2                 |                            |
|   |                         | Carl Bechem, GmbH       | HIGH LUB L 474                |                            |
|   |                         | Carl Bechem, GmbH       | HIGH LUB LT 2 EP              |                            |
|   |                         | Castrol Classic         | Castrol LMX                   |                            |
|   |                         | Castrol Performance-BP  | Castrol Tribol 4020/220-2     |                            |
|   |                         | Castrol Performance-BP  | Castrol Olista Longtime 2     |                            |
|   |                         | Castrol Performance-BP  | Castrol Molub-Alloy 860/220-2 |                            |
|   |                         | Engen Petroleum         | Engen Premium EP 2            |                            |
|   |                         | ESSO-EXXON              | Beacon EP 2                   |                            |
|   |                         | Fuchs Lubritech         | Urethyn MP 2                  |                            |
|   |                         | India Oil Corporation   | Servoplex LC - 2              |                            |
|   |                         | Klüber Lubrication      | Microlube GL 262              |                            |
|   |                         | Krafft S. L.            | KEP-2                         |                            |
|   |                         | Kuwait Petroleum        | Q8 Rembrandt EP 2             |                            |
|   |                         | Mobil                   | Mobilux EP 2                  |                            |
|   |                         | Mobil                   | Mobilgrease XHP 222           |                            |
|   |                         | Rocol                   | Sapphire 2                    |                            |
|   |                         | Shell                   | Shell Albida EP 2             | Lithiumcomplex thickener   |
|   |                         | Shell                   | Shell Alvania EP 2            |                            |
|   |                         | Statoil                 | UniWay Li 62                  |                            |
|   |                         | Total                   | CERAN WR2                     |                            |

### 7426 NLGI 3

Grease, Multipurpose

#### Designation acc. to:

|           |   |                 |
|-----------|---|-----------------|
| DIN       | : | 51 502, K 3N-20 |
| ISO       | : | -               |
| ANSI_AGMA | : | -               |

#### Requirements acc. to:

|           |   |                   |
|-----------|---|-------------------|
| DIN       | : | 51 825, K 3 N -20 |
| ISO       | : | -                 |
| ANSI_AGMA | : | -                 |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>       | <u>Comments on product</u> |
|---|-------------------------|-------------------------|---------------------------|----------------------------|
|   |                         | Carl Bechem, GmbH       | HIGH-LUB L 3              |                            |
|   |                         | Castrol Performance-BP  | Castrol Olista Longtime 3 |                            |
|   |                         | Engen Petroleum         | Engen Premium EP 3        |                            |
|   |                         | ESSO-EXXON              | Unirex N 3                |                            |
|   |                         | Klüber Lubrication      | Staburags NBU 4           |                            |
|   |                         | Mobil                   | Mobil Unirex N3           |                            |
|   |                         | Shell                   | Shell Alvania RL 3        |                            |
|   |                         | Total                   | MULTIS 3                  | ELECTRICAL MOTORS          |

## Grease, Low-temperature

|    |                            |  |
|----|----------------------------|--|
| 22 | <b>General application</b> | Rolling and plain bearings in mechanical/electrical high-speed equipment with low to moderate operating temperatures.  |
| 6  | <b>Property</b>            | The multipurpose grease and the low-temperature grease consist of a highly refined mineral oil or polyalphaolefin with a thickener added as well as additives to prevent corrosion and oxidation. Multipurpose grease and low-temperature grease is not mixable unless thickener is of the same type. Grease of NLGI 3 is not pump able. |
| 1  | <b>General requirement</b> | -  |

### 7434 NLGI 1

Grease, Low-temperature

#### Designation acc. to:

|           |   |                 |
|-----------|---|-----------------|
| DIN       | : | 51 502, K 1N-30 |
| ISO       | : | -               |
| ANSI_AGMA | : | -               |

#### Requirements acc. to:

|           |   |                   |
|-----------|---|-------------------|
| DIN       | : | 51 825, K 1 N -30 |
| ISO       | : | -                 |
| ANSI_AGMA | : | -                 |

| 0 | <b>Standard product</b> | <b>Oil company name</b>   | <b>Product name</b>  | <b>Comments on product</b> |
|---|-------------------------|---|--|----------------------------|
|   |                         | Carl Bechem, GmbH<br>Klüber Lubrication<br>Klüber Lubrication<br>Shell<br>Total | High-Lub L1 EP<br>Microlube GL 261<br>Klüberplex BEM 41-141<br>Shell Albida EP 1<br>CERAN LT | Good pumpability           |

### 7435 NLGI 2

Grease, Low-temperature

| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |                      |
|-----------------------------|-------------------|------------------------------|----------------------|
| DIN                         | : 51 502, K 2K-40 | DIN                          | : 51 825, KP 2 K -40 |
| ISO                         | : 6743-9, XDCHA 2 | ISO                          | : -                  |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : -                  |

| 0 | <b>Standard product</b> | <b>Oil company name</b>   | <b>Product name</b>  | <b>Comments on product</b> |
|---|-------------------------|---|--|----------------------------|
|   |                         | Brugarolas<br>Caltex<br>Carl Bechem, GmbH<br>Carl Bechem, GmbH<br>Castrol Classic<br>Castrol Performance-BP<br>Engen Petroleum<br>Fuchs Lubritech<br>India Oil Corporation<br>India Oil Corporation<br>Krafft S. L.<br>Kuwait Petroleum<br>Mobil<br>Mobil<br>Rocol<br>Shell | G. Beslux Plex 735<br>Ulti-Plex Synthetic EP<br>HIGH LUB LM 2 EP<br>High-Lub LM 2 EP<br>Castrol S<br>Castrol Tribol 3785<br>Engen Gengrease SPL 2HT<br>Stabyl LT 50<br>Servogem - 2<br>Servogrease Repair Compound<br>KEP 2 GF<br>Q8 Rubens LT 2<br>Mobilith SHC 220<br>Mobilith SHC 100<br>Sapphire Lo-Temp 2<br>Shell Albida EMS 2 | -                          |

## Grease, High-temperature

- 39 **General application** Rolling and plain bearings in mechanical or electrical equipment. High operation temperatures. Special application: Solyvent damper, bearing and ball joint at temperature up to 350 °C.
- 4 **Property** High-temperature grease consists of highly refined mineral oil or syntethic oil (perfluoroalkyl ether oil. PTFE) with a thickener added as well as additives to prevent corrosion and oxidation. High-temperature grease must be suitable for centralised lubrication systems.
- 22 **General requirement** Information on water resistance must be required for every single product. Corrosion protection must be agreed with supplier.

### 7445 NLGI 2

Grease, High-temperature

| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |                     |
|-----------------------------|-------------------|------------------------------|---------------------|
| DIN                         | : 51 502, K 2R-20 | DIN                          | : 51 825, K 2 R -20 |
| ISO                         | : 6743-9, XBFHA 2 | ISO                          | : -                 |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : -                 |

| 0 | <b>Standard product</b> | <b>Oil company name</b>   | <b>Product name</b>  | <b>Comments on product</b>   |
|---|-------------------------|---|--|--|
|   |                         | Brugarolas<br>Caltex<br>Caltex<br><br>Carl Bechem, GmbH<br>Carl Bechem, GmbH<br>Engen Petroleum<br>Fuchs Lubritech<br>India Oil Corporation<br>Klüber Lubrication<br>Krafft S. L.<br>Kuwait Petroleum<br>Rocol<br>Shell<br>Shell<br>Shell<br>Statoil<br>Total | G. Beslux VHT/S<br>Ulti-Plex Synthetic EP<br>Thermatex EP 2<br><br>Berutox FH 28 KN<br>Berutox M 21 KN<br>Engen Gengrease HT 41M<br>Urethyn MP 2<br>Servogem Super HT<br>Stabutherm GH 462<br>KL Complex 150<br>Q8 Rubens WB<br>Sapphire Premier<br>Shell Retinax LX 2<br>Shell Stamina EP 2<br>Shell Stamina HDS 2<br>UniWay LIX 625<br>ALTIS MV2 | Operation temp 260 [°C] at frequent relubrication, otherwise 130 [°C]. |

### 7446 NLGI 2

Grease, High-temperature

| <u>Designation acc. to:</u> |                    | <u>Requirements acc. to:</u> |                     |
|-----------------------------|--------------------|------------------------------|---------------------|
| DIN                         | : 51 502, KPF2U-20 | DIN                          | : 51 825, K 2 U -20 |
| ISO                         | : 6743-9, XDGH 2   | ISO                          | : -                 |
| ANSI_AGMA                   | : -                | ANSI_AGMA                    | : -                 |

- 23 **Special condition** Special application: Solyvent damper, bearing and ball joint at temperature up to 350 °C. - No further remarks.

|  | <b>Special product</b> | <b>Oil company name</b>                               | <b>Product name</b>                                       | <b>Comments on product</b>   |
|--|------------------------|---|---|------------------------------|
|  |                        | Castrol Performance-BP<br>Klüber Lubrication<br>Total | Castrol Firetemp XT 2<br>Barrierta L 55/2<br>STATERMIC NR | Do not mix with other grease |

### Grease, Low-speed

- 34 **General application** Rolling and plain bearings. Spherical bearings in particular. Low to extremely low speed, dN-factor < 100.000. Moderate to high temperature.
- 9 **Property** Low-speed grease consists of a highly refined mineral oil or polyalphaolefin with a thickener added as well as additives to prevent corrosion and oxidation. Extreme pressure is supported by this grease.  
NOTE: The ISO code indicates lower operation temperature 0 °C and the DIN code -10 °C. Contents of MoS2 or graphite is optional.
- 23 **General requirement** Continuous operation temperature of 140 [°C] to be fulfilled. Vertical shaft configuration of spherical roller bearing shall be met.

#### 7455 NLGI 1 or 2

Grease, Low-speed

|                             |                                |                              |                                      |
|-----------------------------|--------------------------------|------------------------------|--------------------------------------|
| <u>Designation acc. to:</u> |                                | <u>Requirements acc. to:</u> |                                      |
| DIN                         | : 51 502, KPF1K-10 or KPF2K-10 | DIN                          | : 51 825, KPF 1 K -10 or KPF 2 K -10 |
| ISO                         | : 6743-9, XACHB 1 or XACHB 2   | ISO                          | : -                                  |
| ANSI_AGMA                   | : -                            | ANSI_AGMA                    | : -                                  |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>       | <u>Comments on product</u>  |
|---|-------------------------|-------------------------|---------------------------|-----------------------------|
|   |                         | Brugarolas              | G. Beslux Plex EH-2/G     |                             |
|   |                         | Caltex                  | Ultra-Duty Grease 2       |                             |
|   |                         | Carl Bechem, GmbH       | High-Lub FA 50 MO         |                             |
|   |                         | Castrol Performance-BP  | Castrol Molub-Alloy 777-1 |                             |
|   |                         | Castrol Performance-BP  | Castrol Molub-Alloy 777-2 |                             |
|   |                         | Castrol Performance-BP  | Castrol Molub-Alloy 870-2 |                             |
|   |                         | Engen Petroleum         | Engen Genlex EP 42 MT     |                             |
|   |                         | Fuchs Lubritech         | Staby! HD                 |                             |
|   |                         | India Oil Corporation   | Servogrease WR 2          |                             |
|   |                         | Krafft S. L.            | KL Complex 2000           | Solvent free. Graphite+Mo2S |
|   |                         | Kuwait Petroleum        | Q8 Ruysdael WR 2          |                             |
|   |                         | Mobil                   | Mobilith SHC 1500         | PAO                         |
|   |                         | Shell                   | Shell Stamina HDS 2       |                             |
|   |                         | Shell                   | Shell Albida HD 2         |                             |
|   |                         | Statoil                 | GreaseWay CaH 92          |                             |
|   |                         | Total                   | CERAN MS                  |                             |

#### 7456 NLGI 1 or 2

Grease, Low-speed

|                             |                                |                              |                                      |
|-----------------------------|--------------------------------|------------------------------|--------------------------------------|
| <u>Designation acc. to:</u> |                                | <u>Requirements acc. to:</u> |                                      |
| DIN                         | : 51 502, KPF1K-10 or KPF2K-10 | DIN                          | : 51 825, KPF 1 K -10 or KPF 2 K -10 |
| ISO                         | : 6743-9, XACHB 1 or XACHB 2   | ISO                          | : -                                  |
| ANSI_AGMA                   | : -                            | ANSI_AGMA                    | : -                                  |

- 10 **Special condition** Special products recommended for coal mill grinding roller assembly. - No further remarks.

|  | <u>Special product</u> | <u>Oil company name</u> | <u>Product name</u>  | <u>Comments on product</u> |
|--|------------------------|-------------------------|----------------------|----------------------------|
|  |                        | Klüber Lubrication      | Klüberlub BE 41-1501 |                            |

#### 7457 NLGI 2

Grease, Low-speed

|                             |                   |                              |                      |
|-----------------------------|-------------------|------------------------------|----------------------|
| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |                      |
| DIN                         | : 51 502, KP2N-10 | DIN                          | : 51 825, KP 2 N -10 |
| ISO                         | : 6743-9, XACHB 2 | ISO                          | : -                  |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : -                  |

| 0 | <u>Standard product</u> | <u>Oil company name</u> | <u>Product name</u>  | <u>Comments on product</u> |
|---|-------------------------|-------------------------|----------------------|----------------------------|
|   |                         | Carl Bechem, GmbH       | Berutox FH 28 EPK 2  |                            |
|   |                         | FAG                     | Arcanol TEMP 120     |                            |
|   |                         | Klüber Lubrication      | Klüberlub BE 41-1501 |                            |
|   |                         | Mobil                   | Mobilith SHC 1500    | PAO                        |
|   |                         | SKF                     | LGHB 2               | Mineral base oil           |

### Kiln and mill gear units spray lubricant

- 25 **General application** This running-in lubricant is used for lubrication of kiln and mill gear units with automatic spray lubrication.
- 24 **Property** The lubricant consists of mineral oil with extreme pressure additives (EP additives) and may contain MoS2 and graphite as well as other types of solid lubricant. The products can be liquid or fatty.
- 1 **General requirement** -

#### 7523 NLGI 1

Kiln and mill gear units spray lubricant

|                             |                  |                              |     |
|-----------------------------|------------------|------------------------------|-----|
| <u>Designation acc. to:</u> |                  | <u>Requirements acc. to:</u> |     |
| DIN                         | : 51 502, OGPf 1 | DIN                          | : - |
| ISO                         | : 6743-6, CKL    | ISO                          | : - |
| ANSI_AGMA                   | : -              | ANSI_AGMA                    | : - |

5 **Special condition** Special products recommended for kiln and mill gear unit with automatic spray lubrication. - Priming lubricant, to be applied by hand before start-up. Not to be used in spray lubrication equipment.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>      | <b>Comments on product</b> |
|------------------------|-------------------------|--------------------------|----------------------------|
|                        | Carl Bechem, GmbH       | Berulit 443              |                            |
|                        | Castrol Performance-BP  | Castrol Molub-Alloy 5011 |                            |
|                        | Fuchs Lubritech         | Ceplattyn 300            |                            |
|                        | Klüber Lubrication      | Grafloscon A-G 1 Ultra   | Contains graphite only     |
|                        | Krafft S. L.            | Q3-4612                  |                            |
|                        | Shell                   | Shell Malleus GL 500     |                            |

**7525 NLGI 0 / 00**

Kiln and mill gear units spray lubricant

| <u>Designation acc. to:</u> |                  | <u>Requirements acc. to:</u> |     |
|-----------------------------|------------------|------------------------------|-----|
| DIN                         | : 51 502, OGPf 0 | DIN                          | : - |
| ISO                         | : 6743-6, CKL    | ISO                          | : - |
| ANSI_AGMA                   | : -              | ANSI_AGMA                    | : - |

6 **Special condition** Special products recommended for kiln and mill gear unit with automatic spray lubrication. - Running-in lubricant.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>      | <b>Comments on product</b>       |
|------------------------|-------------------------|--------------------------|----------------------------------|
|                        | Carl Bechem, GmbH       | Berulit EL 420           |                                  |
|                        | Castrol Performance-BP  | Castrol Molub-Alloy 5011 |                                  |
|                        | Fuchs Lubritech         | Ceplattyn RN             |                                  |
|                        | Klüber Lubrication      | Grafloscon B-SG 00 Ultra | Contains graphite only. NLGI 00. |
|                        | Krafft S. L.            | KGP-2/P-E                |                                  |
|                        | Shell                   | Shell Malleus RN         |                                  |

**7527 NLGI 0 / 00**

Kiln and mill gear units spray lubricant

| <u>Designation acc. to:</u> |                  | <u>Requirements acc. to:</u> |     |
|-----------------------------|------------------|------------------------------|-----|
| DIN                         | : 51 502, OGPf 0 | DIN                          | : - |
| ISO                         | : 6743-6, CKL    | ISO                          | : - |
| ANSI_AGMA                   | : -              | ANSI_AGMA                    | : - |

14 **Special condition** Special products recommended for kiln and mill gear unit with automatic spray lubrication. - Operational lubricant for temperate areas, the final choice depends on the operating conditions.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | Carl Bechem, GmbH       | Berulit GA 400                   |                            |
|                        | Castrol Performance-BP  | Castrol Molub-Alloy 9790/2500-0  |                            |
|                        | Castrol Performance-BP  | Castrol Molub-Alloy 8031/3000-00 |                            |
|                        | Fuchs Lubritech         | Ceplattyn KG 10 HMF              |                            |
|                        | Klüber Lubrication      | Grafloscon C-SG 0 Ultra          | Contains graphite only.    |
|                        | Krafft S. L.            | KGP-2/P                          |                            |
|                        | Mobil                   | Mobilgear OGL 007                |                            |
|                        | Shell                   | Shell Malleus GL 400             |                            |

**7529 NLGI 0 / 00**

Kiln and mill gear units spray lubricant

| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |     |
|-----------------------------|-------------------|------------------------------|-----|
| DIN                         | : 51 502, OGPf 00 | DIN                          | : - |
| ISO                         | : 6743-6, CKL     | ISO                          | : - |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : - |

8 **Special condition** Special products recommended for kiln and mill gear unit with automatic spray lubrication. - Operational lubricant for sub-tropical areas, the final choice depends on the operating conditions. External heating may be necessary.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>              | <b>Comments on product</b> |
|------------------------|-------------------------|----------------------------------|----------------------------|
|                        | Carl Bechem, GmbH       | Berulit GA 800                   |                            |
|                        | Castrol Performance-BP  | Castrol Molub-Alloy 8031/3000-00 |                            |
|                        | Castrol Performance-BP  | Castrol Molub-Alloy 9790/2500-0  |                            |
|                        | Fuchs Lubritech         | Ceplattyn KG 10 HMF 1000         |                            |
|                        | Klüber Lubrication      | Grafloscon C-SG 1000 Ultra       | Contains graphite only.    |
|                        | Krafft S. L.            | KGP-2/P                          |                            |
|                        | Mobil                   | Mobilgear OGL 009                |                            |
|                        | Shell                   | Shell Malleus GL 3500            |                            |

**7531 NLGI 0 / 00**

Kiln and mill gear units spray lubricant

| <u>Designation acc. to:</u> |                   | <u>Requirements acc. to:</u> |     |
|-----------------------------|-------------------|------------------------------|-----|
| DIN                         | : 51 502, OGPf 00 | DIN                          | : - |
| ISO                         | : 6743-6, CKL     | ISO                          | : - |
| ANSI_AGMA                   | : -               | ANSI_AGMA                    | : - |

7 **Special condition** Special products recommended for kiln and mill gear unit with automatic spray lubrication. - Operational lubricant for tropical areas, the final choice depends on the operating conditions. External heating may be necessary.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b> | <b>Comments on product</b> |
|------------------------|-------------------------|---------------------|----------------------------|
|                        | Carl Bechem, GmbH       | Berulit GA 2500     |                            |

|                        |                                  |                         |
|------------------------|----------------------------------|-------------------------|
| Castrol Performance-BP | Castrol Molub-Alloy 9790/2500-0  |                         |
| Castrol Performance-BP | Castrol Molub-Alloy 8031/3000-00 |                         |
| Fuchs Lubritech        | Ceplattyn KG 10 LC               |                         |
| Fuchs Lubritech        | Ceplattyn KG 10 HMF 2500         |                         |
| Klüber Lubrication     | Grafloscon C-SG 2000 Ultra       | Contains graphite only. |
| Krafft S. L.           | KGP-2/Plex 1500                  |                         |
| Mobil                  | Mobilgear OGL 009                |                         |

**Grease. Low viscosity (SEW)**

- 32 **General application** Particularly suitable for the lubrication of enclosed gears and bearings in poorly sealed gear. Can also be used in many other industrial applications where conventional gear oils cannot be retained in gear cases, chain cases, etc. because of leakage due to worn or missing seals. Used in enclosed gear, worm gear in particular and central lubrication equipment at high temperature. The grease is recommended as a long life gearbox lubricant for industrial applications where maintenance access is difficult, or where production service demands built-in lubrication for the life of the unit.
- 29 **Property** Lithium hydroxystearate greases are formulated to provide extra protection against wear, rusting and water washout.
- 1 **General requirement** -

**7540 NLGI 00**

Grease. Low viscosity (SEW)

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |          |
| DIN                         | : - | DIN                          | : 51 818 |
| ISO                         | : - | ISO                          | : -      |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : -      |

- 18 **Special condition** Lubrication for SEW gear type R32 and R302. - See operating instruction SEW chapter 9 lubrication.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b>      | <b>Comments on product</b> |
|------------------------|-------------------------|--------------------------|----------------------------|
|                        | Klüber Lubrication      | Klübersynth GE 46 - 1200 |                            |
|                        | Mobil                   | Glygoyle Grease 00       |                            |
|                        | Shell                   | Shell Tivela GL 00       |                            |
|                        | TEXACO                  | Multifak 6833 EP 00      |                            |
|                        | Total                   | Marson SY 00             |                            |

**7541 NLGI 000-0**

Grease. Low viscosity (SEW)

|                             |     |                              |          |
|-----------------------------|-----|------------------------------|----------|
| <u>Designation acc. to:</u> |     | <u>Requirements acc. to:</u> |          |
| DIN                         | : - | DIN                          | : 51 818 |
| ISO                         | : - | ISO                          | : -      |
| ANSI_AGMA                   | : - | ANSI_AGMA                    | : -      |

- 18 **Special condition** Lubrication for SEW gear type R32 and R302. - See operating instruction SEW chapter 9 lubrication.

| <b>Special product</b> | <b>Oil company name</b> | <b>Product name</b> | <b>Comments on product</b> |
|------------------------|-------------------------|---------------------|----------------------------|
|                        | ARAL                    | Aralub MFL 00       |                            |
|                        | BP                      | Energrease LS-EP 00 |                            |
|                        | Castrol Performance-BP  | Longtime PD 00      |                            |
|                        | Fuchs Lubritech         | Renolin SF 7 - 041  |                            |
|                        | Mobil                   | Mobilux EP 004      |                            |
|                        | Shell                   | Shell Alvania GL 00 |                            |
|                        | TEXACO                  | Multifak EP 000     |                            |
|                        | Total                   | MULTIS EP 00        |                            |

**Anti-friction lubricant, live ring**

- 19 **General application** An anti-seize product used during operation of heavy loaded bearings and moving parts with low speed and intermittent movements.
- 25 **Property** The lubricant consists of synthetic oil with solid lubricants added. The 7555 products are preferably pasty in consistency. The 7557 products are preferably liquid in consistency.
- 9 **General requirement** This product must protect metal parts under boundary lubrication conditions where high temperatures, high pressures and corrosion may occur.

**7555 ISO VG**

Anti-friction lubricant, live ring

|                             |              |                              |     |
|-----------------------------|--------------|------------------------------|-----|
| <u>Designation acc. to:</u> |              | <u>Requirements acc. to:</u> |     |
| DIN                         | : 51 502, OG | DIN                          | : - |
| ISO                         | : -          | ISO                          | : - |
| ANSI_AGMA                   | : -          | ANSI_AGMA                    | : - |

- 9 **Special condition** Special products recommended to heavy loaded bearings and moving parts. Low speed and intermittent movement. - Other products than those mentioned under 7555 and 7557 have either shown insufficient lubrication property or have never been tested.

| <u>Special product</u>      | <u>Oil company name</u>   | <u>Product name</u>  | <u>Comments on product</u>            |
|-----------------------------|---|--|---------------------------------------|
|                             | A.W.Chesterton Co<br>Achesons Industries<br>Bostic<br>Carl Bechem, GmbH<br>Fuchs Lubritech<br>Fuchs Lubritech<br>Klüber Lubrication   | 785 Parting Lubricant<br>Achesons Industries, Oildag EU<br>Bostic, Never Seez, Regular grade<br>Berulub VPN 13<br>KS Paul Products, PBC<br>Gleitmo 160 Neu<br>Wolfracoat C | (Poly Butyl Cuprysil)                 |
| <b>7557 ISO VG</b>          |   |  | Anti-friction lubricant, live ring    |
| <u>Designation acc. to:</u> |   | <u>Requirements acc. to:</u>   |                                       |
| DIN                         | : 51 502, OG  | DIN  | : -                                   |
| ISO                         | : -   | ISO  | : -                                   |
| ANSI_AGMA                   | : -   | ANSI_AGMA  | : -                                   |
| 9                           | <b><u>Special condition</u></b> Special products recommended to heavy loaded bearings and moving parts. Low speed and intermittent movement. - Other products than those mentioned under 7555 and 7557 have either shown insufficient lubrication property or have never been tested. |  |                                       |
| <u>Special product</u>      | <u>Oil company name</u>   | <u>Product name</u>  | <u>Comments on product</u>            |
|                             | A.W.Chesterton Co<br>Achesons Industries<br>Carl Bechem, GmbH<br>Fuchs Lubritech<br>Klüber Lubrication  | 785 Parting Lubricant<br>Achesons Industries, Oildag 2762<br>Berulub VPN 13 Ringlub<br>Ceplattyn HT<br>Wolfracoat C Fluid  | Service temperature -30°C to +1150 °C |

**End note 15.** (Source: BA 7300 EN 12.08)

For its gear units, FLENDER approves only CLP quality oils which contain constituents to DIN 515173 for improvement of corrosion prevention and resistance to ageing and which reduce wear in mixed-friction areas. The scuffing resistance in the FZG test to DIN ISO 146351 must comply with stage 12 or higher under A/8,3/90 test conditions. In the FE8 rolling bearing test to DIN 518193 rolling element wear must be < 30 mg and cage wear < 100 mg under D7,5/8080 test conditions.

- Sufficiently high grey-staining resistance in accordance with FVA 54 grey-staining test:
  - a) For helical-gear, bevel-gear and planetary-gear units in table A, GS-criteria stage 10 or higher applies, and high grey-staining resistance GST = high.
- Low degree of foaming with less than 15 % foam formation in the FLENDER foam test.
- Compatibility with elastomer materials of the radial shaft-sealing rings applied in FLENDER gear units.
- Compatibility with residues of corrosion-protection agent and run-in oils used by FLENDER.
- Compatibility with the paints used by FLENDER in its gear-unit interiors.
- Compatibility with liquid seals between bolted-joint surfaces.

**End note 23.**

The oil is made of polyalphaolefin and must contain additives to prevent corrosion and foaming and have anti-wear and/or extreme pressure properties. Polyalphaolefins are highly resistant to oxidation and vary less in viscosity with temperature than a mineral oil. Besides they are liquid at temperatures below -40 °C and less evaporable at high operating temperature (air compressor). Polyalphaolefins are fully mixable with mineral oil and do not attack packings.

**End note 2.**

Polyglycol oil contains additives to prevent corrosion and foaming and has anti-wear and/or extreme pressure properties.

PG oil is resistant to oxidation and varies less in viscosity with temperature than mineral oil and polyalphaolefin oil.

PG oil CANNOT be mixed with mineral oil and dissolves many types of paint.

PG oil does not dissolve two-component paint, e.g. epoxy polyamide.

## 6.3 Appendix 2. Key to oil company products

### A.W.Chesteron Co

| <u>Product name</u>   | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                |
|-----------------------|----------------|------------------------|------------------|---|
| 785 Parting Lubricant | Special lub.   | ISO VG                 | 7555             | 7555 Anti-friction lubricant, live ring |
| 785 Parting Lubricant | Special lub.   | ISO VG                 | 7557             | 7555 Anti-friction lubricant, live ring |

### Achesons Industries

| <u>Product name</u>              | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                |
|----------------------------------|----------------|------------------------|------------------|---|
| Achesons Industries, Oildag 2762 | Special lub.   | ISO VG                 | 7557             | 7555 Anti-friction lubricant, live ring |
| Achesons Industries, Oildag EU   | Special lub.   | ISO VG                 | 7555             | 7555 Anti-friction lubricant, live ring |

### ARAL

| <u>Product name</u> | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                       |
|---------------------|----------------|------------------------|------------------|--|
| Aral Degol BG 100   | Special lub.   | ISO VG 100 - 150       | 7141             | 7141 Enclosed Gear Unit oil (SEW)              |
| Aral Degol BG 150   | Special lub.   | ISO VG 150             | 7148             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)   |
| Aral Degol BG 220   | Special lub.   | ISO VG 220             | 7143             | 7141 Enclosed Gear Unit oil (SEW)              |
| Aral Degol BG 220   | Special lub.   | ISO VG 220             | 7149             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)   |
| Aral Degol BG 32    | Special lub.   | ISO VG 32              | 7020             | 7019 Hydraulic oil, HM (Flender FLUDEX)        |
| Aral Degol BG 320   | Special lub.   | ISO VG 320             | 7150             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)   |
| Aral Degol BG 46    | Special lub.   | ISO VG 32 - 46 - 68    | 7006             | 7005 Hydraulic oil HM. (SEW)                   |
| Aral Degol BG 460   | Special lub.   | ISO VG 460             | 7151             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)   |
| Aral Degol BG 680   | Special lub.   | ISO VG 680             | 7146             | 7141 Enclosed Gear Unit oil (SEW)              |
| Aral Degol GS 220   | Special lub.   | ISO VG 220             | 7383             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Aral Degol GS 320   | Special lub.   | ISO VG 320             | 7384             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Aral Degol GS 460   | Special lub.   | ISO VG 460             | 7385             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Aral Degol GS 680   | Special lub.   | ISO VG 680             | 7386             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Aral Degol PAS 220  | Special lub.   | ISO VG 220             | 7333             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW) |
| Aral Vitram GF 22   | Special lub.   | ISO VG 22              | 7019             | 7019 Hydraulic oil, HM (Flender FLUDEX)        |
| Aral Vitram GF 32   | Special lub.   | ISO VG 32              | 7020             | 7019 Hydraulic oil, HM (Flender FLUDEX)        |
| Aralub MFL 00       | Special lub.   | NLGI 000-0             | 7541             | 7540 Grease. Low viscosity (SEW)               |
| Degol GS 1000       | Special lub.   | ISO VG 1000            | 7406             | 7390 Synthetic oil, Polyglycol (PG, Flender)   |

### Bostic

| <u>Product name</u>               | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                |
|-----------------------------------|----------------|------------------------|------------------|---|
| Bostic, Never Seez, Regular grade | Special lub.   | ISO VG                 | 7555             | 7555 Anti-friction lubricant, live ring |

### BP

| <u>Product name</u> | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                           |
|---------------------|----------------|------------------------|------------------|--|
| Energol GR-XF 150   | Special lub.   | ISO VG 150             | 7163             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Energol GR-XF 220   | Special lub.   | ISO VG 220             | 7164             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Energol GR-XF 320   | Special lub.   | ISO VG 320             | 7165             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Energol GR-XF 460   | Special lub.   | ISO VG 460             | 7166             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Energol GR-XF 680   | Special lub.   | ISO VG 680             | 7167             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Energol GR-XP 100   | Special lub.   | ISO VG 100 - 150       | 7141             | 7141 Enclosed Gear Unit oil (SEW)                  |
| Energol GR-XP 1000  | Special lub.   | ISO VG 1000            | 7168             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Energol GR-XP 220   | Special lub.   | ISO VG 220             | 7143             | 7141 Enclosed Gear Unit oil (SEW)                  |
| Energol GR-XP 680   | Special lub.   | ISO VG 680             | 7146             | 7141 Enclosed Gear Unit oil (SEW)                  |
| Energol HLP-HM 15   | Special lub.   | ISO VG 15 - 22         | 7005             | 7005 Hydraulic oil HM. (SEW)                       |
| Energol HLP-HM 22   | -              | ISO VG 22              | 7023             | 7021 Hydraulic oil, HM                             |
| Energol HLP-HM 22   | Special lub.   | ISO VG 22              | 7019             | 7019 Hydraulic oil, HM (Flender FLUDEX)            |
| Energol HLP-HM 32   | -              | ISO VG 32              | 7024             | 7021 Hydraulic oil, HM                             |
| Energol HLP-HM 32   | Special lub.   | ISO VG 32              | 7020             | 7019 Hydraulic oil, HM (Flender FLUDEX)            |
| Energol HLP-HM 32   | Special lub.   | ISO VG 32              | 7018             | 7018 Hydraulic, HM. Low temperature                |
| Energol HLP-HM 46   | -              | ISO VG 46              | 7025             | 7021 Hydraulic oil, HM                             |
| Energol HLP-HM 68   | -              | ISO VG 68              | 7026             | 7021 Hydraulic oil, HM                             |
| Energol RC - R 68   | -              | ISO VG 68              | 7034             | 7035 Compressor oil, mineral                       |
| Energol THB 68      | -              | ISO VG 68              | 7034             | 7035 Compressor oil, mineral                       |
| Energol LS-EP 00    | Special lub.   | NLGI 000-0             | 7541             | 7540 Grease. Low viscosity (SEW)                   |
| Enersyn EP-XF 100   | Special lub.   | ISO VG 100             | 7301             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Enersyn EP-XF 150   | Special lub.   | ISO VG 150             | 7302             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Enersyn EP-XF 220   | Special lub.   | ISO VG 220             | 7303             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Enersyn EP-XF 320   | Special lub.   | ISO VG 320             | 7304             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Enersyn EP-XF 460   | Special lub.   | ISO VG 460             | 7305             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Enersyn SG-XP 100   | Special lub.   | ISO VG 100             | 7390             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Enersyn SG-XP 150   | Special lub.   | ISO VG 150             | 7391             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Enersyn SG-XP 220   | Special lub.   | ISO VG 220             | 7392             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Enersyn SG-XP 320   | Special lub.   | ISO VG 320             | 7393             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Enersyn SG-XP 460   | Special lub.   | ISO VG 460             | 7394             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Enersyn SG-XP 680   | Special lub.   | ISO VG 680             | 7395             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Enersyn SG-XP 680   | Special lub.   | ISO VG 680             | 7376             | 7373 Synthetic oil, Polyglycol (PG, SEW)           |



## Brugarolas

| <u>Product name</u>   | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                           |
|-----------------------|----------------|------------------------|------------------|--|
| Beslux Airlube 100    | -              | ISO VG 100             | 7036             | 7035 Compressor oil, mineral                       |
| Beslux Airlube 32     | -              | ISO VG 32              | 7053             | 7053 Turbine oil                                   |
| Beslux Airlube 46     | -              | ISO VG 46              | 7054             | 7053 Turbine oil                                   |
| Beslux Airlube 68     | -              | ISO VG 68              | 7055             | 7053 Turbine oil                                   |
| Beslux Airlube 68     | -              | ISO VG 68              | 7034             | 7035 Compressor oil, mineral                       |
| Beslux Gear 150       | -              | ISO VG 150             | 7123             | 7123 Oil for rotary blower                         |
| Beslux Gear 220       | -              | ISO VG 220             | 7124             | 7123 Oil for rotary blower                         |
| Beslux Gear XP 1000   | Special lub.   | ISO VG 1000            | 7168             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Beslux Gear XP 220    | Special lub.   | ISO VG 220             | 7164             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Beslux Gear XP 320    | Special lub.   | ISO VG 320             | 7165             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Beslux Gear XP 460    | Special lub.   | ISO VG 460             | 7166             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Beslux Gear XP 680    | Special lub.   | ISO VG 680             | 7167             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Beslux Gearsint 1000  | Special lub.   | ISO VG 1000            | 7307             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Beslux Gearsint 150   | -              | ISO VG 150             | 7345             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Beslux Gearsint 150   | Special lub.   | ISO VG 150             | 7302             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Beslux Gearsint 220   | Special lub.   | ISO VG 220             | 7303             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Beslux Gearsint 320   | Special lub.   | ISO VG 320             | 7304             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Beslux Gearsint 460   | -              | ISO VG 460             | 7348             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Beslux Gearsint 680   | Special lub.   | ISO VG 680             | 7306             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Beslux Neulub 32      | -              | ISO VG 32              | 7114             | 7114 Oil for pneumatic tool                        |
| Beslux Neulub 46      | -              | ISO VG 46              | 7115             | 7114 Oil for pneumatic tool                        |
| Beslux Sincart 1000-W | Special lub.   | ISO VG 1000            | 7396             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Beslux Sincart 150-W  | Special lub.   | ISO VG 150             | 7391             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Beslux Sincart 150-W  | -              | ISO VG 150             | 7353             | 7353 Synthetic oil, Polyglycol (PG)                |
| Beslux Sincart 220-W  | Special lub.   | ISO VG 220             | 7392             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Beslux Sincart 220-W  | -              | ISO VG 220             | 7354             | 7353 Synthetic oil, Polyglycol (PG)                |
| Beslux Sincart 320-W  | Special lub.   | ISO VG 320             | 7393             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Beslux Sincart 320-W  | -              | ISO VG 320             | 7355             | 7353 Synthetic oil, Polyglycol (PG)                |
| Beslux Sincart 460-W  | Special lub.   | ISO VG 460             | 7394             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Beslux Sincart 460-W  | -              | ISO VG 460             | 7356             | 7353 Synthetic oil, Polyglycol (PG)                |
| Beslux Sincart 680-W  | -              | ISO VG 680             | 7357             | 7353 Synthetic oil, Polyglycol (PG)                |
| Beslux Sincart 680-W  | Special lub.   | ISO VG 680             | 7395             | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Beslux Skydow NH-36   | -              | ISO VG 32              | 7341             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Beslux Term           | -              | ISO VG 32              | 7175             | 7175 Heat transfer oil                             |
| Beslux Ultrasint 46   | -              | ISO VG 46              | 7342             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Bradol Truck 15W-40   | -              | SAE 15W-40             | 7235             | 7234 Engine oil                                    |
| Extra Gear 100        | -              | ISO VG 100             | 7152             | 7152 Enclosed Gear Unit oil                        |
| Extra Gear 1000       | -              | ISO VG 1000            | 7158             | 7152 Enclosed Gear Unit oil                        |
| Extra Gear 150        | -              | ISO VG 150             | 7153             | 7152 Enclosed Gear Unit oil                        |
| Extra Gear 220        | -              | ISO VG 220             | 7154             | 7152 Enclosed Gear Unit oil                        |
| Extra Gear 320        | -              | ISO VG 320             | 7155             | 7152 Enclosed Gear Unit oil                        |
| Extra Gear 460        | -              | ISO VG 460             | 7156             | 7152 Enclosed Gear Unit oil                        |
| Extra Gear 680        | -              | ISO VG 680             | 7157             | 7152 Enclosed Gear Unit oil                        |
| Fluid Drive HM-32     | -              | ISO VG 32              | 7024             | 7021 Hydraulic oil, HM                             |
| Fluid Drive HM-46     | -              | ISO VG 46              | 7025             | 7021 Hydraulic oil, HM                             |
| Fluid Drive HM-68     | -              | ISO VG 68              | 7026             | 7021 Hydraulic oil, HM                             |
| G. A. Plex-2          | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose                          |
| G. Beslux Crown H-1/R | -              | ISO VG                 | 7265             | 7265 Hand lubricant, open gear unit                |
| G. Beslux KBL         | -              | ISO VG                 | 7285             | 7285 Wire lubricant                                |
| G. Beslux Plex 735    | -              | NLGI 2                 | 7435             | 7434 Grease, Low-temperature                       |
| G. Beslux Plex EH-2/G | -              | NLGI 1 or 2            | 7455             | 7455 Grease, Low-speed                             |
| G. Beslux VHT/S       | -              | NLGI 2                 | 7445             | 7445 Grease, High-temperature                      |
| Hidraulic B-22        | -              | ISO VG 22              | 7215             | 7215 Flushing oil                                  |
| Lectroil              | -              | ISO VG 7 / 10          | 7195             | 7195 Transformer oil                               |
| Vulcasan 222          | -              | ISO VG 1000            | 7136             | 7134 Cylinder oil                                  |
| Vulcasan BS           | -              | ISO VG 460             | 7134             | 7134 Cylinder oil                                  |

## Caltex

| <u>Product name</u>        | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                       |
|----------------------------|----------------|------------------------|------------------|--|
| Aries 46                   | -              | ISO VG 46              | 7115             | 7114 Oil for pneumatic tool                    |
| Crater Fluid M             | -              | ISO VG                 | 7285             | 7285 Wire lubricant                            |
| Delo Multigrade SAE 15W-40 | -              | SAE 15W-40             | 7235             | 7234 Engine oil                                |
| Meropa 100                 | -              | ISO VG 100             | 7152             | 7152 Enclosed Gear Unit oil                    |
| Meropa 1000                | -              | ISO VG 1000            | 7158             | 7152 Enclosed Gear Unit oil                    |
| Meropa 150                 | Special lub.   | ISO VG 150             | 7148             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)   |
| Meropa 150                 | Special lub.   | ISO VG 100 - 150       | 7141             | 7141 Enclosed Gear Unit oil (SEW)              |
| Meropa 150                 | -              | ISO VG 150             | 7153             | 7152 Enclosed Gear Unit oil                    |
| Meropa 150                 | -              | ISO VG 150             | 7123             | 7123 Oil for rotary blower                     |
| Meropa 220                 | -              | ISO VG 220             | 7124             | 7123 Oil for rotary blower                     |
| Meropa 220                 | Special lub.   | ISO VG 220             | 7149             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)   |
| Meropa 220                 | -              | ISO VG 220             | 7154             | 7152 Enclosed Gear Unit oil                    |
| Meropa 220                 | Special lub.   | ISO VG 220             | 7143             | 7141 Enclosed Gear Unit oil (SEW)              |
| Meropa 320                 | Special lub.   | ISO VG 320             | 7150             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)   |
| Meropa 320                 | -              | ISO VG 320             | 7155             | 7152 Enclosed Gear Unit oil                    |
| Meropa 460                 | Special lub.   | ISO VG 460             | 7151             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)   |
| Meropa 460                 | -              | ISO VG 460             | 7156             | 7152 Enclosed Gear Unit oil                    |
| Meropa 680                 | -              | ISO VG 680             | 7157             | 7152 Enclosed Gear Unit oil                    |
| Meropa 680                 | Special lub.   | ISO VG 680             | 7146             | 7141 Enclosed Gear Unit oil (SEW)              |
| Multifak EP 2              | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose                      |
| Pinnacle EP 150            | Special lub.   | ISO VG 150             | 7332             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW) |
| Pinnacle EP 150            | -              | ISO VG 150             | 7345             | 7341 Synthetic oil, Polyalphaolefin (PAO)      |
| Pinnacle EP 220            | Special lub.   | ISO VG 220             | 7333             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW) |
| Pinnacle EP 220            | -              | ISO VG 220             | 7346             | 7341 Synthetic oil, Polyalphaolefin (PAO)      |
| Pinnacle EP 320            | -              | ISO VG 320             | 7347             | 7341 Synthetic oil, Polyalphaolefin (PAO)      |
| Pinnacle EP 460            | -              | ISO VG 460             | 7348             | 7341 Synthetic oil, Polyalphaolefin (PAO)      |
| Pinnacle EP 460            | Special lub.   | ISO VG 460             | 7335             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW) |
| Pinnacle EP 680            | -              | ISO VG 680             | 7349             | 7341 Synthetic oil, Polyalphaolefin (PAO)      |
| Rando 22                   | -              | ISO VG 22              | 7215             | 7215 Flushing oil                              |

|                               |              |                |      |                                     |
|-------------------------------|--------------|----------------|------|-------------------------------------|
| Rando HD 22                   | -            | ISO VG 22      | 7215 | 7215 Flushing oil                   |
| Rando HD 32                   | -            | ISO VG 32      | 7024 | 7021 Hydraulic oil, HM              |
| Rando HD 46                   | -            | ISO VG 46      | 7025 | 7021 Hydraulic oil, HM              |
| Rando HD 68                   | -            | ISO VG 68      | 7026 | 7021 Hydraulic oil, HM              |
| Rando HDZ 15                  | Special lub. | ISO VG 15 - 22 | 7005 | 7005 Hydraulic oil HM. (SEW)        |
| Rando HDZ 15                  | -            | ISO VG 15      | 7013 | 7012 Hydraulic oil, HV              |
| Regal EP 32                   | -            | ISO VG 32      | 7053 | 7053 Turbine oil                    |
| Regal EP 46                   | -            | ISO VG 46      | 7054 | 7053 Turbine oil                    |
| Regal EP 68                   | -            | ISO VG 68      | 7055 | 7053 Turbine oil                    |
| Regal R&O 32                  | -            | ISO VG 32      | 7053 | 7053 Turbine oil                    |
| Regal R&O 46                  | -            | ISO VG 46      | 7054 | 7053 Turbine oil                    |
| Regal R&O 68                  | -            | ISO VG 68      | 7055 | 7053 Turbine oil                    |
| RPM Compressor Oil 100        | -            | ISO VG 100     | 7036 | 7035 Compressor oil, mineral        |
| RPM Compressor Oil 68         | -            | ISO VG 68      | 7034 | 7035 Compressor oil, mineral        |
| Starplex 2                    | -            | NLGI 2         | 7425 | 7425 Grease, Multipurpose           |
| Synlube CLP 150               | -            | ISO VG 150     | 7353 | 7353 Synthetic oil, Polyglycol (PG) |
| Synlube CLP 320               | -            | ISO VG 320     | 7355 | 7353 Synthetic oil, Polyglycol (PG) |
| Synlube CLP 460               | -            | ISO VG 460     | 7356 | 7353 Synthetic oil, Polyglycol (PG) |
| Texatherm 32                  | -            | ISO VG 32      | 7175 | 7175 Heat transfer oil              |
| Texatherm HT 22               | -            | ISO VG 32      | 7175 | 7175 Heat transfer oil              |
| Thermatex EP 2                | -            | NLGI 2         | 7445 | 7445 Grease, High-temperature       |
| Transformer Oil BSI           | -            | ISO VG 7 / 10  | 7195 | 7195 Transformer oil                |
| Transformer Oil BSI Inhibited | -            | ISO VG 7 / 10  | 7195 | 7195 Transformer oil                |
| Ultra-Plex Synthetic EP       | -            | NLGI 2         | 7445 | 7445 Grease, High-temperature       |
| Ultra-Plex Synthetic EP       | -            | NLGI 2         | 7435 | 7434 Grease, Low-temperature        |
| Ultra-Duty Grease 2           | -            | NLGI 1 or 2    | 7455 | 7455 Grease, Low-speed              |
| Vanguard 1000                 | -            | ISO VG 1000    | 7136 | 7134 Cylinder oil                   |
| Vanguard 460                  | -            | ISO VG 460     | 7134 | 7134 Cylinder oil                   |
| Way Lubricant 220             | -            | ISO VG         | 7265 | 7265 Hand lubricant, open gear unit |

## Carl Bechem, GmbH

| <u>Product name</u>                     | <u>Special</u> | <u>Standard ISO VG</u>           | <u>Mat. code</u> | <u>Type of lubricant</u>                               |
|---|----------------|----------------------------------|------------------|--|
| BECHEM OVITOL KT 150 S                  | -              | ISO VG 150                       | 7123             | 7123 Oil for rotary blower                             |
| BECHEM OVITOL KT 220 S                  | -              | ISO VG 220                       | 7124             | 7123 Oil for rotary blower                             |
| Bechem Seilstar                         | -              | ISO VG                           | 7285             | 7285 Wire lubricant                                    |
| Bechem Staroil G 100                    | -              | ISO VG 100                       | 7152             | 7152 Enclosed Gear Unit oil                            |
| Bechem Staroil G 1000                   | -              | ISO VG 1000                      | 7158             | 7152 Enclosed Gear Unit oil                            |
| Bechem Staroil G 150                    | -              | ISO VG 150                       | 7153             | 7152 Enclosed Gear Unit oil                            |
| Bechem Staroil G 220                    | -              | ISO VG 220                       | 7154             | 7152 Enclosed Gear Unit oil                            |
| Bechem Staroil G 320                    | -              | ISO VG 320                       | 7155             | 7152 Enclosed Gear Unit oil                            |
| Bechem Staroil G 460                    | -              | ISO VG 460                       | 7156             | 7152 Enclosed Gear Unit oil                            |
| Bechem Staroil G 680                    | -              | ISO VG 680                       | 7157             | 7152 Enclosed Gear Unit oil                            |
| BECHEM STAROIL LTD 46                   | -              | ISO VG 46                        | 7054             | 7053 Turbine oil                                       |
| Bechem Staroil LV 100                   | -              | ISO VG 100                       | 7036             | 7035 Compressor oil, mineral                           |
| Bechem Staroil Multigrade S 3 HD 15W/40 | -              | SAE 15W-40                       | 7235             | 7234 Engine oil  |
| Bechem Staroil No. 32                   | -              | ISO VG 32                        | 7024             | 7021 Hydraulic oil, HM                                 |
| Bechem Staroil No. 46                   | -              | ISO VG 46                        | 7025             | 7021 Hydraulic oil, HM                                 |
| Bechem Staroil No. 68                   | -              | ISO VG 68                        | 7026             | 7021 Hydraulic oil, HM                                 |
| Bechem staroil Nr. 10                   | -              | ISO VG 10                        | 7021             | 7021 Hydraulic oil, HM                                 |
| Bechem staroil Nr. 100                  | -              | ISO VG 100                       | 7027             | 7021 Hydraulic oil, HM                                 |
| Bechem staroil Nr. 22                   | -              | ISO VG 22                        | 7023             | 7021 Hydraulic oil, HM                                 |
| Bechem staroil Nr. 22                   | -              | ISO VG 22                        | 7215             | 7215 Flushing oil                                      |
| Bechem Staroil Synergie Alpha 5W-40     | -              | SAE 0W-40/5W-40. Full synthetic. | 7234             | 7234 Engine oil  |
| Bechem Therm B ISO VG 32                | -              | ISO VG 32                        | 7175             | 7175 Heat transfer oil                                 |
| Bechem Transformatorenöl T10            | -              | ISO VG 7 / 10                    | 7195             | 7195 Transformer oil                                   |
| Berugear GS 100 BM                      | -              | ISO VG 100                       | 7152             | 7152 Enclosed Gear Unit oil                            |
| Berugear GS 1000 BM                     | -              | ISO VG 1000                      | 7158             | 7152 Enclosed Gear Unit oil                            |
| Berugear GS 150 BM                      | -              | ISO VG 150                       | 7153             | 7152 Enclosed Gear Unit oil                            |
| Berugear GS 220 BM                      | -              | ISO VG 220                       | 7154             | 7152 Enclosed Gear Unit oil                            |
| Berugear GS 320 BM                      | -              | ISO VG 320                       | 7155             | 7152 Enclosed Gear Unit oil                            |
| Berugear GS 460 BM                      | -              | ISO VG 460                       | 7156             | 7152 Enclosed Gear Unit oil                            |
| Berugear GS 680 BM                      | -              | ISO VG 680                       | 7157             | 7152 Enclosed Gear Unit oil                            |
| Berulit 443                             | Special lub.   | NLGI 1                           | 7523             | 7523 Kiln and mill gear units spray lubricant          |
| Berulit EL 420                          | Special lub.   | NLGI 0 / 00                      | 7525             | 7523 Kiln and mill gear units spray lubricant          |
| Berulit EL 420 Fluid                    | Special lub.   | ISO VG                           | 7256             | 7253 Kiln and mill gear units lubricant                |
| Berulit GA 2500                         | Special lub.   | NLGI 0 / 00                      | 7531             | 7523 Kiln and mill gear units spray lubricant          |
| Berulit GA 2500                         | -              | ISO VG                           | 7265             | 7265 Hand lubricant, open gear unit                    |
| Berulit GA 2500 Fluid                   | Special lub.   | ISO VG                           | 7257             | 7253 Kiln and mill gear units lubricant                |
| Berulit GA 400                          | Special lub.   | NLGI 0 / 00                      | 7527             | 7523 Kiln and mill gear units spray lubricant          |
| Berulit GA 443                          | -              | ISO VG                           | 7265             | 7265 Hand lubricant, open gear unit                    |
| Berulit GA 800                          | Special lub.   | NLGI 0 / 00                      | 7529             | 7523 Kiln and mill gear units spray lubricant          |
| Berulit WR 400                          | -              | ISO VG                           | 7285             | 7285 Wire lubricant                                    |
| Berulub VPN 13                          | Special lub.   | ISO VG                           | 7555             | 7555 Anti-friction lubricant, live ring                |
| Berulub VPN 13 Ringlub                  | Special lub.   | ISO VG                           | 7557             | 7555 Anti-friction lubricant, live ring                |
| Berუსynth 46 H1                         | -              | ISO VG 46                        | 7033             | 7032 Compressor oil, synthetic                         |
| Berूसynth 46 H1                         | -              | ISO VG 46                        | 7342             | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Berूसynth EP 100                        | Special lub.   | ISO VG 100                       | 7390             | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Berूसynth EP 100                        | Special lub.   | ISO VG 100                       | 7308             | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Berूसynth EP 1000                       | -              | ISO VG 1000                      | 7358             | 7353 Synthetic oil, Polyglycol (PG)                    |
| Berूसynth EP 150                        | Special lub.   | ISO VG 150                       | 7391             | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Berूसynth EP 150                        | -              | ISO VG 150                       | 7353             | 7353 Synthetic oil, Polyglycol (PG)                    |
| Berूसynth EP 150                        | Special lub.   | ISO VG 150                       | 7309             | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Berूसynth EP 220                        | Special lub.   | ISO VG 220                       | 7310             | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Berूसynth EP 220                        | Special lub.   | ISO VG 220                       | 7392             | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Berूसynth EP 220                        | -              | ISO VG 220                       | 7354             | 7353 Synthetic oil, Polyglycol (PG)                    |
| Berूसynth EP 320                        | Special lub.   | ISO VG 320                       | 7393             | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Berूसynth EP 320                        | -              | ISO VG 320                       | 7355             | 7353 Synthetic oil, Polyglycol (PG)                    |
| Berूसynth EP 320                        | Special lub.   | ISO VG 320                       | 7311             | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Berूसynth EP 460                        | Special lub.   | ISO VG 460                       | 7394             | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Berूसynth EP 460                        | Special lub.   | ISO VG 460                       | 7312             | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Berूसynth EP 460                        | -              | ISO VG 460                       | 7356             | 7353 Synthetic oil, Polyglycol (PG)                    |
| Berूसynth EP 680                        | -              | ISO VG 680                       | 7357             | 7353 Synthetic oil, Polyglycol (PG)                    |

|                     |              |             |      |  |
|---------------------|--------------|-------------|------|--|
| Berusynth EP 680    | Special lub. | ISO VG 680  | 7313 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Berusynth EP 680    | Special lub. | ISO VG 680  | 7395 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| BERUSYNTH FG-H 46   | -            | ISO VG 46   | 7342 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Berusynth GP 100    | -            | ISO VG 100  | 7344 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Berusynth GP 1000   | Special lub. | ISO VG 1000 | 7350 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Berusynth GP 150    | -            | ISO VG 150  | 7345 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Berusynth GP 220    | -            | ISO VG 220  | 7346 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Berusynth GP 320    | -            | ISO VG 320  | 7347 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Berusynth GP 460    | -            | ISO VG 460  | 7348 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Berusynth GP 68     | -            | ISO VG 68   | 7343 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Berusynth GP 680    | -            | ISO VG 680  | 7349 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Berutox FH 28 EPK 2 | -            | NLGI 2      | 7457 | 7455 Grease, Low-speed                                 |
| Berutox FH 28 KN    | -            | NLGI 2      | 7445 | 7445 Grease, High-temperature                          |
| Berutox M 21 KN     | -            | NLGI 2      | 7445 | 7445 Grease, High-temperature                          |
| HIGH LUB L 474      | -            | NLGI 2      | 7425 | 7425 Grease, Multipurpose                              |
| HIGH LUB LM 2 EP    | -            | NLGI 2      | 7435 | 7434 Grease, Low-temperature                           |
| HIGH LUB LT 2 EP    | -            | NLGI 2      | 7425 | 7425 Grease, Multipurpose                              |
| High-Lub FA 50 MO   | -            | NLGI 1 or 2 | 7455 | 7455 Grease, Low-speed                                 |
| HIGH-LUB L 3        | -            | NLGI 3      | 7426 | 7425 Grease, Multipurpose                              |
| High-Lub L1 EP      | -            | NLGI 1      | 7434 | 7434 Grease, Low-temperature                           |
| High-Lub LM 2 EP    | -            | NLGI 2      | 7435 | 7434 Grease, Low-temperature                           |

## Castrol Classic

| <u>Product name</u>   | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                      |
|-----------------------|----------------|------------------------|------------------|---|
| Aircol PD 100         | -              | ISO VG 100             | 7036             | 7035 Compressor oil, mineral                  |
| Aircol PD 68          | -              | ISO VG 68              | 7034             | 7035 Compressor oil, mineral                  |
| Alpha SP 100          | -              | ISO VG 100             | 7152             | 7152 Enclosed Gear Unit oil                   |
| Alpha SP 100          | Special lub.   | ISO VG 100             | 7162             | 7162 Enclosed Gear Unit mineral oil (Flender) |
| Alpha SP 1000         | -              | ISO VG 1000            | 7158             | 7152 Enclosed Gear Unit oil                   |
| Alpha SP 1000         | Special lub.   | ISO VG 1000            | 7168             | 7162 Enclosed Gear Unit mineral oil (Flender) |
| Alpha SP 150          | -              | ISO VG 150             | 7153             | 7152 Enclosed Gear Unit oil                   |
| Alpha SP 150          | Special lub.   | ISO VG 150             | 7163             | 7162 Enclosed Gear Unit mineral oil (Flender) |
| Alpha SP 150          | -              | ISO VG 150             | 7123             | 7123 Oil for rotary blower                    |
| Alpha SP 220          | Special lub.   | ISO VG 220             | 7164             | 7162 Enclosed Gear Unit mineral oil (Flender) |
| Alpha SP 220          | -              | ISO VG 220             | 7154             | 7152 Enclosed Gear Unit oil                   |
| Alpha SP 220          | -              | ISO VG 220             | 7124             | 7123 Oil for rotary blower                    |
| Alpha SP 320          | Special lub.   | ISO VG 320             | 7165             | 7162 Enclosed Gear Unit mineral oil (Flender) |
| Alpha SP 320          | -              | ISO VG 320             | 7155             | 7152 Enclosed Gear Unit oil                   |
| Alpha SP 460          | Special lub.   | ISO VG 460             | 7166             | 7162 Enclosed Gear Unit mineral oil (Flender) |
| Alpha SP 460          | -              | ISO VG 460             | 7156             | 7152 Enclosed Gear Unit oil                   |
| Alpha SP 680          | -              | ISO VG 680             | 7157             | 7152 Enclosed Gear Unit oil                   |
| Alpha SP 680          | Special lub.   | ISO VG 680             | 7167             | 7162 Enclosed Gear Unit mineral oil (Flender) |
| Alphasyn PG 150       | -              | ISO VG 150             | 7353             | 7353 Synthetic oil, Polyglycol (PG)           |
| Alphasyn PG 220       | -              | ISO VG 220             | 7354             | 7353 Synthetic oil, Polyglycol (PG)           |
| Alphasyn PG 320       | -              | ISO VG 320             | 7355             | 7353 Synthetic oil, Polyglycol (PG)           |
| Alphasyn PG 460       | -              | ISO VG 460             | 7356             | 7353 Synthetic oil, Polyglycol (PG)           |
| Alphasyn T 150        | -              | ISO VG 150             | 7345             | 7341 Synthetic oil, Polyalphaolefin (PAO)     |
| Castrol LMX           | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose                     |
| Castrol S             | -              | NLGI 2                 | 7435             | 7434 Grease, Low-temperature                  |
| Cresta SHS            | -              | ISO VG 1000            | 7136             | 7134 Cylinder oil                             |
| Hyspin AWH-M 15       | -              | ISO VG 15              | 7013             | 7012 Hydraulic oil, HV                        |
| Hyspin AWS 10         | -              | ISO VG 10              | 7012             | 7012 Hydraulic oil, HV                        |
| Hyspin AWS 22         | -              | ISO VG 22              | 7215             | 7215 Flushing oil                             |
| Hyspin AWS 22         | -              | ISO VG 22              | 7023             | 7021 Hydraulic oil, HM                        |
| Hyspin AWS 32         | -              | ISO VG 32              | 7024             | 7021 Hydraulic oil, HM                        |
| Hyspin AWS 46         | -              | ISO VG 46              | 7025             | 7021 Hydraulic oil, HM                        |
| Hyspin AWS 68         | -              | ISO VG 68              | 7026             | 7021 Hydraulic oil, HM                        |
| Hyspin DSP 22         | Special lub.   | ISO VG 22              | 7019             | 7019 Hydraulic oil, HM (Flender FLUDEX)       |
| Hyspin DSP 32         | Special lub.   | ISO VG 32              | 7020             | 7019 Hydraulic oil, HM (Flender FLUDEX)       |
| Hyspin SP 22          | Special lub.   | ISO VG 22              | 7019             | 7019 Hydraulic oil, HM (Flender FLUDEX)       |
| Hyspin SP 32          | Special lub.   | ISO VG 32              | 7020             | 7019 Hydraulic oil, HM (Flender FLUDEX)       |
| Insulating Oil BS 148 | -              | ISO VG 7 / 10          | 7195             | 7195 Transformer oil                          |
| Perfecto HT 5         | -              | ISO VG 32              | 7175             | 7175 Heat transfer oil                        |
| Perfecto T 32         | -              | ISO VG 32              | 7053             | 7053 Turbine oil                              |
| Perfecto T 46         | -              | ISO VG 46              | 7054             | 7053 Turbine oil                              |
| Perfecto T 68         | -              | ISO VG 68              | 7055             | 7053 Turbine oil                              |
| Tecton 15W/40         | -              | SAE 15W-40             | 7235             | 7234 Engine oil                               |

## Castrol Performance-BP

| <u>Product name</u>              | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                      |
|----------------------------------|----------------|------------------------|------------------|---|
| Castrol Firetemp XT 2            | Special lub.   | NLGI 2                 | 7446             | 7445 Grease, High-temperature                 |
| Castrol Molub-Alloy 5011         | Special lub.   | NLGI 0 / 00            | 7525             | 7523 Kiln and mill gear units spray lubricant |
| Castrol Molub-Alloy 5011         | Special lub.   | NLGI 1                 | 7523             | 7523 Kiln and mill gear units spray lubricant |
| Castrol Molub-Alloy 777-1        | -              | NLGI 1 or 2            | 7455             | 7455 Grease, Low-speed                        |
| Castrol Molub-Alloy 777-2        | -              | NLGI 1 or 2            | 7455             | 7455 Grease, Low-speed                        |
| Castrol Molub-Alloy 8031/3000-00 | Special lub.   | ISO VG                 | 7257             | 7253 Kiln and mill gear units lubricant       |
| Castrol Molub-Alloy 8031/3000-00 | Special lub.   | NLGI 0 / 00            | 7531             | 7523 Kiln and mill gear units spray lubricant |
| Castrol Molub-Alloy 8031/3000-00 | Special lub.   | ISO VG                 | 7253             | 7253 Kiln and mill gear units lubricant       |
| Castrol Molub-Alloy 8031/3000-00 | Special lub.   | NLGI 0 / 00            | 7527             | 7523 Kiln and mill gear units spray lubricant |
| Castrol Molub-Alloy 8031/3000-00 | Special lub.   | NLGI 0 / 00            | 7529             | 7523 Kiln and mill gear units spray lubricant |
| Castrol Molub-Alloy 860/220-2    | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose                     |
| Castrol Molub-Alloy 870-2        | -              | NLGI 1 or 2            | 7455             | 7455 Grease, Low-speed                        |
| Castrol Molub-Alloy 9790/2500-0  | Special lub.   | NLGI 0 / 00            | 7527             | 7523 Kiln and mill gear units spray lubricant |
| Castrol Molub-Alloy 9790/2500-0  | Special lub.   | NLGI 0 / 00            | 7531             | 7523 Kiln and mill gear units spray lubricant |
| Castrol Molub-Alloy 9790/2500-0  | Special lub.   | NLGI 0 / 00            | 7529             | 7523 Kiln and mill gear units spray lubricant |
| Castrol Molub-Alloy 9790/2500-1  | -              | ISO VG                 | 7265             | 7265 Hand lubricant, open gear unit           |
| Castrol Molub-Alloy Chain oil 22 | Special lub.   | ISO VG 22              | 7286             | 7286 Chain lubricant                          |
| Castrol Olista Longtime 2        | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose                     |
| Castrol Olista Longtime 3        | -              | NLGI 3                 | 7426             | 7425 Grease, Multipurpose                     |
| Castrol Optigear BM 100          | -              | ISO VG 100             | 7152             | 7152 Enclosed Gear Unit oil                   |
| Castrol Optigear BM 100          | Special lub.   | ISO VG 100             | 7162             | 7162 Enclosed Gear Unit mineral oil (Flender) |

|                                   |              |                     |      |  |
|-----------------------------------|--------------|---------------------|------|--|
| Castrol Optigear BM 100           | Special lub. | ISO VG 100 - 150    | 7141 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Castrol Optigear BM 1000          | Special lub. | ISO VG 1000         | 7168 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Optigear BM 1000          | -            | ISO VG 1000         | 7158 | 7152 Enclosed Gear Unit oil                            |
| Castrol Optigear BM 150           | Special lub. | ISO VG 150          | 7163 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Optigear BM 150           | -            | ISO VG 150          | 7153 | 7152 Enclosed Gear Unit oil                            |
| Castrol Optigear BM 220           | Special lub. | ISO VG 220          | 7143 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Castrol Optigear BM 220           | Special lub. | ISO VG 220          | 7164 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Optigear BM 220           | -            | ISO VG 220          | 7154 | 7152 Enclosed Gear Unit oil                            |
| Castrol Optigear BM 320           | -            | ISO VG 320          | 7155 | 7152 Enclosed Gear Unit oil                            |
| Castrol Optigear BM 320           | Special lub. | ISO VG 320          | 7165 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Optigear BM 460           | -            | ISO VG 460          | 7156 | 7152 Enclosed Gear Unit oil                            |
| Castrol Optigear BM 460           | Special lub. | ISO VG 460          | 7166 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Optigear BM 680           | Special lub. | ISO VG 680          | 7146 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Castrol Optigear BM 680           | Special lub. | ISO VG 680          | 7167 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Optigear BM 680           | -            | ISO VG 680          | 7157 | 7152 Enclosed Gear Unit oil                            |
| Castrol Optigear Synthetic X 100  | -            | ISO VG 100          | 7344 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Castrol Optigear Synthetic X 100  | Special lub. | ISO VG 100          | 7301 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Castrol Optigear Synthetic X 1000 | Special lub. | ISO VG 1000         | 7307 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Castrol Optigear Synthetic X 150  | Special lub. | ISO VG 150          | 7302 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Castrol Optigear Synthetic X 150  | -            | ISO VG 150          | 7345 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Castrol Optigear Synthetic X 150  | Special lub. | ISO VG 150          | 7322 | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)       |
| Castrol Optigear Synthetic X 220  | Special lub. | ISO VG 220          | 7303 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Castrol Optigear Synthetic X 220  | Special lub. | ISO VG 220          | 7323 | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)       |
| Castrol Optigear Synthetic X 220  | -            | ISO VG 220          | 7346 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Castrol Optigear Synthetic X 320  | -            | ISO VG 320          | 7347 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Castrol Optigear Synthetic X 320  | Special lub. | ISO VG 320          | 7304 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Castrol Optigear Synthetic X 320  | Special lub. | ISO VG 320          | 7324 | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)       |
| Castrol Optigear Synthetic X 460  | Special lub. | ISO VG 460          | 7325 | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)       |
| Castrol Optigear Synthetic X 460  | -            | ISO VG 460          | 7348 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Castrol Optigear Synthetic X 460  | Special lub. | ISO VG 460          | 7305 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Castrol Optigear Synthetic X 680  | Special lub. | ISO VG 680          | 7306 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Castrol Optigear Synthetic X 680  | -            | ISO VG 680          | 7349 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Castrol Optileb V 46              | -            | ISO VG 46           | 7342 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Castrol Tribol 1100/100           | -            | ISO VG 100          | 7152 | 7152 Enclosed Gear Unit oil                            |
| Castrol Tribol 1100/100           | Special lub. | ISO VG 100          | 7162 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Tribol 1100/100           | Special lub. | ISO VG 100 - 150    | 7141 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Castrol Tribol 1100/1000          | -            | ISO VG 1000         | 7158 | 7152 Enclosed Gear Unit oil                            |
| Castrol Tribol 1100/1000          | Special lub. | ISO VG 1000         | 7168 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Tribol 1100/150           | -            | ISO VG 150          | 7153 | 7152 Enclosed Gear Unit oil                            |
| Castrol Tribol 1100/150           | Special lub. | ISO VG 150          | 7163 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Tribol 1100/150           | -            | ISO VG 150          | 7123 | 7123 Oil for rotary blower                             |
| Castrol Tribol 1100/220           | Special lub. | ISO VG 220          | 7143 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Castrol Tribol 1100/220           | -            | ISO VG 220          | 7154 | 7152 Enclosed Gear Unit oil                            |
| Castrol Tribol 1100/220           | -            | ISO VG 220          | 7124 | 7123 Oil for rotary blower                             |
| Castrol Tribol 1100/220           | Special lub. | ISO VG 220          | 7164 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Tribol 1100/320           | Special lub. | ISO VG 320          | 7165 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Tribol 1100/320           | -            | ISO VG 320          | 7155 | 7152 Enclosed Gear Unit oil                            |
| Castrol Tribol 1100/460           | Special lub. | ISO VG 460          | 7166 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Tribol 1100/460           | -            | ISO VG 460          | 7156 | 7152 Enclosed Gear Unit oil                            |
| Castrol Tribol 1100/68            | Special lub. | ISO VG 32 - 46 - 68 | 7006 | 7005 Hydraulic oil HM. (SEW)                           |
| Castrol Tribol 1100/680           | Special lub. | ISO VG 680          | 7146 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Castrol Tribol 1100/680           | -            | ISO VG 680          | 7157 | 7152 Enclosed Gear Unit oil                            |
| Castrol Tribol 1100/680           | Special lub. | ISO VG 680          | 7167 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Castrol Tribol 1300/1000          | Special lub. | ISO VG 1000         | 7396 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Castrol Tribol 1300/220           | Special lub. | ISO VG 220          | 7392 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Castrol Tribol 1300/320           | Special lub. | ISO VG 320          | 7393 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Castrol Tribol 1300/460           | Special lub. | ISO VG 460          | 7394 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Castrol Tribol 1300/680           | Special lub. | ISO VG 680          | 7395 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Castrol Tribol 1510 220           | Special lub. | ISO VG 220          | 7333 | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)         |
| Castrol Tribol 1555/32            | -            | ISO VG 32           | 7341 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Castrol Tribol 1555/46            | -            | ISO VG 46           | 7342 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Castrol Tribol 1730/100           | Special lub. | ISO VG 100          | 7287 | 7286 Chain lubricant                                   |
| Castrol Tribol 3785               | -            | NLGI 2              | 7435 | 7434 Grease, Low-temperature                           |
| Castrol Tribol 4020/220-2         | -            | NLGI 2              | 7425 | 7425 Grease, Multipurpose                              |
| Castrol Tribol 800/100            | Special lub. | ISO VG 100          | 7308 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Castrol Tribol 800/1000           | Special lub. | ISO VG 1000         | 7314 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Castrol Tribol 800/1000           | -            | ISO VG 1000         | 7358 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Castrol Tribol 800/1000           | Special lub. | ISO VG 1000         | 7406 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Castrol Tribol 800/150            | -            | ISO VG 150          | 7353 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Castrol Tribol 800/150            | Special lub. | ISO VG 150          | 7309 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Castrol Tribol 800/220            | Special lub. | ISO VG 220          | 7373 | 7373 Synthetic oil, Polyglycol (PG, SEW)               |
| Castrol Tribol 800/220            | Special lub. | ISO VG 220          | 7310 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Castrol Tribol 800/220            | -            | ISO VG 220          | 7354 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Castrol Tribol 800/320            | -            | ISO VG 320          | 7355 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Castrol Tribol 800/320            | Special lub. | ISO VG 320          | 7311 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Castrol Tribol 800/460            | Special lub. | ISO VG 460          | 7312 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Castrol Tribol 800/460            | -            | ISO VG 460          | 7356 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Castrol Tribol 800/680            | Special lub. | ISO VG 680          | 7313 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Castrol Tribol 800/680            | -            | ISO VG 680          | 7357 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Castrol Tribol 800/680            | Special lub. | ISO VG 680          | 7376 | 7373 Synthetic oil, Polyglycol (PG, SEW)               |
| Castrol Tribol 943 AW 22          | Special lub. | ISO VG 22           | 7019 | 7019 Hydraulic oil, HM (Flender FLUDEX)                |
| Castrol Tribol 943 AW 32          | Special lub. | ISO VG 32           | 7020 | 7019 Hydraulic oil, HM (Flender FLUDEX)                |
| Castrol Tribol 943 AW 32          | -            | ISO VG 32           | 7024 | 7021 Hydraulic oil, HM                                 |
| Castrol Tribol 943 AW 46          | -            | ISO VG 46           | 7025 | 7021 Hydraulic oil, HM                                 |
| Castrol Tribol 943 AW 68          | -            | ISO VG 68           | 7026 | 7021 Hydraulic oil, HM                                 |
| Castrol Tribol FoodProof 1840/32  | -            | ISO VG 32           | 7114 | 7114 Oil for pneumatic tool                            |
| Castrol Tribol FoodProof 1840/46  | -            | ISO VG 46           | 7115 | 7114 Oil for pneumatic tool                            |
| Castrol Ultra 22                  | -            | ISO VG 22           | 7215 | 7215 Flushing oil                                      |
| Castrol Viscogen 4                | -            | ISO VG              | 7265 | 7265 Hand lubricant, open gear unit                    |
| Castrol Viscogen KL 9             | Special lub. | ISO VG 100          | 7287 | 7286 Chain lubricant                                   |
| Longtime PD 00                    | Special lub. | NLGI 000-0          | 7541 | 7540 Grease. Low viscosity (SEW)                       |

## Engen Petroleum

| <u>Product name</u>       | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>      |
|---------------------------|----------------|------------------------|------------------|-------------------------------|
| Engen Dieselube 600 Super | -              | SAE 15W-40             | 7235             | 7234 Engine oil               |
| Engen Gengrease HT 41M    | -              | NLGI 2                 | 7445             | 7445 Grease, High-temperature |
| Engen Gengrease SPL 2HT   | -              | NLGI 2                 | 7435             | 7434 Grease, Low-temperature  |
| Engen Genlex EP 42 MT     | -              | NLGI 1 or 2            | 7455             | 7455 Grease, Low-speed        |
| Engen Premium EP 2        | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose     |
| Engen Premium EP 3        | -              | NLGI 3                 | 7426             | 7425 Grease, Multipurpose     |
| Engen TQH 10/15           | -              | ISO VG 15              | 7013             | 7012 Hydraulic oil, HV        |
| Engen TQH 20/32           | -              | ISO VG 32              | 7024             | 7021 Hydraulic oil, HM        |
| Engen TQH 20/46           | -              | ISO VG 46              | 7025             | 7021 Hydraulic oil, HM        |
| Engen TQH 20/68           | -              | ISO VG 68              | 7026             | 7021 Hydraulic oil, HM        |
| Genair 100                | -              | ISO VG 100             | 7036             | 7035 Compressor oil, mineral  |
| Genair 68                 | -              | ISO VG 68              | 7034             | 7035 Compressor oil, mineral  |
| Gencirc 150               | -              | ISO VG 150             | 7123             | 7123 Oil for rotary blower    |
| Gencirc 220               | -              | ISO VG 220             | 7124             | 7123 Oil for rotary blower    |
| GENCIRC 32                | -              | ISO VG 32              | 7053             | 7053 Turbine oil              |
| GENCIRC 46                | -              | ISO VG 46              | 7054             | 7053 Turbine oil              |
| GENCIRC 68                | -              | ISO VG 68              | 7055             | 7053 Turbine oil              |
| Gencyl 1000               | -              | ISO VG 1000            | 7136             | 7134 Cylinder oil             |
| Gencyl 460                | -              | ISO VG 460             | 7134             | 7134 Cylinder oil             |
| Gengear 100               | -              | ISO VG 100             | 7152             | 7152 Enclosed Gear Unit oil   |
| Gengear 150               | -              | ISO VG 150             | 7153             | 7152 Enclosed Gear Unit oil   |
| Gengear 220               | -              | ISO VG 220             | 7154             | 7152 Enclosed Gear Unit oil   |
| Gengear 320               | -              | ISO VG 320             | 7155             | 7152 Enclosed Gear Unit oil   |
| Gengear 460               | -              | ISO VG 460             | 7156             | 7152 Enclosed Gear Unit oil   |
| Gengear 680               | -              | ISO VG 680             | 7157             | 7152 Enclosed Gear Unit oil   |
| Genheat 22                | -              | ISO VG 22              | 7215             | 7215 Flushing oil             |
| Genheat 32                | -              | ISO VG 32              | 7175             | 7175 Heat transfer oil        |
| POWEROIL TO 1020 (60U)    | -              | ISO VG 7 / 10          | 7195             | 7195 Transformer oil          |

## ESSO-EXXON

| <u>Product name</u>   | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                         |
|-----------------------|----------------|------------------------|------------------|--|
| Arox EP 32            | -              | ISO VG 32              | 7114             | 7114 Oil for pneumatic tool                      |
| Arox EP 46            | -              | ISO VG 46              | 7115             | 7114 Oil for pneumatic tool                      |
| Beacon EP 2           | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose                        |
| Cylesstic 1000        | -              | ISO VG 1000            | 7136             | 7134 Cylinder oil                                |
| Esso Nuto H 15        | -              | ISO VG 15              | 7013             | 7012 Hydraulic oil, HV                           |
| Esso NUTO H 22        | Special lub.   | ISO VG 22              | 7019             | 7019 Hydraulic oil, HM (Flender FLUDEX)          |
| Esso Nuto H 22        | -              | ISO VG 22              | 7215             | 7215 Flushing oil                                |
| Esso Nuto H 32        | Special lub.   | ISO VG 32              | 7018             | 7018 Hydraulic, HM. Low temperature              |
| Esso Nuto H 32        | Special lub.   | ISO VG 32              | 7020             | 7019 Hydraulic oil, HM (Flender FLUDEX)          |
| Esso Nuto H 32        | -              | ISO VG 32              | 7024             | 7021 Hydraulic oil, HM                           |
| Esso Nuto H 46        | -              | ISO VG 46              | 7025             | 7021 Hydraulic oil, HM                           |
| Esso Nuto H 68        | -              | ISO VG 68              | 7026             | 7021 Hydraulic oil, HM                           |
| ESSO RS 68            | Special lub.   | ISO VG 68              | 7035             | 7032 Compressor oil, synthetic                   |
| Essolube XT 3         | -              | SAE 15W-40             | 7235             | 7234 Engine oil                                  |
| Essotherm 500         | -              | ISO VG 32              | 7175             | 7175 Heat transfer oil                           |
| Exxcolub 100          | -              | ISO VG 100             | 7036             | 7035 Compressor oil, mineral                     |
| Exxcolub 68           | -              | ISO VG 68              | 7034             | 7035 Compressor oil, mineral                     |
| Spartan EP 100        | -              | ISO VG 100             | 7152             | 7152 Enclosed Gear Unit oil                      |
| Spartan EP 150        | -              | ISO VG 150             | 7153             | 7152 Enclosed Gear Unit oil                      |
| Spartan EP 150        | Special lub.   | ISO VG 150             | 7148             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)     |
| Spartan EP 220        | Special lub.   | ISO VG 220             | 7149             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)     |
| Spartan EP 220        | -              | ISO VG 220             | 7154             | 7152 Enclosed Gear Unit oil                      |
| Spartan EP 320        | -              | ISO VG 320             | 7155             | 7152 Enclosed Gear Unit oil                      |
| Spartan EP 320        | Special lub.   | ISO VG 320             | 7150             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)     |
| Spartan EP 460        | -              | ISO VG 460             | 7156             | 7152 Enclosed Gear Unit oil                      |
| Spartan EP 460        | Special lub.   | ISO VG 460             | 7151             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)     |
| Spartan EP 680        | -              | ISO VG 680             | 7157             | 7152 Enclosed Gear Unit oil                      |
| Spartan SEP 150       | Special lub.   | ISO VG 150             | 7322             | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi) |
| Spartan SEP 220       | Special lub.   | ISO VG 220             | 7323             | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi) |
| Spartan SEP 320       | Special lub.   | ISO VG 320             | 7324             | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi) |
| Spartan SEP 460       | Special lub.   | ISO VG 460             | 7325             | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi) |
| Teresso 150, Nuto 150 | -              | ISO VG 150             | 7123             | 7123 Oil for rotary blower                       |
| Teresso 220, Nuto 220 | -              | ISO VG 220             | 7124             | 7123 Oil for rotary blower                       |
| Teresstic T 32        | -              | ISO VG 32              | 7053             | 7053 Turbine oil                                 |
| Teresstic T 46        | -              | ISO VG 46              | 7054             | 7053 Turbine oil                                 |
| Teresstic T 68        | -              | ISO VG 68              | 7055             | 7053 Turbine oil                                 |
| Unirex N 3            | -              | NLGI 3                 | 7426             | 7425 Grease, Multipurpose                        |
| Univolt N 53          | -              | ISO VG 7 / 10          | 7195             | 7195 Transformer oil                             |

## FAG

| <u>Product name</u> | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u> |
|---------------------|----------------|------------------------|------------------|--------------------------|
| Arcanol TEMP 120    | -              | NLGI 2                 | 7457             | 7455 Grease, Low-speed   |

## Fuchs Lubritech

| <u>Product name</u> | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                      |
|---------------------|----------------|------------------------|------------------|---|
| Ceplattyn 100 HV    | Special lub.   | ISO VG                 | 7253             | 7253 Kiln and mill gear units lubricant       |
| Ceplattyn 100 HV    | Special lub.   | ISO VG                 | 7257             | 7253 Kiln and mill gear units lubricant       |
| Ceplattyn 300       | Special lub.   | NLGI 1                 | 7523             | 7523 Kiln and mill gear units spray lubricant |
| Ceplattyn 300       | -              | ISO VG                 | 7265             | 7265 Hand lubricant, open gear unit           |
| Ceplattyn 300       | -              | ISO VG                 | 7285             | 7285 Wire lubricant                           |

|                          |              |                     |      |  |
|--------------------------|--------------|---------------------|------|--|
| Ceplattyn BL             | -            | ISO VG              | 7285 | 7285 Wire lubricant                                    |
| Ceplattyn HT             | Special lub. | ISO VG              | 7557 | 7555 Anti-friction lubricant, live ring                |
| Ceplattyn KG 10 HMF      | Special lub. | NLGI 0 / 00         | 7527 | 7523 Kiln and mill gear units spray lubricant          |
| Ceplattyn KG 10 HMF      | -            | ISO VG              | 7265 | 7265 Hand lubricant, open gear unit                    |
| Ceplattyn KG 10 HMF 1000 | Special lub. | NLGI 0 / 00         | 7529 | 7523 Kiln and mill gear units spray lubricant          |
| Ceplattyn KG 10 HMF 2500 | Special lub. | NLGI 0 / 00         | 7531 | 7523 Kiln and mill gear units spray lubricant          |
| Ceplattyn KG 10 LC       | Special lub. | NLGI 0 / 00         | 7531 | 7523 Kiln and mill gear units spray lubricant          |
| Ceplattyn RN             | Special lub. | NLGI 0 / 00         | 7525 | 7523 Kiln and mill gear units spray lubricant          |
| Ceplattyn RN             | Special lub. | ISO VG              | 7256 | 7253 Kiln and mill gear units lubricant                |
| Gearmaster CLP 100       | Special lub. | ISO VG 100          | 7162 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Gearmaster CLP 100       | -            | ISO VG 100          | 7152 | 7152 Enclosed Gear Unit oil                            |
| Gearmaster CLP 1000      | -            | ISO VG 1000         | 7158 | 7152 Enclosed Gear Unit oil                            |
| Gearmaster CLP 150       | -            | ISO VG 150          | 7153 | 7152 Enclosed Gear Unit oil                            |
| Gearmaster CLP 150       | Special lub. | ISO VG 150          | 7163 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Gearmaster CLP 220       | Special lub. | ISO VG 220          | 7164 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Gearmaster CLP 220       | -            | ISO VG 220          | 7154 | 7152 Enclosed Gear Unit oil                            |
| Gearmaster CLP 320       | -            | ISO VG 320          | 7155 | 7152 Enclosed Gear Unit oil                            |
| Gearmaster CLP 320       | Special lub. | ISO VG 320          | 7165 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Gearmaster CLP 460       | Special lub. | ISO VG 460          | 7166 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Gearmaster CLP 460       | -            | ISO VG 460          | 7156 | 7152 Enclosed Gear Unit oil                            |
| Gearmaster CLP 680       | -            | ISO VG 680          | 7157 | 7152 Enclosed Gear Unit oil                            |
| Gearmaster CLP 680       | Special lub. | ISO VG 680          | 7167 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Gearmaster PGP 100       | Special lub. | ISO VG 100          | 7308 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Gearmaster PGP 100       | Special lub. | ISO VG 100          | 7390 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Gearmaster PGP 1000      | Special lub. | ISO VG 1000         | 7396 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Gearmaster PGP 1000      | Special lub. | ISO VG 1000         | 7314 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Gearmaster PGP 150       | -            | ISO VG 150          | 7353 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Gearmaster PGP 150       | Special lub. | ISO VG 150          | 7309 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Gearmaster PGP 150       | Special lub. | ISO VG 150          | 7391 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Gearmaster PGP 220       | Special lub. | ISO VG 220          | 7392 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Gearmaster PGP 220       | -            | ISO VG 220          | 7354 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Gearmaster PGP 220       | Special lub. | ISO VG 220          | 7310 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Gearmaster PGP 320       | -            | ISO VG 320          | 7355 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Gearmaster PGP 320       | Special lub. | ISO VG 320          | 7311 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Gearmaster PGP 320       | Special lub. | ISO VG 320          | 7393 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Gearmaster PGP 460       | -            | ISO VG 460          | 7356 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Gearmaster PGP 460       | Special lub. | ISO VG 460          | 7312 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Gearmaster PGP 460       | Special lub. | ISO VG 460          | 7394 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Gearmaster PGP 680       | -            | ISO VG 680          | 7357 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Gearmaster PGP 680       | Special lub. | ISO VG 680          | 7313 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Gearmaster PGP 680       | Special lub. | ISO VG 680          | 7395 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Gearmaster SYN 100       | -            | ISO VG 100          | 7344 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Gearmaster SYN 1000      | Special lub. | ISO VG 1000         | 7307 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Gearmaster SYN 1000      | Special lub. | ISO VG 1000         | 7350 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Gearmaster SYN 150       | -            | ISO VG 150          | 7345 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Gearmaster SYN 150       | Special lub. | ISO VG 150          | 7302 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Gearmaster SYN 220       | Special lub. | ISO VG 220          | 7303 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Gearmaster SYN 220       | -            | ISO VG 220          | 7346 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Gearmaster SYN 320       | -            | ISO VG 320          | 7347 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Gearmaster SYN 320       | Special lub. | ISO VG 320          | 7304 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Gearmaster SYN 460       | -            | ISO VG 460          | 7348 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Gearmaster SYN 460       | Special lub. | ISO VG 460          | 7305 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Gearmaster SYN 680       | -            | ISO VG 680          | 7349 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Gearmaster SYN 680       | Special lub. | ISO VG 680          | 7306 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Gleitmo 160 Neu          | Special lub. | ISO VG              | 7555 | 7555 Anti-friction lubricant, live ring                |
| Kompranol 1002           | -            | ISO VG 46           | 7115 | 7114 Oil for pneumatic tool                            |
| KS Paul Products, PBC    | Special lub. | ISO VG              | 7555 | 7555 Anti-friction lubricant, live ring                |
| Renolin 102 L            | -            | ISO VG 68           | 7034 | 7035 Compressor oil, mineral                           |
| Renolin 104 L            | -            | ISO VG 100          | 7036 | 7035 Compressor oil, mineral                           |
| Renolin B 10             | -            | ISO VG 32           | 7024 | 7021 Hydraulic oil, HM                                 |
| Renolin B 15             | -            | ISO VG 46           | 7025 | 7021 Hydraulic oil, HM                                 |
| Renolin B 20             | -            | ISO VG 68           | 7026 | 7021 Hydraulic oil, HM                                 |
| Renolin B 46 HVI         | Special lub. | ISO VG 32 - 46 - 68 | 7006 | 7005 Hydraulic oil HM. (SEW)                           |
| Renolin CH 500           | -            | ISO VG 1000         | 7136 | 7134 Cylinder oil                                      |
| Renolin CLP 150          | Special lub. | ISO VG 100 - 150    | 7141 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Renolin CLP 220          | Special lub. | ISO VG 220          | 7143 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Renolin CLP 680          | Special lub. | ISO VG 680          | 7146 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Renolin DTA 150          | -            | ISO VG 150          | 7123 | 7123 Oil for rotary blower                             |
| Renolin DTA 220          | -            | ISO VG 220          | 7124 | 7123 Oil for rotary blower                             |
| Renolin E 7              | -            | ISO VG 7 / 10       | 7195 | 7195 Transformer oil                                   |
| Renolin MR 3             | -            | ISO VG 10           | 7012 | 7012 Hydraulic oil, HV                                 |
| Renolin MR 310           | -            | ISO VG 15           | 7013 | 7012 Hydraulic oil, HV                                 |
| Renolin MR 5             | -            | ISO VG 22           | 7215 | 7215 Flushing oil                                      |
| Renolin PG 1000          | Special lub. | ISO VG 1000         | 7406 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Renolin SC 32            | -            | ISO VG 32           | 7053 | 7053 Turbine oil                                       |
| Renolin SC 46            | -            | ISO VG 46           | 7054 | 7053 Turbine oil                                       |
| Renolin SC 46            | -            | ISO VG 46           | 7033 | 7032 Compressor oil, synthetic                         |
| Renolin SC 68            | -            | ISO VG 68           | 7034 | 7035 Compressor oil, mineral                           |
| Renolin SC 68            | -            | ISO VG 68           | 7055 | 7053 Turbine oil                                       |
| Renolin SF 7 - 041       | Special lub. | NLGI 000-0          | 7541 | 7540 Grease. Low viscosity (SEW)                       |
| Renolin Therm 350 S      | -            | ISO VG 32           | 7175 | 7175 Heat transfer oil                                 |
| Renolin Unisyn CLP 220   | Special lub. | ISO VG 220          | 7333 | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)         |
| Stabyl HD                | -            | NLGI 1 or 2         | 7455 | 7455 Grease, Low-speed                                 |
| Stabyl LT 50             | -            | NLGI 2              | 7435 | 7434 Grease, Low-temperature                           |
| Titan Universal HD 1540  | -            | SAE 15W-40          | 7235 | 7234 Engine oil  |
| Urethyn MP 2             | -            | NLGI 2              | 7425 | 7425 Grease, Multipurpose                              |
| Urethyn MP 2             | -            | NLGI 2              | 7445 | 7445 Grease, High-temperature                          |

## India Oil Corporation

| <u>Product name</u>         | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>      |
|-----------------------------|----------------|------------------------|------------------|-------------------------------|
| Servogem - 2                | -              | NLGI 2                 | 7435             | 7434 Grease, Low-temperature  |
| Servogem Super HT           | -              | NLGI 2                 | 7445             | 7445 Grease, High-temperature |
| Servogrease Repair Compound | -              | NLGI 2                 | 7435             | 7434 Grease, Low-temperature  |
| Servogrease WR 2            | -              | NLGI 1 or 2            | 7455             | 7455 Grease, Low-speed        |

|                       |              |             |      |  |
|-----------------------|--------------|-------------|------|--|
| Servomesh Plus 100    | -            | ISO VG 100  | 7152 | 7152 Enclosed Gear Unit oil                        |
| Servomesh Plus 1000   | -            | ISO VG 1000 | 7158 | 7152 Enclosed Gear Unit oil                        |
| Servomesh Plus 150    | -            | ISO VG 150  | 7153 | 7152 Enclosed Gear Unit oil                        |
| Servomesh Plus 220    | -            | ISO VG 220  | 7154 | 7152 Enclosed Gear Unit oil                        |
| Servomesh Plus 320    | -            | ISO VG 320  | 7155 | 7152 Enclosed Gear Unit oil                        |
| Servomesh Plus 460    | -            | ISO VG 460  | 7156 | 7152 Enclosed Gear Unit oil                        |
| Servomesh Plus 680    | -            | ISO VG 680  | 7157 | 7152 Enclosed Gear Unit oil                        |
| Servoplex LC - 2      | -            | NLGI 2      | 7425 | 7425 Grease, Multipurpose                          |
| Servopress 100        | -            | ISO VG 100  | 7036 | 7035 Compressor oil, mineral                       |
| Servopress 68         | -            | ISO VG 68   | 7034 | 7035 Compressor oil, mineral                       |
| Servoprime 32         | -            | ISO VG 32   | 7053 | 7053 Turbine oil                                   |
| Servoprime 46         | -            | ISO VG 46   | 7054 | 7053 Turbine oil                                   |
| Servoprime 68         | -            | ISO VG 68   | 7055 | 7053 Turbine oil                                   |
| Servosyngear 100      | -            | ISO VG 100  | 7344 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Servosyngear 150      | -            | ISO VG 150  | 7345 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Servosyngear 220      | -            | ISO VG 220  | 7346 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Servosyngear 32       | -            | ISO VG 32   | 7341 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Servosyngear 320      | -            | ISO VG 320  | 7347 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Servosyngear 46       | -            | ISO VG 46   | 7342 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Servosyngear 460      | -            | ISO VG 460  | 7348 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Servosyngear 680      | -            | ISO VG 680  | 7349 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Servosyngear AMP 150  | Special lub. | ISO VG 150  | 7302 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Servosyngear AMP 220  | Special lub. | ISO VG 220  | 7303 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Servosyngear AMP 320  | Special lub. | ISO VG 320  | 7304 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Servosyngear AMP 460  | Special lub. | ISO VG 460  | 7305 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Servosyngear Plus 220 | Special lub. | ISO VG 220  | 7303 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Servosyngear Plus 320 | Special lub. | ISO VG 320  | 7304 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Servosyngear Plus 460 | Special lub. | ISO VG 460  | 7305 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Servosyngear Plus 680 | Special lub. | ISO VG 680  | 7306 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Servosystem HLP 32    | -            | ISO VG 32   | 7024 | 7021 Hydraulic oil, HM                             |
| Servosystem HLP 46    | -            | ISO VG 46   | 7025 | 7021 Hydraulic oil, HM                             |
| Servosystem HLP 68    | -            | ISO VG 68   | 7026 | 7021 Hydraulic oil, HM                             |
| Servotherm special    | -            | ISO VG 32   | 7175 | 7175 Heat transfer oil                             |

## Klüber Lubrication

| Product name                  | Special      | Standard ISO VG     | Mat. code | Type of lubricant                                      |
|-------------------------------|--------------|---------------------|-----------|--|
| Barrierta L 55/2              | Special lub. | NLGI 2              | 7446      | 7445 Grease, High-temperature                          |
| Grafloscon A-G 1 Ultra        | Special lub. | NLGI 1              | 7523      | 7523 Kiln and mill gear units spray lubricant          |
| Grafloscon B-SG 00 Ultra      | Special lub. | NLGI 0 / 00         | 7525      | 7523 Kiln and mill gear units spray lubricant          |
| Grafloscon CA 901 Ultra Spray | -            | ISO VG              | 7265      | 7265 Hand lubricant, open gear unit                    |
| Grafloscon C-SG 0 Ultra       | Special lub. | NLGI 0 / 00         | 7527      | 7523 Kiln and mill gear units spray lubricant          |
| Grafloscon C-SG 1000 Ultra    | Special lub. | NLGI 0 / 00         | 7529      | 7523 Kiln and mill gear units spray lubricant          |
| Grafloscon C-SG 2000 Ultra    | -            | ISO VG              | 7285      | 7285 Wire lubricant                                    |
| Grafloscon C-SG 2000 Ultra    | Special lub. | NLGI 0 / 00         | 7531      | 7523 Kiln and mill gear units spray lubricant          |
| Isoflex MT 30 ROT             | Special lub. | ISO VG 15 - 22      | 7005      | 7005 Hydraulic oil HM. (SEW)                           |
| Klüber - Summit DSL 100       | -            | ISO VG 100          | 7036      | 7035 Compressor oil, mineral                           |
| Klüber - Summit DSL 68        | -            | ISO VG 68           | 7034      | 7035 Compressor oil, mineral                           |
| Klüber - Summit HySyn FG-32   | Special lub. | ISO VG 32           | 7329      | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)         |
| Klüber - Summit SH 32         | -            | ISO VG 32           | 7032      | 7032 Compressor oil, synthetic                         |
| Klüber - Summit SH 46         | -            | ISO VG 46           | 7033      | 7032 Compressor oil, synthetic                         |
| Klüber Syntheso D 100 EP      | Special lub. | ISO VG 100          | 7308      | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Klüber Syntheso D 1000 EP     | Special lub. | ISO VG 1000         | 7314      | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Klüber Syntheso D 150 EP      | Special lub. | ISO VG 150          | 7309      | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Klüber Syntheso D 220 EP      | Special lub. | ISO VG 220          | 7310      | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Klüber Syntheso D 320 EP      | Special lub. | ISO VG 320          | 7311      | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Klüber Syntheso D 460 EP      | Special lub. | ISO VG 460          | 7312      | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Klüber Syntheso D 680 EP      | Special lub. | ISO VG 680          | 7313      | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Klüberfluid B-F 1 Ultra       | Special lub. | ISO VG              | 7256      | 7253 Kiln and mill gear units lubricant                |
| Klüberfluid C-F 1 Ultra       | Special lub. | ISO VG              | 7253      | 7253 Kiln and mill gear units lubricant                |
| Klüberfluid C-F 4 Ultra       | Special lub. | ISO VG              | 7257      | 7253 Kiln and mill gear units lubricant                |
| Klüberlub BE 41-1501          | Special lub. | NLGI 1 or 2         | 7456      | 7455 Grease, Low-speed                                 |
| Klüberlub BE 41-1501          | -            | NLGI 2              | 7457      | 7455 Grease, Low-speed                                 |
| Klüberoil GEM 1-100 N         | -            | ISO VG 100          | 7152      | 7152 Enclosed Gear Unit oil                            |
| Klüberoil GEM 1-100 N         | Special lub. | ISO VG 100          | 7162      | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Klüberoil GEM 1-150 N         | -            | ISO VG 150          | 7153      | 7152 Enclosed Gear Unit oil                            |
| Klüberoil GEM 1-150 N         | Special lub. | ISO VG 100 - 150    | 7141      | 7141 Enclosed Gear Unit oil (SEW)                      |
| Klüberoil GEM 1-150 N         | Special lub. | ISO VG 150          | 7163      | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Klüberoil GEM 1-150 N         | -            | ISO VG 150          | 7123      | 7123 Oil for rotary blower                             |
| Klüberoil GEM 1-220 N         | Special lub. | ISO VG 220          | 7143      | 7141 Enclosed Gear Unit oil (SEW)                      |
| Klüberoil GEM 1-220 N         | -            | ISO VG 220          | 7154      | 7152 Enclosed Gear Unit oil                            |
| Klüberoil GEM 1-220 N         | -            | ISO VG 220          | 7124      | 7123 Oil for rotary blower                             |
| Klüberoil GEM 1-220 N         | Special lub. | ISO VG 220          | 7164      | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Klüberoil GEM 1-320 N         | -            | ISO VG 320          | 7155      | 7152 Enclosed Gear Unit oil                            |
| Klüberoil GEM 1-320 N         | Special lub. | ISO VG 320          | 7165      | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Klüberoil GEM 1-460 N         | Special lub. | ISO VG 460          | 7166      | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Klüberoil GEM 1-460 N         | -            | ISO VG 460          | 7156      | 7152 Enclosed Gear Unit oil                            |
| Klüberoil GEM 1-68 N          | Special lub. | ISO VG 32 - 46 - 68 | 7006      | 7005 Hydraulic oil HM. (SEW)                           |
| Klüberoil GEM 1-680 N         | Special lub. | ISO VG 680          | 7167      | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Klüberoil GEM 1-680 N         | -            | ISO VG 680          | 7157      | 7152 Enclosed Gear Unit oil                            |
| Klüberoil GEM 1-680 N         | Special lub. | ISO VG 680          | 7146      | 7141 Enclosed Gear Unit oil (SEW)                      |
| Klüberplex BEM 41-141         | -            | NLGI 1              | 7434      | 7434 Grease, Low-temperature                           |
| Klübersynth EG 4 - 1000       | Special lub. | ISO VG 1000         | 7350      | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Klübersynth EG 4 - 150        | Special lub. | ISO VG 150          | 7332      | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)         |
| Klübersynth EG 4 - 150        | Special lub. | ISO VG 150          | 7322      | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)       |
| Klübersynth EG 4 - 220        | Special lub. | ISO VG 220          | 7333      | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)         |
| Klübersynth EG 4 - 220        | Special lub. | ISO VG 220          | 7323      | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)       |
| Klübersynth EG 4 - 220        | -            | ISO VG 220          | 7346      | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Klübersynth EG 4 - 320        | Special lub. | ISO VG 320          | 7324      | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)       |
| Klübersynth EG 4 - 460        | Special lub. | ISO VG 460          | 7325      | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)       |
| Klübersynth EG 4 - 460        | Special lub. | ISO VG 460          | 7335      | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)         |
| Klübersynth GE 46 - 1200      | Special lub. | NLGI 00             | 7540      | 7540 Grease. Low viscosity (SEW)                       |
| Klübersynth GEM 4-100 N       | -            | ISO VG 100          | 7344      | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Klübersynth GEM 4-150 N       | Special lub. | ISO VG 150          | 7302      | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Klübersynth GEM 4-150 N       | -            | ISO VG 150          | 7345      | 7341 Synthetic oil, Polyalphaolefin (PAO)              |

|                         |              |             |      |  |
|-------------------------|--------------|-------------|------|--|
| Klübersynth GEM 4-220 N | Special lub. | ISO VG 220  | 7303 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Klübersynth GEM 4-32 N  | -            | ISO VG 32   | 7341 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Klübersynth GEM 4-320 N | Special lub. | ISO VG 320  | 7304 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Klübersynth GEM 4-46 N  | -            | ISO VG 46   | 7342 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Klübersynth GEM 4-460 N | -            | ISO VG 460  | 7348 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Klübersynth GEM 4-460 N | Special lub. | ISO VG 460  | 7305 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Klübersynth GEM 4-680 N | Special lub. | ISO VG 680  | 7306 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Klübersynth GEM 4-680 N | -            | ISO VG 680  | 7349 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Klübersynth GH 6 - 1000 | Special lub. | ISO VG 1000 | 7396 | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Klübersynth GH 6 - 150  | -            | ISO VG 150  | 7353 | 7353 Synthetic oil, Polyglycol (PG)                |
| Klübersynth GH 6 - 150  | Special lub. | ISO VG 150  | 7391 | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Klübersynth GH 6 - 150  | Special lub. | ISO VG 150  | 7363 | 7363 Synthetic oil, Polyglycol (PG, Rossi)         |
| Klübersynth GH 6 - 220  | Special lub. | ISO VG 220  | 7373 | 7373 Synthetic oil, Polyglycol (PG, SEW)           |
| Klübersynth GH 6 - 220  | Special lub. | ISO VG 220  | 7392 | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Klübersynth GH 6 - 220  | Special lub. | ISO VG 220  | 7383 | 7363 Synthetic oil, Polyglycol (PG, Rossi)         |
| Klübersynth GH 6 - 220  | -            | ISO VG 220  | 7354 | 7353 Synthetic oil, Polyglycol (PG)                |
| Klübersynth GH 6 - 220  | Special lub. | ISO VG 220  | 7364 | 7363 Synthetic oil, Polyglycol (PG, Rossi)         |
| Klübersynth GH 6 - 320  | Special lub. | ISO VG 320  | 7393 | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Klübersynth GH 6 - 320  | Special lub. | ISO VG 320  | 7384 | 7363 Synthetic oil, Polyglycol (PG, Rossi)         |
| Klübersynth GH 6 - 320  | Special lub. | ISO VG 320  | 7365 | 7363 Synthetic oil, Polyglycol (PG, Rossi)         |
| Klübersynth GH 6 - 320  | -            | ISO VG 320  | 7355 | 7353 Synthetic oil, Polyglycol (PG)                |
| Klübersynth GH 6 - 460  | Special lub. | ISO VG 460  | 7394 | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Klübersynth GH 6 - 460  | -            | ISO VG 460  | 7356 | 7353 Synthetic oil, Polyglycol (PG)                |
| Klübersynth GH 6 - 460  | Special lub. | ISO VG 460  | 7385 | 7363 Synthetic oil, Polyglycol (PG, Rossi)         |
| Klübersynth GH 6 - 460  | Special lub. | ISO VG 460  | 7366 | 7363 Synthetic oil, Polyglycol (PG, Rossi)         |
| Klübersynth GH 6 - 680  | -            | ISO VG 680  | 7357 | 7353 Synthetic oil, Polyglycol (PG)                |
| Klübersynth GH 6 - 680  | Special lub. | ISO VG 680  | 7386 | 7363 Synthetic oil, Polyglycol (PG, Rossi)         |
| Klübersynth GH 6 - 680  | Special lub. | ISO VG 680  | 7395 | 7390 Synthetic oil, Polyglycol (PG, Flender)       |
| Klübersynth GH 6 - 680  | Special lub. | ISO VG 680  | 7376 | 7373 Synthetic oil, Polyglycol (PG, SEW)           |
| Klübersynth UH 1 4 - 32 | -            | ISO VG 32   | 7024 | 7021 Hydraulic oil, HM                             |
| Klübersynth UH 1 4 - 46 | -            | ISO VG 46   | 7025 | 7021 Hydraulic oil, HM                             |
| Klübersynth UH 1 4 - 68 | -            | ISO VG 68   | 7026 | 7021 Hydraulic oil, HM                             |
| Microlube GL 261        | -            | NLGI 1      | 7434 | 7434 Grease, Low-temperature                       |
| Microlube GL 262        | -            | NLGI 2      | 7425 | 7425 Grease, Multipurpose                          |
| Staburags NBU 4         | -            | NLGI 3      | 7426 | 7425 Grease, Multipurpose                          |
| Stabutherm GH 462       | -            | NLGI 2      | 7445 | 7445 Grease, High-temperature                      |
| Wolfracoat C            | Special lub. | ISO VG      | 7555 | 7555 Anti-friction lubricant, live ring            |
| Wolfracoat C Fluid      | Special lub. | ISO VG      | 7557 | 7555 Anti-friction lubricant, live ring            |

## Krafft S. L.

| <u>Product name</u> | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                      |
|---------------------|----------------|------------------------|------------------|---|
| 15W40 SHPD          | -              | SAE 15W-40             | 7235             | 7234 Engine oil                               |
| FH-22 EP            | -              | ISO VG 22              | 7023             | 7021 Hydraulic oil, HM                        |
| FH-22 EP            | -              | ISO VG 22              | 7215             | 7215 Flushing oil                             |
| FH-32 EP            | -              | ISO VG 32              | 7024             | 7021 Hydraulic oil, HM                        |
| FH-46 EP            | -              | ISO VG 46              | 7025             | 7021 Hydraulic oil, HM                        |
| FH-68 EP            | -              | ISO VG 68              | 7026             | 7021 Hydraulic oil, HM                        |
| K-165-X             | -              | ISO VG                 | 7265             | 7265 Hand lubricant, open gear unit           |
| KEP 2 GF            | -              | NLGI 2                 | 7435             | 7434 Grease, Low-temperature                  |
| KEP-2               | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose                     |
| KGP-2/M             | -              | ISO VG                 | 7265             | 7265 Hand lubricant, open gear unit           |
| KGP-2/P             | Special lub.   | NLGI 0 / 00            | 7529             | 7523 Kiln and mill gear units spray lubricant |
| KGP-2/P             | Special lub.   | NLGI 0 / 00            | 7527             | 7523 Kiln and mill gear units spray lubricant |
| KGP-2/P-E           | Special lub.   | NLGI 0 / 00            | 7525             | 7523 Kiln and mill gear units spray lubricant |
| KGP-2/Plex 1500     | Special lub.   | NLGI 0 / 00            | 7531             | 7523 Kiln and mill gear units spray lubricant |
| KL Complex 150      | -              | NLGI 2                 | 7445             | 7445 Grease, High-temperature                 |
| KL Complex 2000     | -              | NLGI 1 or 2            | 7455             | 7455 Grease, Low-speed                        |
| KL Complex 2000     | -              | ISO VG                 | 7265             | 7265 Hand lubricant, open gear unit           |
| Kroil Basela 100    | -              | ISO VG 100             | 7152             | 7152 Enclosed Gear Unit oil                   |
| Kroil Basela 120 CP | -              | ISO VG 100             | 7036             | 7035 Compressor oil, mineral                  |
| Kroil Basela 150    | -              | ISO VG 150             | 7153             | 7152 Enclosed Gear Unit oil                   |
| Kroil Basela 150    | -              | ISO VG 150             | 7123             | 7123 Oil for rotary blower                    |
| Kroil Basela 220    | -              | ISO VG 220             | 7154             | 7152 Enclosed Gear Unit oil                   |
| Kroil Basela 220    | -              | ISO VG 220             | 7124             | 7123 Oil for rotary blower                    |
| Kroil Basela 320    | -              | ISO VG 320             | 7155             | 7152 Enclosed Gear Unit oil                   |
| Kroil Basela 460    | -              | ISO VG 460             | 7156             | 7152 Enclosed Gear Unit oil                   |
| Kroil Basela 60 CP  | -              | ISO VG 68              | 7034             | 7035 Compressor oil, mineral                  |
| Kroil Basela 680    | -              | ISO VG 680             | 7157             | 7152 Enclosed Gear Unit oil                   |
| Kroil Sintlube 150  | -              | ISO VG 150             | 7345             | 7341 Synthetic oil, Polyalphaolefin (PAO)     |
| Kroil Sintlube 220  | -              | ISO VG 220             | 7346             | 7341 Synthetic oil, Polyalphaolefin (PAO)     |
| Kroil Sintlube 320  | -              | ISO VG 320             | 7347             | 7341 Synthetic oil, Polyalphaolefin (PAO)     |
| Kroil Sintlube 460  | -              | ISO VG 460             | 7348             | 7341 Synthetic oil, Polyalphaolefin (PAO)     |
| Q3-4612             | Special lub.   | NLGI 1                 | 7523             | 7523 Kiln and mill gear units spray lubricant |

## Kuwait Petroleum

| <u>Product name</u> | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                           |
|---------------------|----------------|------------------------|------------------|--|
| Q8 Chopin 46        | -              | ISO VG 46              | 7115             | 7114 Oil for pneumatic tool                        |
| Q8 El Greco 150     | Special lub.   | ISO VG 150             | 7302             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Q8 El Greco 150     | -              | ISO VG 150             | 7345             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Q8 El Greco 220     | Special lub.   | ISO VG 220             | 7303             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Q8 El Greco 220     | -              | ISO VG 220             | 7346             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Q8 El Greco 320     | Special lub.   | ISO VG 320             | 7304             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Q8 El Greco 320     | -              | ISO VG 320             | 7347             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Q8 El Greco 460     | Special lub.   | ISO VG 460             | 7305             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Q8 El Greco 460     | -              | ISO VG 460             | 7348             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Q8 Gade 150         | -              | ISO VG 150             | 7353             | 7353 Synthetic oil, Polyglycol (PG)                |
| Q8 Gade 220         | -              | ISO VG 220             | 7354             | 7353 Synthetic oil, Polyglycol (PG)                |
| Q8 Gade 320         | -              | ISO VG 320             | 7355             | 7353 Synthetic oil, Polyglycol (PG)                |
| Q8 Gade 460         | -              | ISO VG 460             | 7356             | 7353 Synthetic oil, Polyglycol (PG)                |
| Q8 Gade 680         | -              | ISO VG 680             | 7357             | 7353 Synthetic oil, Polyglycol (PG)                |



|                     |              |                                  |      |   |
|---------------------|--------------|----------------------------------|------|---|
| Q8 Giotto           | -            | ISO VG                           | 7265 | 7265 Hand lubricant, open gear unit           |
| Q8 Giotto           | -            | ISO VG                           | 7285 | 7285 Wire lubricant                           |
| Q8 Gluck M          | -            | ISO VG 32                        | 7175 | 7175 Heat transfer oil                        |
| Q8 Goya 100         | -            | ISO VG 100                       | 7152 | 7152 Enclosed Gear Unit oil                   |
| Q8 Goya 1000        | -            | ISO VG 1000                      | 7158 | 7152 Enclosed Gear Unit oil                   |
| Q8 Goya 150         | -            | ISO VG 150                       | 7153 | 7152 Enclosed Gear Unit oil                   |
| Q8 Goya 150         | -            | ISO VG 150                       | 7123 | 7123 Oil for rotary blower                    |
| Q8 Goya 220         | -            | ISO VG 220                       | 7154 | 7152 Enclosed Gear Unit oil                   |
| Q8 Goya 220         | -            | ISO VG 220                       | 7124 | 7123 Oil for rotary blower                    |
| Q8 Goya 320         | -            | ISO VG 320                       | 7155 | 7152 Enclosed Gear Unit oil                   |
| Q8 Goya 460         | -            | ISO VG 460                       | 7156 | 7152 Enclosed Gear Unit oil                   |
| Q8 Goya 680         | -            | ISO VG 680                       | 7157 | 7152 Enclosed Gear Unit oil                   |
| Q8 Goya NT 150      | Special lub. | ISO VG 150                       | 7163 | 7162 Enclosed Gear Unit mineral oil (Flender) |
| Q8 Goya NT 220      | Special lub. | ISO VG 220                       | 7164 | 7162 Enclosed Gear Unit mineral oil (Flender) |
| Q8 Goya NT 320      | Special lub. | ISO VG 320                       | 7165 | 7162 Enclosed Gear Unit mineral oil (Flender) |
| Q8 Handel 15        | -            | ISO VG 15                        | 7013 | 7012 Hydraulic oil, HV                        |
| Q8 Haydn 10         | -            | ISO VG 10                        | 7021 | 7021 Hydraulic oil, HM                        |
| Q8 Haydn 100        | -            | ISO VG 100                       | 7027 | 7021 Hydraulic oil, HM                        |
| Q8 Haydn 22         | Special lub. | ISO VG 22                        | 7019 | 7019 Hydraulic oil, HM (Flender FLUDEX)       |
| Q8 Haydn 22         | -            | ISO VG 22                        | 7215 | 7215 Flushing oil                             |
| Q8 Haydn 32         | -            | ISO VG 32                        | 7024 | 7021 Hydraulic oil, HM                        |
| Q8 Haydn 46         | -            | ISO VG 46                        | 7025 | 7021 Hydraulic oil, HM                        |
| Q8 Haydn 68         | -            | ISO VG 68                        | 7026 | 7021 Hydraulic oil, HM                        |
| Q8 Heller 22        | -            | ISO VG 22                        | 7215 | 7215 Flushing oil                             |
| Q8 Heller 32        | -            | ISO VG 32                        | 7024 | 7021 Hydraulic oil, HM                        |
| Q8 Michelangelo S   | -            | ISO VG 7 / 10                    | 7195 | 7195 Transformer oil                          |
| Q8 Rembrandt EP 2   | -            | NLGI 2                           | 7425 | 7425 Grease, Multipurpose                     |
| Q8 Rubens LT 2      | -            | NLGI 2                           | 7435 | 7434 Grease, Low-temperature                  |
| Q8 Rubens WB        | -            | NLGI 2                           | 7445 | 7445 Grease, High-temperature                 |
| Q8 Ruysdael WR 2    | -            | NLGI 1 or 2                      | 7455 | 7455 Grease, Low-speed                        |
| Q8 Schubert 100     | -            | ISO VG 100                       | 7036 | 7035 Compressor oil, mineral                  |
| Q8 Schubert 68      | -            | ISO VG 68                        | 7034 | 7035 Compressor oil, mineral                  |
| Q8 Schumann 100     | -            | ISO VG 100                       | 7344 | 7341 Synthetic oil, Polyalphaolefin (PAO)     |
| Q8 Schumann 150     | -            | ISO VG 150                       | 7345 | 7341 Synthetic oil, Polyalphaolefin (PAO)     |
| Q8 Schumann 32      | -            | ISO VG 32                        | 7341 | 7341 Synthetic oil, Polyalphaolefin (PAO)     |
| Q8 Schumann 46      | -            | ISO VG 46                        | 7342 | 7341 Synthetic oil, Polyalphaolefin (PAO)     |
| Q8 T 670 5W-40      | -            | SAE 0W-40/5W-40. Full synthetic. | 7234 | 7234 Engine oil                               |
| Q8 T 720 SAE 15W-40 | -            | SAE 15W-40                       | 7235 | 7234 Engine oil                               |
| Q8 Van Gogh 32      | -            | ISO VG 32                        | 7053 | 7053 Turbine oil                              |
| Q8 Van Gogh 46      | -            | ISO VG 46                        | 7054 | 7053 Turbine oil                              |
| Q8 Van Gogh 68      | -            | ISO VG 68                        | 7055 | 7053 Turbine oil                              |

## Mobil

| <b>Product name</b>                          | <b>Special</b> | <b>Standard ISO VG</b>           | <b>Mat. code</b> | <b>Type of lubricant</b>                       |
|--|----------------|----------------------------------|------------------|--|
| Glygoyle Grease 00                           | Special lub.   | NLGI 00                          | 7540             | 7540 Grease. Low viscosity (SEW)               |
| Mobil 1 SAE 0W-40                            | -              | SAE 0W-40/5W-40. Full synthetic. | 7234             | 7234 Engine oil                                |
| Mobil 600W Super Cylinder Oil                | -              | ISO VG 460                       | 7134             | 7134 Cylinder oil                              |
| Mobil Almo 525                               | -              | ISO VG 46                        | 7115             | 7114 Oil for pneumatic tool                    |
| Mobil Delvac MX (15W-40)                     | -              | SAE 15W-40                       | 7235             | 7234 Engine oil                                |
| Mobil DTE 11M                                | Special lub.   | ISO VG 15 - 22                   | 7005             | 7005 Hydraulic oil HM. (SEW)                   |
| Mobil DTE 11M                                | -              | ISO VG 15                        | 7013             | 7012 Hydraulic oil, HV                         |
| Mobil DTE 13M                                | Special lub.   | ISO VG 32 - 46 - 68              | 7006             | 7005 Hydraulic oil HM. (SEW)                   |
| Mobil DTE 21                                 | -              | ISO VG 10                        | 7012             | 7012 Hydraulic oil, HV                         |
| Mobil DTE 21                                 | -              | ISO VG 10                        | 7021             | 7021 Hydraulic oil, HM                         |
| Mobil DTE 22                                 | Special lub.   | ISO VG 22                        | 7019             | 7019 Hydraulic oil, HM (Flender FLUDEX)        |
| Mobil DTE 22                                 | -              | ISO VG 22                        | 7023             | 7021 Hydraulic oil, HM                         |
| Mobil DTE 22                                 | -              | ISO VG 22                        | 7215             | 7215 Flushing oil                              |
| Mobil DTE 24                                 | -              | ISO VG 32                        | 7024             | 7021 Hydraulic oil, HM                         |
| Mobil DTE 24                                 | Special lub.   | ISO VG 32                        | 7020             | 7019 Hydraulic oil, HM (Flender FLUDEX)        |
| Mobil DTE 24                                 | Special lub.   | ISO VG 32                        | 7018             | 7018 Hydraulic, HM. Low temperature            |
| Mobil DTE 25                                 | -              | ISO VG 46                        | 7025             | 7021 Hydraulic oil, HM                         |
| Mobil DTE 26                                 | -              | ISO VG 68                        | 7026             | 7021 Hydraulic oil, HM                         |
| Mobil DTE 27                                 | -              | ISO VG 100                       | 7027             | 7021 Hydraulic oil, HM                         |
| Mobil DTE 732                                | -              | ISO VG 32                        | 7053             | 7053 Turbine oil                               |
| Mobil DTE 746                                | -              | ISO VG 46                        | 7054             | 7053 Turbine oil                               |
| Mobil DTE oil heavy                          | -              | ISO VG 100                       | 7056             | 7053 Turbine oil                               |
| Mobil DTE oil heavy medium                   | -              | ISO VG 68                        | 7055             | 7053 Turbine oil                               |
| Mobil Extra Hecla Super Cylinder Oil Mineral | -              | ISO VG 1000                      | 7136             | 7134 Cylinder oil                              |
| Mobil Glygoyle 1000                          | -              | ISO VG 1000                      | 7358             | 7353 Synthetic oil, Polyglycol (PG)            |
| Mobil Glygoyle 150                           | -              | ISO VG 150                       | 7353             | 7353 Synthetic oil, Polyglycol (PG)            |
| Mobil Glygoyle 22                            | Special lub.   | ISO VG 150                       | 7363             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Mobil Glygoyle 220                           | Special lub.   | ISO VG 220                       | 7373             | 7373 Synthetic oil, Polyglycol (PG, SEW)       |
| Mobil Glygoyle 220                           | Special lub.   | ISO VG 220                       | 7383             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Mobil Glygoyle 220                           | -              | ISO VG 220                       | 7354             | 7353 Synthetic oil, Polyglycol (PG)            |
| Mobil Glygoyle 30                            | Special lub.   | ISO VG 220                       | 7364             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Mobil Glygoyle 320                           | Special lub.   | ISO VG 320                       | 7384             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Mobil Glygoyle 320                           | -              | ISO VG 320                       | 7355             | 7353 Synthetic oil, Polyglycol (PG)            |
| Mobil Glygoyle 320                           | Special lub.   | ISO VG 320                       | 7365             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Mobil Glygoyle 460                           | Special lub.   | ISO VG 460                       | 7366             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Mobil Glygoyle 460                           | Special lub.   | ISO VG 460                       | 7385             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Mobil Glygoyle 460                           | -              | ISO VG 460                       | 7356             | 7353 Synthetic oil, Polyglycol (PG)            |
| Mobil Glygoyle 680                           | Special lub.   | ISO VG 680                       | 7386             | 7363 Synthetic oil, Polyglycol (PG, Rossi)     |
| Mobil Glygoyle 680                           | -              | ISO VG 680                       | 7357             | 7353 Synthetic oil, Polyglycol (PG)            |
| Mobil Rarus 426                              | -              | ISO VG 68                        | 7034             | 7035 Compressor oil, mineral                   |
| Mobil Rarus 427                              | -              | ISO VG 100                       | 7036             | 7035 Compressor oil, mineral                   |
| Mobil Rarus SHC 1024                         | -              | ISO VG 32                        | 7032             | 7032 Compressor oil, synthetic                 |
| Mobil Rarus SHC 1025                         | -              | ISO VG 46                        | 7033             | 7032 Compressor oil, synthetic                 |
| Mobil Rarus SHC 1026                         | Special lub.   | ISO VG 68                        | 7035             | 7032 Compressor oil, synthetic                 |
| Mobil SHC 624                                | Special lub.   | ISO VG 32                        | 7329             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW) |
| Mobil SHC 626                                | Special lub.   | ISO VG 68                        | 7343             | 7341 Synthetic oil, Polyalphaolefin (PAO)      |
| Mobil SHC 627                                | -              | ISO VG 100                       | 7344             | 7341 Synthetic oil, Polyalphaolefin (PAO)      |

|                       |              |                  |      |  |
|-----------------------|--------------|------------------|------|--|
| Mobil SHC 629         | Special lub. | ISO VG 150       | 7332 | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)     |
| Mobil SHC 629         | Special lub. | ISO VG 150       | 7302 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Mobil SHC 629         | -            | ISO VG 150       | 7345 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mobil SHC 630         | Special lub. | ISO VG 220       | 7333 | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)     |
| Mobil SHC 630         | Special lub. | ISO VG 220       | 7303 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Mobil SHC 630         | -            | ISO VG 220       | 7346 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mobil SHC 632         | Special lub. | ISO VG 320       | 7304 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Mobil SHC 632         | -            | ISO VG 320       | 7347 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mobil SHC 634         | -            | ISO VG 460       | 7348 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mobil SHC 634         | Special lub. | ISO VG 460       | 7305 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Mobil SHC 634         | Special lub. | ISO VG 460       | 7335 | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)     |
| Mobil SHC 636         | -            | ISO VG 680       | 7349 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mobil SHC 639         | Special lub. | ISO VG 1000      | 7307 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Mobil SHC 639         | Special lub. | ISO VG 1000      | 7350 | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mobil Unirex N3       | -            | NLGI 3           | 7426 | 7425 Grease, Multipurpose                          |
| Mobil Vacuoline 528   | -            | ISO VG 150       | 7123 | 7123 Oil for rotary blower                         |
| Mobil Vacuoline 533   | -            | ISO VG 220       | 7124 | 7123 Oil for rotary blower                         |
| Mobillect 44          | -            | ISO VG 7 / 10    | 7195 | 7195 Transformer oil                               |
| Mobilfluid 125        | Special lub. | ISO VG 32        | 7020 | 7019 Hydraulic oil, HM (Flender FLUDEX)            |
| Mobilgear 600 XP 100  | Special lub. | ISO VG 100       | 7162 | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Mobilgear 600 XP 100  | Special lub. | ISO VG 100 - 150 | 7141 | 7141 Enclosed Gear Unit oil (SEW)                  |
| Mobilgear 600 XP 100  | -            | ISO VG 100       | 7152 | 7152 Enclosed Gear Unit oil                        |
| Mobilgear 600 XP 150  | -            | ISO VG 150       | 7153 | 7152 Enclosed Gear Unit oil                        |
| Mobilgear 600 XP 150  | Special lub. | ISO VG 150       | 7148 | 7148 Enclosed Gear Unit. Mineral oil (Rossi)       |
| Mobilgear 600 XP 150  | Special lub. | ISO VG 150       | 7163 | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Mobilgear 600 XP 220  | -            | ISO VG 220       | 7154 | 7152 Enclosed Gear Unit oil                        |
| Mobilgear 600 XP 220  | Special lub. | ISO VG 220       | 7164 | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Mobilgear 600 XP 220  | Special lub. | ISO VG 220       | 7143 | 7141 Enclosed Gear Unit oil (SEW)                  |
| Mobilgear 600 XP 220  | Special lub. | ISO VG 220       | 7149 | 7148 Enclosed Gear Unit. Mineral oil (Rossi)       |
| Mobilgear 600 XP 320  | Special lub. | ISO VG 320       | 7150 | 7148 Enclosed Gear Unit. Mineral oil (Rossi)       |
| Mobilgear 600 XP 320  | -            | ISO VG 320       | 7155 | 7152 Enclosed Gear Unit oil                        |
| Mobilgear 600 XP 320  | Special lub. | ISO VG 320       | 7165 | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Mobilgear 600 XP 460  | Special lub. | ISO VG 460       | 7166 | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Mobilgear 600 XP 460  | Special lub. | ISO VG 460       | 7151 | 7148 Enclosed Gear Unit. Mineral oil (Rossi)       |
| Mobilgear 600 XP 460  | -            | ISO VG 460       | 7156 | 7152 Enclosed Gear Unit oil                        |
| Mobilgear 600 XP 680  | Special lub. | ISO VG 680       | 7146 | 7141 Enclosed Gear Unit oil (SEW)                  |
| Mobilgear 600 XP 680  | -            | ISO VG 680       | 7157 | 7152 Enclosed Gear Unit oil                        |
| Mobilgear 600 XP 680  | Special lub. | ISO VG 680       | 7167 | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| Mobilgear OGL 007     | Special lub. | NLGI 0 / 00      | 7527 | 7523 Kiln and mill gear units spray lubricant      |
| Mobilgear OGL 009     | Special lub. | NLGI 0 / 00      | 7529 | 7523 Kiln and mill gear units spray lubricant      |
| Mobilgear OGL 009     | Special lub. | NLGI 0 / 00      | 7531 | 7523 Kiln and mill gear units spray lubricant      |
| Mobilgear OGL 461     | -            | ISO VG           | 7265 | 7265 Hand lubricant, open gear unit                |
| Mobilgear SHC XMP 150 | Special lub. | ISO VG 150       | 7322 | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)   |
| Mobilgear SHC XMP 220 | Special lub. | ISO VG 220       | 7323 | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)   |
| Mobilgear SHC XMP 320 | Special lub. | ISO VG 320       | 7324 | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)   |
| Mobilgear SHC XMP 460 | Special lub. | ISO VG 460       | 7325 | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)   |
| Mobilgrease XHP 222   | -            | NLGI 2           | 7425 | 7425 Grease, Multipurpose                          |
| Mobilgrease XHP 461   | -            | ISO VG           | 7285 | 7285 Wire lubricant                                |
| Mobilith SHC 100      | -            | NLGI 2           | 7435 | 7434 Grease, Low-temperature                       |
| Mobilith SHC 1500     | -            | NLGI 2           | 7457 | 7455 Grease, Low-speed                             |
| Mobilith SHC 1500     | -            | NLGI 1 or 2      | 7455 | 7455 Grease, Low-speed                             |
| Mobilith SHC 220      | -            | NLGI 2           | 7435 | 7434 Grease, Low-temperature                       |
| Mobiltherm 605        | -            | ISO VG 32        | 7175 | 7175 Heat transfer oil                             |
| Mobilux EP 004        | Special lub. | NLGI 000-0       | 7541 | 7540 Grease. Low viscosity (SEW)                   |
| Mobilux EP 2          | -            | NLGI 2           | 7425 | 7425 Grease, Multipurpose                          |

## Rocol

| <u>Product name</u>    | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>            |
|------------------------|----------------|------------------------|------------------|-------------------------------------|
| Sapphire 2             | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose           |
| Sapphire Hi-Power 100  | -              | ISO VG 100             | 7036             | 7035 Compressor oil, mineral        |
| Sapphire Hi-Power 22   | -              | ISO VG 15              | 7013             | 7012 Hydraulic oil, HV              |
| Sapphire Hi-Power 32   | -              | ISO VG 32              | 7024             | 7021 Hydraulic oil, HM              |
| Sapphire Hi-Power 46   | -              | ISO VG 46              | 7025             | 7021 Hydraulic oil, HM              |
| Sapphire Hi-Power 68   | -              | ISO VG 68              | 7026             | 7021 Hydraulic oil, HM              |
| Sapphire Hi-Power 68   | -              | ISO VG 68              | 7034             | 7035 Compressor oil, mineral        |
| Sapphire Hi-Torque 100 | -              | ISO VG 100             | 7152             | 7152 Enclosed Gear Unit oil         |
| Sapphire Hi-Torque 220 | -              | ISO VG 220             | 7154             | 7152 Enclosed Gear Unit oil         |
| Sapphire Hi-Torque 220 | -              | ISO VG 220             | 7124             | 7123 Oil for rotary blower          |
| Sapphire Hi-Torque 320 | -              | ISO VG 320             | 7155             | 7152 Enclosed Gear Unit oil         |
| Sapphire Hi-Torque 460 | -              | ISO VG 460             | 7156             | 7152 Enclosed Gear Unit oil         |
| Sapphire Hi-Torque 680 | -              | ISO VG 680             | 7157             | 7152 Enclosed Gear Unit oil         |
| Sapphire Lo-Temp 2     | -              | NLGI 2                 | 7435             | 7434 Grease, Low-temperature        |
| Sapphire Premier       | -              | NLGI 2                 | 7445             | 7445 Grease, High-temperature       |
| Tufgear Universal      | -              | ISO VG                 | 7265             | 7265 Hand lubricant, open gear unit |
| Wire Rope Dressing     | -              | ISO VG                 | 7285             | 7285 Wire lubricant                 |

## Shell

| <u>Product name</u> | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>         |
|---------------------|----------------|------------------------|------------------|----------------------------------|
| Ensis Fluid DW 2462 | -              | ISO VG                 | 7285             | 7285 Wire lubricant              |
| Shell Albida EMS 2  | -              | NLGI 2                 | 7435             | 7434 Grease, Low-temperature     |
| Shell Albida EP 1   | -              | NLGI 1                 | 7434             | 7434 Grease, Low-temperature     |
| Shell Albida EP 2   | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose        |
| Shell Albida HD 2   | -              | NLGI 1 or 2            | 7455             | 7455 Grease, Low-speed           |
| Shell Alvania EP 2  | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose        |
| Shell Alvania GL 00 | Special lub.   | NLGI 000-0             | 7541             | 7540 Grease. Low viscosity (SEW) |
| Shell Alvania RL 3  | -              | NLGI 3                 | 7426             | 7425 Grease, Multipurpose        |
| Shell Corena AS 32  | -              | ISO VG 32              | 7032             | 7032 Compressor oil, synthetic   |
| Shell Corena AS 46  | -              | ISO VG 46              | 7033             | 7032 Compressor oil, synthetic   |
| Shell Corena P 100  | -              | ISO VG 100             | 7036             | 7035 Compressor oil, mineral     |
| Shell Corena P 68   | -              | ISO VG 68              | 7034             | 7035 Compressor oil, mineral     |

|                          |              |                                  |      |  |
|--------------------------|--------------|----------------------------------|------|--|
| Shell Corena S 100       | -            | ISO VG 100                       | 7036 | 7035 Compressor oil, mineral                           |
| Shell Corena S 68        | -            | ISO VG 68                        | 7034 | 7035 Compressor oil, mineral                           |
| Shell Diala B            | -            | ISO VG 15                        | 7196 | 7195 Transformer oil                                   |
| Shell Diala D            | -            | ISO VG 7 / 10                    | 7195 | 7195 Transformer oil                                   |
| Shell Helis Ultra 0W-40  | -            | SAE 0W-40/5W-40. Full synthetic. | 7234 | 7234 Engine oil  |
| Shell Malleus GL 205     | Special lub. | ISO VG                           | 7253 | 7253 Kiln and mill gear units lubricant                |
| Shell Malleus GL 3500    | Special lub. | NLGI 0 / 00                      | 7529 | 7523 Kiln and mill gear units spray lubricant          |
| Shell Malleus GL 400     | Special lub. | ISO VG                           | 7257 | 7253 Kiln and mill gear units lubricant                |
| Shell Malleus GL 400     | Special lub. | NLGI 0 / 00                      | 7527 | 7523 Kiln and mill gear units spray lubricant          |
| Shell Malleus GL 500     | Special lub. | NLGI 1                           | 7523 | 7523 Kiln and mill gear units spray lubricant          |
| Shell Malleus OGH        | -            | ISO VG                           | 7265 | 7265 Hand lubricant, open gear unit                    |
| Shell Malleus RN         | Special lub. | ISO VG                           | 7256 | 7253 Kiln and mill gear units lubricant                |
| Shell Malleus RN         | Special lub. | NLGI 0 / 00                      | 7525 | 7523 Kiln and mill gear units spray lubricant          |
| Shell Morlina 150        | -            | ISO VG 150                       | 7123 | 7123 Oil for rotary blower                             |
| Shell Morlina 220        | -            | ISO VG 220                       | 7124 | 7123 Oil for rotary blower                             |
| Shell Omala 100          | -            | ISO VG 100                       | 7152 | 7152 Enclosed Gear Unit oil                            |
| Shell Omala 100          | Special lub. | ISO VG 100 - 150                 | 7141 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Shell Omala 1000         | -            | ISO VG 1000                      | 7158 | 7152 Enclosed Gear Unit oil                            |
| Shell Omala 150          | -            | ISO VG 150                       | 7123 | 7123 Oil for rotary blower                             |
| Shell Omala 150          | Special lub. | ISO VG 150                       | 7148 | 7148 Enclosed Gear Unit. Mineral oil (Rossi)           |
| Shell Omala 150          | -            | ISO VG 150                       | 7153 | 7152 Enclosed Gear Unit oil                            |
| Shell Omala 220          | Special lub. | ISO VG 220                       | 7149 | 7148 Enclosed Gear Unit. Mineral oil (Rossi)           |
| Shell Omala 220          | -            | ISO VG 220                       | 7124 | 7123 Oil for rotary blower                             |
| Shell Omala 220          | -            | ISO VG 220                       | 7154 | 7152 Enclosed Gear Unit oil                            |
| Shell Omala 220          | Special lub. | ISO VG 220                       | 7143 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Shell Omala 320          | -            | ISO VG 320                       | 7155 | 7152 Enclosed Gear Unit oil                            |
| Shell Omala 320          | Special lub. | ISO VG 320                       | 7150 | 7148 Enclosed Gear Unit. Mineral oil (Rossi)           |
| Shell Omala 460          | -            | ISO VG 460                       | 7156 | 7152 Enclosed Gear Unit oil                            |
| Shell Omala 460          | Special lub. | ISO VG 460                       | 7151 | 7148 Enclosed Gear Unit. Mineral oil (Rossi)           |
| Shell Omala 680          | Special lub. | ISO VG 680                       | 7146 | 7141 Enclosed Gear Unit oil (SEW)                      |
| Shell Omala 680          | -            | ISO VG 680                       | 7157 | 7152 Enclosed Gear Unit oil                            |
| Shell Omala F 220        | Special lub. | ISO VG 220                       | 7164 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Shell Omala F 320        | Special lub. | ISO VG 320                       | 7165 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Shell Omala F 460        | Special lub. | ISO VG 460                       | 7166 | 7162 Enclosed Gear Unit mineral oil (Flender)          |
| Shell Omala HD 100       | -            | ISO VG 100                       | 7344 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Shell Omala HD 1000      | Special lub. | ISO VG 1000                      | 7350 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Shell Omala HD 150       | Special lub. | ISO VG 150                       | 7302 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Shell Omala HD 150       | Special lub. | ISO VG 150                       | 7332 | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)         |
| Shell Omala HD 150       | -            | ISO VG 150                       | 7345 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Shell Omala HD 220       | -            | ISO VG 220                       | 7346 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Shell Omala HD 220       | Special lub. | ISO VG 220                       | 7303 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Shell Omala HD 220       | Special lub. | ISO VG 220                       | 7333 | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)         |
| Shell Omala HD 320       | -            | ISO VG 320                       | 7347 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Shell Omala HD 320       | Special lub. | ISO VG 320                       | 7304 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Shell Omala HD 460       | Special lub. | ISO VG 460                       | 7305 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Shell Omala HD 460       | -            | ISO VG 460                       | 7348 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Shell Omala HD 460       | Special lub. | ISO VG 460                       | 7335 | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)         |
| Shell Omala HD 680       | -            | ISO VG 680                       | 7349 | 7341 Synthetic oil, Polyalphaolefin (PAO)              |
| Shell Omala HD 680       | Special lub. | ISO VG 680                       | 7306 | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender)     |
| Shell Retinax LX 2       | -            | NLGI 2                           | 7445 | 7445 Grease, High-temperature                          |
| Shell Rimula R3 U 15W-40 | -            | SAE 15W-40                       | 7235 | 7234 Engine oil  |
| Shell Stamina EP 2       | -            | NLGI 2                           | 7445 | 7445 Grease, High-temperature                          |
| Shell Stamina HDS 2      | -            | NLGI 1 or 2                      | 7455 | 7455 Grease, Low-speed                                 |
| Shell Stamina HDS 2      | -            | NLGI 2                           | 7445 | 7445 Grease, High-temperature                          |
| Shell Tegula 32          | Special lub. | ISO VG 32                        | 7020 | 7019 Hydraulic oil, HM (Flender FLUDEX)                |
| Shell Tellus 22          | -            | ISO VG 22                        | 7215 | 7215 Flushing oil                                      |
| Shell Tellus 22          | -            | ISO VG 22                        | 7023 | 7021 Hydraulic oil, HM                                 |
| Shell Tellus 32          | -            | ISO VG 32                        | 7024 | 7021 Hydraulic oil, HM                                 |
| Shell Tellus 46          | -            | ISO VG 46                        | 7025 | 7021 Hydraulic oil, HM                                 |
| Shell Tellus 68          | -            | ISO VG 68                        | 7026 | 7021 Hydraulic oil, HM                                 |
| Shell Tellus EE 32       | Special lub. | ISO VG 32                        | 7018 | 7018 Hydraulic, HM. Low temperature                    |
| Shell Tellus S 100       | -            | ISO VG 100                       | 7027 | 7021 Hydraulic oil, HM                                 |
| Shell Tellus T 15        | Special lub. | ISO VG 15 - 22                   | 7005 | 7005 Hydraulic oil HM. (SEW)                           |
| Shell Tellus T 15        | -            | ISO VG 15                        | 7013 | 7012 Hydraulic oil, HV                                 |
| Shell Tellus T 22        | Special lub. | ISO VG 22                        | 7019 | 7019 Hydraulic oil, HM (Flender FLUDEX)                |
| Shell Tellus T 32        | Special lub. | ISO VG 32 - 46 - 68              | 7006 | 7005 Hydraulic oil HM. (SEW)                           |
| Shell Tellus T 32        | Special lub. | ISO VG 32                        | 7018 | 7018 Hydraulic, HM. Low temperature                    |
| Shell Thermia B          | -            | ISO VG 32                        | 7175 | 7175 Heat transfer oil                                 |
| Shell Tivela GL 00       | Special lub. | NLGI 00                          | 7540 | 7540 Grease. Low viscosity (SEW)                       |
| Shell Tivela S 1000      | -            | ISO VG 1000                      | 7358 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Shell Tivela S 1000      | Special lub. | ISO VG 1000                      | 7396 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Shell Tivela S 1000      | Special lub. | ISO VG 1000                      | 7314 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Shell Tivela S 150       | Special lub. | ISO VG 150                       | 7363 | 7363 Synthetic oil, Polyglycol (PG, Rossi)             |
| Shell Tivela S 150       | Special lub. | ISO VG 150                       | 7391 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Shell Tivela S 150       | Special lub. | ISO VG 150                       | 7309 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Shell Tivela S 150       | -            | ISO VG 150                       | 7353 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Shell Tivela S 220       | -            | ISO VG 220                       | 7354 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Shell Tivela S 220       | Special lub. | ISO VG 220                       | 7392 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Shell Tivela S 220       | Special lub. | ISO VG 220                       | 7373 | 7373 Synthetic oil, Polyglycol (PG, SEW)               |
| Shell Tivela S 220       | Special lub. | ISO VG 220                       | 7364 | 7363 Synthetic oil, Polyglycol (PG, Rossi)             |
| Shell Tivela S 220       | Special lub. | ISO VG 220                       | 7383 | 7363 Synthetic oil, Polyglycol (PG, Rossi)             |
| Shell Tivela S 220       | Special lub. | ISO VG 220                       | 7310 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Shell Tivela S 320       | Special lub. | ISO VG 320                       | 7311 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Shell Tivela S 320       | Special lub. | ISO VG 320                       | 7384 | 7363 Synthetic oil, Polyglycol (PG, Rossi)             |
| Shell Tivela S 320       | Special lub. | ISO VG 320                       | 7365 | 7363 Synthetic oil, Polyglycol (PG, Rossi)             |
| Shell Tivela S 320       | -            | ISO VG 320                       | 7355 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Shell Tivela S 320       | Special lub. | ISO VG 320                       | 7393 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Shell Tivela S 460       | Special lub. | ISO VG 460                       | 7366 | 7363 Synthetic oil, Polyglycol (PG, Rossi)             |
| Shell Tivela S 460       | Special lub. | ISO VG 460                       | 7394 | 7390 Synthetic oil, Polyglycol (PG, Flender)           |
| Shell Tivela S 460       | Special lub. | ISO VG 460                       | 7385 | 7363 Synthetic oil, Polyglycol (PG, Rossi)             |
| Shell Tivela S 460       | Special lub. | ISO VG 460                       | 7312 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Shell Tivela S 460       | -            | ISO VG 460                       | 7356 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Shell Tivela S 680       | Special lub. | ISO VG 680                       | 7313 | 7308 Synthetic oil, polyglycol (PG, Flender Worm gear) |
| Shell Tivela S 680       | -            | ISO VG 680                       | 7357 | 7353 Synthetic oil, Polyglycol (PG)                    |
| Shell Tivela S 680       | Special lub. | ISO VG 680                       | 7386 | 7363 Synthetic oil, Polyglycol (PG, Rossi)             |
| Shell Tivela S 680       | Special lub. | ISO VG 680                       | 7376 | 7373 Synthetic oil, Polyglycol (PG, SEW)               |

|                    |              |             |      |  |
|--------------------|--------------|-------------|------|--|
| Shell Tivela S 680 | Special lub. | ISO VG 680  | 7395 | 7390 Synthetic oil, Polyglycol (PG, Flender) |
| Shell Torcula 32   | -            | ISO VG 32   | 7114 | 7114 Oil for pneumatic tool                  |
| Shell Torcula 46   | -            | ISO VG 46   | 7115 | 7114 Oil for pneumatic tool                  |
| Shell Turbo T 100  | -            | ISO VG 100  | 7056 | 7053 Turbine oil                             |
| Shell Turbo T 32   | -            | ISO VG 32   | 7053 | 7053 Turbine oil                             |
| Shell Turbo T 46   | -            | ISO VG 46   | 7054 | 7053 Turbine oil                             |
| Shell Turbo T 68   | -            | ISO VG 68   | 7055 | 7053 Turbine oil                             |
| Shell Valvata 1000 | -            | ISO VG 1000 | 7136 | 7134 Cylinder oil                            |
| Shell Valvata 460  | -            | ISO VG 460  | 7134 | 7134 Cylinder oil                            |

## SKF

| <u>Product name</u> | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u> |
|---------------------|----------------|------------------------|------------------|--------------------------|
| LGHB 2              | -              | NLGI 2                 | 7457             | 7455 Grease, Low-speed   |

## Statoil

| <u>Product name</u>      | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                           |
|--------------------------|----------------|------------------------|------------------|--|
| CompWay 100              | -              | ISO VG 100             | 7036             | 7035 Compressor oil, mineral                       |
| CompWay 68               | -              | ISO VG 68              | 7034             | 7035 Compressor oil, mineral                       |
| CompWay SX 46            | -              | ISO VG 46              | 7033             | 7032 Compressor oil, synthetic                     |
| CylWay 1000              | -              | ISO VG 1000            | 7136             | 7134 Cylinder oil                                  |
| CylWay 460               | -              | ISO VG 460             | 7134             | 7134 Cylinder oil                                  |
| GreaseWay CaH 92         | -              | NLGI 1 or 2            | 7455             | 7455 Grease, Low-speed                             |
| GreaseWay CaH 92 (spray) | -              | ISO VG                 | 7285             | 7285 Wire lubricant                                |
| HydraWay HM 32           | -              | ISO VG 32              | 7024             | 7021 Hydraulic oil, HM                             |
| HydraWay HM 46           | -              | ISO VG 46              | 7025             | 7021 Hydraulic oil, HM                             |
| HydraWay HM 68           | -              | ISO VG 68              | 7026             | 7021 Hydraulic oil, HM                             |
| HydraWay HMA 22          | -              | ISO VG 22              | 7215             | 7215 Flushing oil                                  |
| HydraWay HMA 32          | -              | ISO VG 32              | 7024             | 7021 Hydraulic oil, HM                             |
| HydraWay HMA 46          | -              | ISO VG 46              | 7025             | 7021 Hydraulic oil, HM                             |
| HydraWay HMA 68          | -              | ISO VG 68              | 7026             | 7021 Hydraulic oil, HM                             |
| HydraWay HV 22           | -              | ISO VG 22              | 7215             | 7215 Flushing oil                                  |
| HydraWay HVXA 15         | Special lub.   | ISO VG 15 - 22         | 7005             | 7005 Hydraulic oil HM. (SEW)                       |
| HydraWay HVXA 15         | -              | ISO VG 15              | 7013             | 7012 Hydraulic oil, HV                             |
| HydraWay HVXA 32         | Special lub.   | ISO VG 32 - 46 - 68    | 7006             | 7005 Hydraulic oil HM. (SEW)                       |
| HydraWay HVXA 46         | Special lub.   | ISO VG 32 - 46 - 68    | 7006             | 7005 Hydraulic oil HM. (SEW)                       |
| HydraWay HVXA 68         | Special lub.   | ISO VG 32 - 46 - 68    | 7006             | 7005 Hydraulic oil HM. (SEW)                       |
| LoadWay EP 100           | -              | ISO VG 100             | 7152             | 7152 Enclosed Gear Unit oil                        |
| LoadWay EP 100           | Special lub.   | ISO VG 100 - 150       | 7141             | 7141 Enclosed Gear Unit oil (SEW)                  |
| LoadWay EP 1000          | -              | ISO VG 1000            | 7158             | 7152 Enclosed Gear Unit oil                        |
| LoadWay EP 150           | Special lub.   | ISO VG 150             | 7163             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| LoadWay EP 150           | -              | ISO VG 150             | 7153             | 7152 Enclosed Gear Unit oil                        |
| LoadWay EP 220           | Special lub.   | ISO VG 220             | 7143             | 7141 Enclosed Gear Unit oil (SEW)                  |
| LoadWay EP 220           | Special lub.   | ISO VG 220             | 7164             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| LoadWay EP 220           | -              | ISO VG 220             | 7154             | 7152 Enclosed Gear Unit oil                        |
| LoadWay EP 320           | Special lub.   | ISO VG 320             | 7165             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| LoadWay EP 320           | -              | ISO VG 320             | 7155             | 7152 Enclosed Gear Unit oil                        |
| LoadWay EP 460           | Special lub.   | ISO VG 460             | 7166             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| LoadWay EP 460           | -              | ISO VG 460             | 7156             | 7152 Enclosed Gear Unit oil                        |
| LoadWay EP 680           | Special lub.   | ISO VG 680             | 7146             | 7141 Enclosed Gear Unit oil (SEW)                  |
| LoadWay EP 680           | -              | ISO VG 680             | 7157             | 7152 Enclosed Gear Unit oil                        |
| LoadWay EP 680           | Special lub.   | ISO VG 680             | 7167             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| LoadWay PG 150           | -              | ISO VG 150             | 7353             | 7353 Synthetic oil, Polyglycol (PG)                |
| LoadWay PG 220           | -              | ISO VG 220             | 7354             | 7353 Synthetic oil, Polyglycol (PG)                |
| LoadWay PG 220           | Special lub.   | ISO VG 220             | 7373             | 7373 Synthetic oil, Polyglycol (PG, SEW)           |
| LoadWay PG 320           | -              | ISO VG 320             | 7355             | 7353 Synthetic oil, Polyglycol (PG)                |
| LoadWay PG 460           | -              | ISO VG 460             | 7356             | 7353 Synthetic oil, Polyglycol (PG)                |
| LoadWay PG 680           | Special lub.   | ISO VG 680             | 7376             | 7373 Synthetic oil, Polyglycol (PG, SEW)           |
| LoadWay PG 680           | -              | ISO VG 680             | 7357             | 7353 Synthetic oil, Polyglycol (PG)                |
| LubeWay XA 150           | -              | ISO VG 150             | 7123             | 7123 Oil for rotary blower                         |
| LubeWay XA 220           | -              | ISO VG 220             | 7124             | 7123 Oil for rotary blower                         |
| Mereta 100               | -              | ISO VG 100             | 7344             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mereta 1000              | Special lub.   | ISO VG 1000            | 7350             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mereta 150               | Special lub.   | ISO VG 150             | 7302             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Mereta 150               | -              | ISO VG 150             | 7345             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mereta 150               | Special lub.   | ISO VG 150             | 7332             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)     |
| Mereta 220               | Special lub.   | ISO VG 220             | 7303             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Mereta 220               | -              | ISO VG 220             | 7346             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mereta 220               | Special lub.   | ISO VG 220             | 7333             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)     |
| Mereta 32                | -              | ISO VG 32              | 7341             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mereta 32                | Special lub.   | ISO VG 32              | 7329             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)     |
| Mereta 320               | -              | ISO VG 320             | 7347             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mereta 320               | Special lub.   | ISO VG 320             | 7304             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| Mereta 46                | -              | ISO VG 46              | 7342             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mereta 460               | Special lub.   | ISO VG 460             | 7335             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)     |
| Mereta 460               | -              | ISO VG 460             | 7348             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| Mereta 680               | -              | ISO VG 680             | 7349             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| PowerWay 15W-40          | -              | SAE 15W-40             | 7235             | 7234 Engine oil                                    |
| RockWay EP 32            | -              | ISO VG 32              | 7114             | 7114 Oil for pneumatic tool                        |
| RockWay EP 46            | -              | ISO VG 46              | 7115             | 7114 Oil for pneumatic tool                        |
| ThermWay 32              | -              | ISO VG 32              | 7175             | 7175 Heat transfer oil                             |
| TurbWay 32               | -              | ISO VG 32              | 7053             | 7053 Turbine oil                                   |
| TurbWay 46               | -              | ISO VG 46              | 7054             | 7053 Turbine oil                                   |
| TurbWay 68               | -              | ISO VG 68              | 7055             | 7053 Turbine oil                                   |
| UniWay Li 62             | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose                          |
| UniWay LiX 625           | -              | NLGI 2                 | 7445             | 7445 Grease, High-temperature                      |
| VoltWay N7 X             | -              | ISO VG 7 / 10          | 7195             | 7195 Transformer oil                               |

## TEXACO

| <u>Product name</u> | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                       |
|---------------------|----------------|------------------------|------------------|--|
| Cetus PAO 46        | Special lub.   | ISO VG 32              | 7329             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW) |
| Multifak 6833 EP 00 | Special lub.   | NLGI 00                | 7540             | 7540 Grease. Low viscosity (SEW)               |
| Multifak EP 000     | Special lub.   | NLGI 000-0             | 7541             | 7540 Grease. Low viscosity (SEW)               |
| Pinnacle EP 100     | -              | ISO VG 100             | 7344             | 7341 Synthetic oil, Polyalphaolefin (PAO)      |
| Rando EP Ashless 46 | Special lub.   | ISO VG 32 - 46 - 68    | 7006             | 7005 Hydraulic oil HM. (SEW)                   |
| Rando-Oil 32        | Special lub.   | ISO VG 32              | 7020             | 7019 Hydraulic oil, HM (Flender FLUDEX)        |
| Synlube CLP 220     | -              | ISO VG 220             | 7354             | 7353 Synthetic oil, Polyglycol (PG)            |
| Synlube CLP 220     | Special lub.   | ISO VG 220             | 7373             | 7373 Synthetic oil, Polyglycol (PG, SEW)       |
| Synlube CLP 680     | -              | ISO VG 680             | 7357             | 7353 Synthetic oil, Polyglycol (PG)            |
| Synlube CLP 680     | Special lub.   | ISO VG 680             | 7376             | 7373 Synthetic oil, Polyglycol (PG, SEW)       |
| Torque Fluid        | Special lub.   | ISO VG 32              | 7020             | 7019 Hydraulic oil, HM (Flender FLUDEX)        |

## Total

| <u>Product name</u> | <u>Special</u> | <u>Standard ISO VG</u> | <u>Mat. code</u> | <u>Type of lubricant</u>                           |
|---------------------|----------------|------------------------|------------------|--|
| ALTIS MV2           | -              | NLGI 2                 | 7445             | 7445 Grease, High-temperature                      |
| AZOLLA AF 32        | -              | ISO VG 32              | 7024             | 7021 Hydraulic oil, HM                             |
| AZOLLA AF 46        | -              | ISO VG 46              | 7025             | 7021 Hydraulic oil, HM                             |
| AZOLLA AF 68        | -              | ISO VG 68              | 7026             | 7021 Hydraulic oil, HM                             |
| AZOLLA ZS 32        | Special lub.   | ISO VG 32              | 7018             | 7018 Hydraulic, HM. Low temperature                |
| CARTER EP 100       | -              | ISO VG 100             | 7152             | 7152 Enclosed Gear Unit oil                        |
| CARTER EP 100       | Special lub.   | ISO VG 100 - 150       | 7141             | 7141 Enclosed Gear Unit oil (SEW)                  |
| CARTER EP 1000      | Special lub.   | ISO VG 1000            | 7168             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| CARTER EP 1000      | -              | ISO VG 1000            | 7158             | 7152 Enclosed Gear Unit oil                        |
| CARTER EP 150       | Special lub.   | ISO VG 150             | 7148             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)       |
| CARTER EP 150       | -              | ISO VG 150             | 7153             | 7152 Enclosed Gear Unit oil                        |
| CARTER EP 220       | Special lub.   | ISO VG 220             | 7143             | 7141 Enclosed Gear Unit oil (SEW)                  |
| CARTER EP 220       | Special lub.   | ISO VG 220             | 7149             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)       |
| CARTER EP 220       | Special lub.   | ISO VG 220             | 7164             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| CARTER EP 220       | -              | ISO VG 220             | 7154             | 7152 Enclosed Gear Unit oil                        |
| CARTER EP 320       | Special lub.   | ISO VG 320             | 7165             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| CARTER EP 320       | Special lub.   | ISO VG 320             | 7150             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)       |
| CARTER EP 320       | -              | ISO VG 320             | 7155             | 7152 Enclosed Gear Unit oil                        |
| CARTER EP 460       | Special lub.   | ISO VG 460             | 7166             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| CARTER EP 460       | Special lub.   | ISO VG 460             | 7151             | 7148 Enclosed Gear Unit. Mineral oil (Rossi)       |
| CARTER EP 460       | -              | ISO VG 460             | 7156             | 7152 Enclosed Gear Unit oil                        |
| CARTER EP 680       | Special lub.   | ISO VG 680             | 7146             | 7141 Enclosed Gear Unit oil (SEW)                  |
| CARTER EP 680       | -              | ISO VG 680             | 7157             | 7152 Enclosed Gear Unit oil                        |
| CARTER EP 680       | Special lub.   | ISO VG 680             | 7167             | 7162 Enclosed Gear Unit mineral oil (Flender)      |
| CARTER MS 100       | -              | ISO VG                 | 7265             | 7265 Hand lubricant, open gear unit                |
| CARTER SH 1000      | Special lub.   | ISO VG 1000            | 7350             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| CARTER SH 1000      | Special lub.   | ISO VG 1000            | 7307             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| CARTER SH 150       | Special lub.   | ISO VG 150             | 7302             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| CARTER SH 150       | Special lub.   | ISO VG 150             | 7332             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)     |
| CARTER SH 150       | -              | ISO VG 150             | 7345             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| CARTER SH 220       | Special lub.   | ISO VG 220             | 7323             | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)   |
| CARTER SH 220       | Special lub.   | ISO VG 220             | 7303             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| CARTER SH 220       | -              | ISO VG 220             | 7346             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| CARTER SH 320       | Special lub.   | ISO VG 320             | 7324             | 7322 Synthetic oil, Polyalphaolefin (PAO, Rossi)   |
| CARTER SH 320       | -              | ISO VG 320             | 7347             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| CARTER SH 320       | Special lub.   | ISO VG 320             | 7304             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| CARTER SH 460       | Special lub.   | ISO VG 460             | 7305             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| CARTER SH 460       | -              | ISO VG 460             | 7348             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| CARTER SH 680       | Special lub.   | ISO VG 680             | 7306             | 7302 Synthetic oil, Polyalphaolefin (PAO, Flender) |
| CARTER SH 680       | -              | ISO VG 680             | 7349             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| CARTER SY 150       | -              | ISO VG 150             | 7353             | 7353 Synthetic oil, Polyglycol (PG)                |
| CARTER SY 220       | -              | ISO VG 220             | 7354             | 7353 Synthetic oil, Polyglycol (PG)                |
| CARTER SY 220       | Special lub.   | ISO VG 220             | 7373             | 7373 Synthetic oil, Polyglycol (PG, SEW)           |
| CARTER SY 320       | -              | ISO VG 320             | 7355             | 7353 Synthetic oil, Polyglycol (PG)                |
| CARTER SY 460       | -              | ISO VG 460             | 7356             | 7353 Synthetic oil, Polyglycol (PG)                |
| CERAN LT            | -              | NLGI 1                 | 7434             | 7434 Grease, Low-temperature                       |
| CERAN MS            | -              | NLGI 1 or 2            | 7455             | 7455 Grease, Low-speed                             |
| CERAN WR2           | -              | NLGI 2                 | 7425             | 7425 Grease, Multipurpose                          |
| CIRKAN RO 150       | -              | ISO VG 150             | 7123             | 7123 Oil for rotary blower                         |
| CIRKAN RO 220       | -              | ISO VG 220             | 7124             | 7123 Oil for rotary blower                         |
| CYL 1000            | -              | ISO VG 1000            | 7136             | 7134 Cylinder oil                                  |
| CYL 460             | -              | ISO VG 460             | 7134             | 7134 Cylinder oil                                  |
| DACNIS P 100        | -              | ISO VG 100             | 7036             | 7035 Compressor oil, mineral                       |
| DACNIS P 68         | -              | ISO VG 68              | 7034             | 7035 Compressor oil, mineral                       |
| DACNIS SH 100       | -              | ISO VG 100             | 7344             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| DACNIS SH 32        | Special lub.   | ISO VG 32              | 7329             | 7329 Synthetic oil, Polyalphaolefin (PAO, SEW)     |
| DACNIS SH 46        | -              | ISO VG 46              | 7342             | 7341 Synthetic oil, Polyalphaolefin (PAO)          |
| EQUIVIVS ZS 15      | Special lub.   | ISO VG 15 - 22         | 7005             | 7005 Hydraulic oil HM. (SEW)                       |
| EQUIVIVS ZS 15      | -              | ISO VG 15              | 7013             | 7012 Hydraulic oil, HV                             |
| Equivis ZS 46       | Special lub.   | ISO VG 32 - 46 - 68    | 7006             | 7005 Hydraulic oil HM. (SEW)                       |
| ISOVOLTINE II       | -              | ISO VG 7 / 10          | 7195             | 7195 Transformer oil                               |
| Marson SY 00        | Special lub.   | NLGI 00                | 7540             | 7540 Grease. Low viscosity (SEW)                   |
| MULTIS 3            | -              | NLGI 3                 | 7426             | 7425 Grease, Multipurpose                          |
| MULTIS EP 00        | Special lub.   | NLGI 000-0             | 7541             | 7540 Grease. Low viscosity (SEW)                   |
| OSYRIS DWX 3000     | -              | ISO VG                 | 7285             | 7285 Wire lubricant                                |
| PNEUMA 32           | -              | ISO VG 32              | 7114             | 7114 Oil for pneumatic tool                        |
| PNEUMA 46           | -              | ISO VG 46              | 7115             | 7114 Oil for pneumatic tool                        |
| PRESLIA 100         | -              | ISO VG 100             | 7056             | 7053 Turbine oil                                   |
| PRESLIA 32          | -              | ISO VG 32              | 7053             | 7053 Turbine oil                                   |
| PRESLIA 46          | -              | ISO VG 46              | 7054             | 7053 Turbine oil                                   |
| PRESLIA 68          | -              | ISO VG 68              | 7055             | 7053 Turbine oil                                   |
| RUBIA XT 15W40      | -              | SAE 15W-40             | 7235             | 7234 Engine oil                                    |
| SERIOIA ETA 32      | -              | ISO VG 32              | 7175             | 7175 Heat transfer oil                             |
| STATERMIC NR        | Special lub.   | NLGI 2                 | 7446             | 7445 Grease, High-temperature                      |
| TORILIS 2500        | -              | ISO VG 22              | 7215             | 7215 Flushing oil                                  |

## 6.4 Appendix 3. Conversion table

| <u>Material code</u> | <u>Type of lubricant</u>                 | <u>Standard ISO VG</u> | <u>Before 1979</u>      | <u>FLSM 1979</u>   | <u>Old designation</u> |
|----------------------|--|------------------------|-------------------------|--------------------|------------------------|
| 7012                 | Hydraulic Oil, HV                        | ISO VG 10              | -                       | 193                | HY-10/15               |
| 7013                 | Hydraulic Oil, HV                        | ISO VG 15              | -                       | 193                | HY-10/15               |
| 7024                 | Hydraulic Oil, HM                        | ISO VG 32              | 192                     | 100                | HY-32                  |
| 7025                 | Hydraulic Oil, HM                        | ISO VG 46              |                         | 101                | HY-46                  |
| 7026                 | Hydraulic Oil, HM                        | ISO VG 68              |                         | 102, 103           | HY-68                  |
| 7034                 | Compressor Oil                           | ISO VG 68              |                         | 112                | CP-68                  |
| 7036                 | Compressor Oil                           | ISO VG 100             |                         | 113                | CP-100                 |
| 7053                 | Turbine oil for rotary air compressor    | ISO VG 32              |                         |                    | TU-32                  |
| 7054                 | Turbine oil for rotary air compressor    | ISO VG 46              |                         |                    | TU-46                  |
| 7055                 | Turbine oil for rotary air compressor    | ISO VG 68              |                         |                    | TU-68                  |
| 7114                 | Oil for pneumatic tool                   | ISO VG 32              |                         | 110                | PT-32                  |
| 7115                 | Oil for pneumatic tool                   | ISO VG 46              |                         | 111                | PT-46                  |
| 7134                 | Cylinder oil                             | ISO VG 460             | 157                     | 120                | CY-460                 |
| 7136                 | Cylinder oil                             | ISO VG 1000            |                         | 121                | CY-1000                |
| 7152                 | Enclosed gear unit oil                   | ISO VG 100             |                         | 143                | EP-100                 |
| 7153                 | Enclosed gear unit oil                   | ISO VG 150             | 104, 134, 154           | 144                | EP-150                 |
| 7154                 | Enclosed gear unit oil                   | ISO VG 220             | 105, 135                | 145                | EP-220                 |
| 7155                 | Enclosed gear unit oil                   | ISO VG 320             | 107, 137                | 147                | EP-320                 |
| 7156                 | Enclosed gear unit oil                   | ISO VG 460             | 140                     | 148                | EP-460                 |
| 7157                 | Enclosed gear unit oil                   | ISO VG 680             |                         | 150                | EP-680                 |
| 7158                 | Enclosed gear unit oil                   | ISO VG 1000            |                         |                    | EP-1000                |
| 7175                 | Heat transfer oil                        | ISO VG 32              |                         |                    | HT-32                  |
| 7195                 | Transformer oil                          | ISO VG 7 or 10         |                         | 190                | TF-10                  |
| 7215                 | Flushing oil                             | ISO VG 22              |                         |                    | FC-22                  |
| 7235                 | Engine oil                               | SAE 15W-40             | 183                     | 184                | MO-15/40               |
| 7253                 | Lubricant, kiln and mill gear units      | Unspecified            | 149                     | 160                | GL-O                   |
| 7256                 | Lubricant, kiln and mill gear units      | Unspecified            |                         |                    | GL-R                   |
| 7257                 | Lubricant, kiln and mill gear units      | Unspecified            | 149                     | 160                | GL-O                   |
| 7265                 | Hand lubricant, open gear unit           | Unspecified            | 161, 162, 165           | 171, 172, 175      | GL-H                   |
| 7285                 | Wire lubricant                           | Unspecified            |                         |                    | WL-P                   |
| 7348                 | Synthetic Oil, Polyalphaolefin (PAO)     | ISO VG 460             |                         |                    | SY-460                 |
| 7349                 | Synthetic Oil, Polyalphaolefin (PAO)     | ISO VG 680             |                         |                    | SY-680                 |
| 7356                 | Synthetic Oil, Polyglycol (PG)           | ISO VG 460             |                         |                    | SY-460                 |
| 7357                 | Synthetic Oil, Polyglycol (PG)           | ISO VG 680             |                         |                    | SY-680                 |
| 7425                 | Multipurpose grease                      | NLGI 2                 | 203, 206, 207, 214, 215 | 204, 220, 230, 240 | BG-U                   |
| 7435                 | Low-temperature grease                   | NLGI 2                 |                         | 250                | BG-LT                  |
| 7445                 | High-temperature grease                  | NLGI 2                 |                         | 216                | BG-HT                  |
| 7455                 | Low-speed grease                         | NLGI 1 or 2            |                         |                    | BG-LS                  |
| 7523                 | Spray lubricant, kiln and mill gear unit | NLGI 1                 |                         |                    | SL-P                   |
| 7525                 | Spray lubricant, kiln and mill gear unit | NLGI 0                 |                         |                    | SL-R                   |
| 7527                 | Spray lubricant, kiln and mill gear unit | NLGI 0                 |                         |                    | SL-O                   |
| 7529                 | Spray lubricant, kiln and mill gear unit | NLGI 0 or 00           |                         |                    | SL-O                   |
| 7531                 | Spray lubricant, kiln and mill gear unit | NLGI 0 or 00           |                         |                    | SL-O                   |
| 7555                 | Anti-friction lubricant                  | -                      |                         |                    | FL-U                   |

## 6.5 Appendix 4. Revision of product or lubricant type in the key to lubricants.

(Reference is 36501-11 rev 7.0)

### 1 General change in 36501-11

| <u>The lube type in question</u>  | <u>The product in question</u>                                    | <u>Content of revision</u>  |
|---|---|---|
| 7310, 7311, 7312  | PAO oils for Flender gearmotor and PG oils for Flender worm gear. | Lubrication for Flender gear motor is organized in the new BA 7300 under table A, for which reason the FLSmidth matr numbers 7310, 7311, 7312 have been allocated to PG oils for Flender worm gear. |
| Synthetic oil, polyglycol (PG, Flender Worm gear)   | PG oils for worm gear.  | 7308, 7309, 7313, 7314 are new matr codes for Flender worm gear BA 7303.  |
| 7018 to 7027, Hydraulic oil, HM - Hydraulic oil, HM (Flender Fluidex) - Hydraulic oil, HM. Low temperature. | Hydraulic oil in particular.                                      | General requirement has been changed. See sub-section 3.2 Safety to equipment.  |

## Carl Bechem, GmbH

| <u>The lube type in question</u>   | <u>The product in question</u>                              | <u>Content of revision</u>                                   |
|--|---|--|
| 7021, 7023, 7027, 7033, 7158, 7215, 7234, 7342, 7343, 7358, 7425, 7434, 7435, 7445, 7446, 7457 | Hydraulic oil, Engine oil, synthetic oil, grease and other. | New products from Bechem are added to the key to lubricants. |

## Castrol Performance-BP

| <u>The lube type in question</u>  | <u>The product in question</u>           | <u>Content of revision</u>   |
|---|--|--|
| 7322, 7323, 7324, 7325<br>Synthetic oil, Polyalphaolefin (PAO)<br>Rossi       | All VG numbers of<br>Castrol Tribol 1510 | For all matr numbers 7322, 7323, 7324, 7325: Castrol Tribol 1510 is replaced by Castrol Optigear Synthetic X. Castrol Optigear Synthetic X permits a mix of less than 3% Tribol 1510.<br>In case of product mix contact Deutsche BP - ILS, Mönchengladbach, Germany. |
| 7353, 7354, 7373, 7355, 7356, 7357, 7358, 7406 Synthetic oil, Polyglycol (PG) | All VG numbers of<br>Castrol Optiflex A  | For all matr numbers 7353, 7354, 7373, 7355, 7356, 7357, 7358, 7406: Castrol Optiflex A is replaced by Castrol Tribol 800.<br>Product mix should be avoided. In case of unavoidable product mix contact Deutsche BP - ILS, Mönchengladbach, Germany.                 |

## Engen Petroleum

| <u>The lube type in question</u> | <u>The product in question</u>   | <u>Content of revision</u>                       |
|----------------------------------|--|--|
| Various                          | 7053, 7054, 7055, 7115, 7158, 7175, 7195, 7235, 7285, 7345, 7348, 7353, 7354, 7425, 7455, Engen Petroleum Products | 16 Products have been either removed og changed. |

## India Oil Corporation

| <u>The lube type in question</u>  | <u>The product in question</u> | <u>Content of revision</u>                            |
|---|--------------------------------|---|
| 7302, 7303, 7304, 7305, 7306<br>Synthetic oil, Polyalphaolefin (PAO, Flender) | Servosyngear                   | Servosyngear is added to 7302, 7303, 7304, 7305, 7306 |

## Klüber Lubrication

| <u>The lube type in question</u>             | <u>The product in question</u> | <u>Content of revision</u>   |
|--|--------------------------------|--|
| 7406 Synthetic oil, Polyglycol (PG, Flender) | Synteso D 1000 EP              | Synteso D 1000 EP is not available from Klüber. Klüber suggest Klübersynth GH 6 - 1000 as alternative. |
| 7434 Grease, low-temperature                 | Klüberplex BEM 41-141          | Klüberplex BEM 41-141 added to 7434  |

## Krafft S. L.

| <u>The lube type in question</u>              | <u>The product in question</u>      | <u>Content of revision</u>                                |
|---|-------------------------------------|---|
| 7023, 7215 Hydraulic oil, HM and Flushing oil | FH-22 EP                            | Added.  |
| 7053, 7054, 7055 Turbine oil                  | Lubekrafft 17672 - TH32, TH46, TH68 | The products are removed from FLSmidth key to lubricants. |
| 7235 Engine oil                               | 15W40 SHPD                          | Name changed.   |
| 7265 Hand lubricant, open gear unit           | K-165 X, KGP-2/M, KL Complex 2000   | Name and comments changed.                                |
| 7445 Grease, Low-speed                        | KL Complex 150                      | Name changed.   |

## Mobil

| <u>The lube type in question</u>  | <u>The product in question</u>  | <u>Content of revision</u>  |
|---|---------------------------------|---|
| 7162 to 7167<br>Enclosed Gear Unit oil (Flender)                              | All VG numbers of Mobilgear XMP | All VG numbers of Mobilgear XMP are now named Mobilgear 600 XP and are now invented under matr number 7162 to 7167. |
| 7302, 7303, 7304, 7305, 7306<br>Synthetic oil, Polyalphaolefin (PAO, Flender) | Mobilgear SHC XMP ---           | Mobilgear SHC XMP --- replaced by Mobil SHC ---   |
| 7360 Synthetic oil, Polyglycol (PG)   | Mobil Glygoyle HE 220           | Special approval is withdrawn.<br>The Matr number 7360 is removed from 36501-11, FLS lubricants.                    |

## Shell

| <u>The lube type in question</u>                   | <u>The product in question</u> | <u>Content of revision</u>               |
|--|--------------------------------|--|
| 7307 Synthetic oil, Polyalphaolefin (PAO, Flender) | Shell Omala HD 1000            | Shell Omala HD 1000 is removed from 7307 |

## Total

| <u>The lube type in question</u>                                | <u>The product in question</u> | <u>Content of revision</u>                                       |
|---|--------------------------------|--|
| 7323, 7324, Synthetic oil, Polyalphaolefin (PAO, Rossi)         | CARTER SH 220, CARTER SH 320   | CARTER SH 220, CARTER SH 320 added to 7323, 7324.                |
| SEW types   | TOTAL products for SEW gear    | TOTAL products for SEW gear are added to the Key to lubricants.  |
| Synthetic oil, Polyglycol (PG, SEW) Grease. Low viscosity (SEW) | CARTER SY 220, MULTIS EP 00    | CARTER SY 220, MULTIS EP 00 added to 7373 and 7541 respectively. |

## Various

| <u>The lube type in question</u> | <u>The product in question</u>                                       | <u>Content of revision</u>   |
|----------------------------------|--|--|
| 7457 Grease, Low-speed           | Arcanol TEMP 120, Klüberlub BE 41-1501, Mobilith SHC 1500 and LGHB 2 | Special approval is withdrawn. 7457 continues as a standard matr number. |

## 6.6 Appendix 5. Status on information from oil company

|                              |           |                             |           |
|------------------------------|-----------|-----------------------------|-----------|
| Aral .....                   | 29-Jun-05 | India Oil Corporation ..... | 02-Jan-05 |
| BP .....                     | 18-Jan-07 | Klüber Lubrication .....    | 07-Jan-09 |
| Brugarolas .....             | 24-Mar-06 | Krafft S. L. ....           | 09-Jan-09 |
| Caltex .....                 | 31-Mar-06 | Kuwait Petroleum .....      | 07-Jan-09 |
| Carl Bechem, GmbH .....      | 13-Feb-09 | Mobil Oil Danmark ApS ..... | 30-Oct-08 |
| Castrol .....                | 18-Jan-07 | Rocol .....                 | 31-Mar-06 |
| Castrol Classic .....        | 07-Apr-05 | Shell .....                 | 20-Jan-09 |
| Castrol Performance-BP ..... | 25-Oct-08 | SKF .....                   | 16-Nov-04 |
| Engen Petroleum .....        | 14-Jan-09 | Statoil .....               | 31-Oct-05 |
| ESSO-EXXON .....             | 25-Oct-08 | TEXACO .....                | 31-Mar-06 |
| FAG .....                    | 29-Jun-05 | Total .....                 | 16-Mar-05 |
| Fuchs Lubritech .....        | 11-Nov-08 |                             |           |

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