

# Food Grade / Non-Food Grade Mineral Oils & Synthetic Lubricants

Air Compressor, Vacuum Pump & Industrial Applications

### **CAMCO Food Machinery Oils**

Nontoxic oils made from high quality hydrocracked (3,000 PSI) mineral oil base stocks and/or selected synthetic base stocks compatible with mineral oils. These blends are suitable for systems designed to utilize mineral oils with very low pour points and high flash points.

#### CAMCO 91-40 Plus

A combination of premium synthetic and semi-synthetic fluids with a combination of premium additives. Used in applications where an improved degree of oxidative stability, higher temperature performance, low volatility and seal conditioning is required. Meets the viscosity requirements of most major screw compressor OEMs.

Formulated for extended life in flooded screw compressors, certain vacuum pump applications, and general applications where a high quality lubricant with excellent Oxidative, Rust and Corrosion inhibited product is required. Provides improved cleanliness, low foaming characteristics, good water separation and improved compatibility with elastomers and seals.

Typical drain intervals are up to four times that of conventional mineral oils rotary screw air compressors under normal operating conditions, and one year drain intervals possible. These products typically outperform competitor's group II and III type semisynthetic compressor oils, including many that claim one year. This oil will outperform most OEM and competing aftermarket oils.

#### **CAMCO 41-46**

A polyalphaolefin (PAO) synthetic non-food grade rotary screw compressor lubricant.

**CAMCO®** 41-32 and 41-46 are a custom-blended polyalphaolefin (PAO) synthetic hydrocarbon oil giving improved lubrication at high and low temperatures, reduced volatility and compatibility with mineral oils and equipment designed for use with mineral oils.

**CAMCO® 41-32 and 41-46** are a long life lubricant formulated especially for flooded screw compressors. Other viscosities are available for specific applications.

#### **CAMCO FMO XL-46**

CAMCO® FMO XL-46, an 8,000 hour food grade air compressor oil, is a unique formulation derived from a blend of polyalphaolefin (PAO) synthetic lubricant and other advanced synthetic fluids and proprietary additives. The CAMCO® FMO XL-46 provides improved lubrication at high and low temperatures, reduced volatility, and compatibility with mineral oils. An advanced additive system provides superior equipment life and longer drain intervals than previously achievable with PAO's or mineral oils.

The FMO XL-46 is compatible with all OEM PAO oils, and will not need any oil flush to convert to. We recommend a COMP clean every 5 years to keep your machine at peek performance and output. All components meet NSF H-1 requirements, where incidental food contact may occur.

The CAMCO® FMO XL-46 food grade air compressor oil has been field tested and has shown that it can last up to 2 times longer than other synthetic PAO food grade oils on the market. This oil will also outperform most OEM oils that are only 6,000 hour fluids. The CAMCO FMO XL-46 can eliminate a complete oil change per year, less maintenance time and oil and filters to buy.

## CAMCO Food Grade Lubricants - For Every Mechanical Motion In Your Plant.

#### **CAMCO CLF 46**

These high performance compressor lubricant coolant formulations meet FDA requirements 21 CFR 178.3570 for lubricants with the possibility of incidental food contact. NSF H-1 (formerly USDA H-1) registered. Provides extended life in all types of compressors with improved cleanliness over traditional mineral oil formulas and many synthetic hydrocarbon products. Natural and enhanced lubricity extends equipment life and reduces friction.

A premium "food grade" fluid which is custom blended from highly refined semi-synthetic white oils and synthetic base fluids with additives to produce a premium, extended life, rust and oxidation-inhibited lubricant. This product is specifically designed for long life in air compressors, It also offers exceptional performance in applications requiring excellent oxidation and corrosion resistance (R&O) combined with mild anti-wear properties. Applications include bearing lubrication, R&O type hydraulic systems, selected gear applications.

#### PAG 42-46 S

CAMCO® recommends converting customers from Ultra Coolant and Sullube 32 to CAMCO® 42-S. We have checked and found CAMCO® 42-S to be completely compatible (soluble) with these products.

Ultra Coolant and Sullube 32 are blends of PE (pentaerythritol) type polyolester and polypropylene glycol. CAMCO® 42-S Series (e.g. CAMCO® 42-S) are 100 percent PE polyolesters, which is the superior basestock component in the competitors blended products, so CAMCO® 42-S will outperform them. Accelerated lube life tests were run using 25 compressors running continuously at 220-230°F discharge temperature in a lab "Hot Room". Our CAMCO® 42-S was still performing when the test was discontinued at 12,000 hours. Polyglycol/esters typically fail at 5000 hours.

We have heard of corrosion problems after extended periods with the competitors products. Polyglycols tend to pick up water which could be the cause. CAMCO® 42-S being 100 percent PE polyolester, does not experience this problem. We have had reports from the field of CAMCO® 42-S in rotary screw compressors over two years, with the same charge of lubricant and no corrosion.

#### PAG 42-46

CAMCO® PAG 42 Series are custom blended polyalkylene glycol (PAG)/ester rotary screw air compressor lubricants. This formulation offers improved lubrication at high and low temperatures, reduced volatility, and high viscosity index, plus excellent corrosion protection.

CAMCO® PAG 42 Series are long life lubricants formulated with rust and oxidation inhibitors. Other viscosities are available for specific applications.

CAMCO® PAG 42 Series will not leave behind carbon residue/varnish when it oxidizes as compared to hydrocarbon based products.

#### Air Compressor Oils\*

High quality, super refined, hydrocracked (3,000 PSI) mineral oils; blends of hydrocracked oils and synthetic oils; pure synthetic oils. They are compatible with mineral oils and systems designed for mineral oil use.

|   |            | Viscosity @    | Viscosity @     |                 |                |               |               |        |        |
|---|------------|----------------|-----------------|-----------------|----------------|---------------|---------------|--------|--------|
|   | CAMCO      | 100° F (40° C) | 210° F (100° C) |                 | Flash Point °F | Pour Point °F | ISO Viscosity | AGMA   |        |
|   | Number     | (cSt)          | (cSt)           | Viscosity Index | (°C)           | (°C)          | Grade         | Number | FG     |
| _ | FMO XL-46  | 44.1           | 7.7             | 144             | 516 (269)      | -65 (-54)     | 46            | 1      | H1-SYN |
|   | Pure CL-46 | 48             | 7               | 103             | 464 (240)      | -38 (-39)     | 48            | 1      | H1-B** |
|   | 91-40 Plus | 42.8           | 6.92            | 119             | 430 (221)      | -35 (-37)     | 32 & 46       | 1      |        |
|   | 41-32      | 30.2           | 5.89            | 142             | 470 (243)      | -90 (-68)     | 32            | 1      |        |
|   | 41-46      | 46             | 7.72            | 137             | 515 (268)      | -65 (-54)     | 46            | 1      |        |
|   | 42-46 S    | 50.2           | 7.21            | 102             | 550 (288)      | -40 (-40)     | 46            | 1      |        |
|   | PAG 42-46  | 45             | 8.3             | 162             | 525 (274)      | -48 (-44)     | 46            | 1      |        |
|   | 4642-46    | 49             | 7.9             | 135             | 510 (265)      | -58 (-50)     | 46            | 1      |        |
|   | FMO 8-100  | 99             | 15.2            | 162             | 510 (265)      | -55 (-48)     | 100           | 3      | H1-SYN |
|   | 410-100 D  | 102            | 10.18           | 78              | 515 (268)      | -20 (-29)     | 100           | 3      |        |
|   |            |                |                 |                 |                |               |               |        |        |

<sup>\*\*</sup>Currently being field tested.

#### Vacuum Pump Oils\*

Custom-blended highly refined mineral and synthetic oils specifically designed for low volatility, high temperatures, long life, lubricity, and film strength. Used in the food processing industry where oils have indirect contact with food (H1) or nopossibility of contact.

| CAMCO       | Visc∙sity <b>@</b><br>100° F (40° C) | Viscosity @<br>210° F (100° C) |                 | Flash Point °F |            | ISO Viscosity |               |    |
|-------------|--------------------------------------|--------------------------------|-----------------|----------------|------------|---------------|---------------|----|
| Number      | (cSt)                                | (cSt)                          | Viscosity Index | (°C)           | (°C)       | Grade         | Base Oil Type | FG |
| 41-15       | 18.4                                 | 4.09                           | 127             | 425 (218)      | -100 (-73) | 15            | SYN           |    |
| 41-100      | 92.9                                 | 14.03                          | 156             | 520 (271)      | -55 (-48)  | 100           | SYN           |    |
| FMO 8-100   | 99                                   | 15.2                           | 162             | 521 (272)      | -55 (-48)  | 100           | SYN           | H1 |
| FMO-100     | 105                                  | 14                             | 135             | 521 (272)      | -55 (-48)  | 100           | SYN           | H1 |
| 42-100 R    | 100                                  | 12.6                           | 121             | 505 (263)      | -5 (-21)   | 100           | SYN           | H1 |
| VPO         | 42                                   | 6.4                            | 101             | 439 (226 )     | 0 (-18)    | 46            | MIN           |    |
| 93-100 HT   | 102                                  | 11.8                           | 106             | 511 (266)      | 10 (-12)   | 100           | MIN           |    |
| 95-22 HT    | 22                                   | 4.2                            | 116             | 399 (204)      | 5 (-15)    | 22            | MIN           |    |
| FMO 114-100 | 105                                  | 11.9                           | 100             | 489 (254)      | 10 (-12)   | 100           | MIN           | H1 |

AGMA = American Gear Manufacturer Association ASTM = American Society of Testing and Materials ISO = International Standards Organization NLGI = National Lubricating Grease Association cSt = Centistrokes AW = Anti-wear

EP = Extreme Pressure

FG = Food-grade

\*Properties shown are typical properties and are not intended for use in preparing specifications.



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