ULTRACHEM INC

PREMIUM SYNTHETIC LUBRICANTS

4TH EDITION

ULTRACHEM INC
PREMIUM SYNTHETIC LUBRICANTS

LUBRICANTS & SPECIALTY PRODUCTS HANDBOOK

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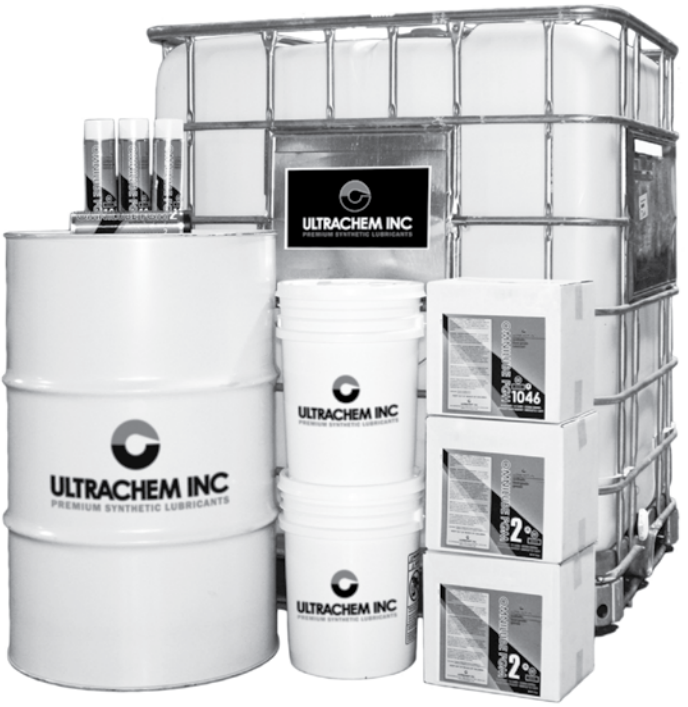
The information in this handbook is, to the best of our knowledge, true and accurate. However, all recommendations or suggestions are made without guarantee, since the conditions of use are beyond our control.

Typical properties do not necessarily constitute actual product specifications, and are considered accurate at the time this handbook was put together. The data provided in this publication is presented as a guide for Ultrachem product uses. Please contact your Ultrachem sales representative for clarifications and the latest product information.



ISO 9001:2008 Certified

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ULTRACHEM INC
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ULTRACHEM HISTORY

Ultrachem Inc was founded in 1965 as an independent blender of synthetic lubricants for the OEM manufacturers that depended on the performance available only from synthetics. Since that time Ultrachem has grown and expanded to offer additional industrial synthetic lubricants required by manufacturers to keep their equipment running. A new plant was built in 1996 and expanded with new equipment in 2004.

Your choice of private label and branded products is available.

Geographically, Ultrachem exports product to Europe, Asia, Africa, Australia and South America.

Our synthetics offer superior performance with:

- Increased Energy Savings
- Reduced Change-out Intervals
- Lower Oil Disposal Costs
- Less Environmental Impact
- More Biodegradable
- Reduced Toxicity
- Wider Temperature Performance
- Higher Flash Points
- Ultrachem Offers a Wide Selection of Base Oils Including:

    - Group II, III
    - PAO
    - Diester
    - Polyol Ester (POE)
    - Polyglycol (PAG)
    - Silicone
    - Combinations

ULTRACHEM INC
PREMIUM SYNTHETIC LUBRICANTS

QUALITY

Ultrachem is ISO 9001:2008 Certified. Many of our OEM customers are Tier II suppliers to automotive manufacturers. We work hard to satisfy our distributors and customers. We want your business for the long term and we manufacture all of our synthetic lubricants for industrial, powder metal OEM, and food processing applications, either private label or Ultrachem branded, with only the highest quality raw materials.

These premium quality synthetics are then combined with our extraordinary fast turn-around on orders and our technical assistance for your application.

We also develop new products to conform to custom applications. Please contact us today to see what we can do for you.

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GENERAL INFORMATION

BASE OIL GROUPS

Petroleum base oils make up most of today's lubricants. These base oils contain varying amounts of paraffinic, aromatic and napthenic hydrocarbon type molecules. The American Petroleum Institute (API) categorized these base oils, along with synthetic base oils, in 1990 to help marketers when blending licensed engine oils with base oils from different manufacturing sources. This categorization uses physical and chemical parameters to divide the base oils into five different groups as the table represents.

Group	Sulfur, Wt%		Saturates	VI
I	> 0.03	and/or	< 90	80 – 119
II	≤ 0.03	and	≤ 90	80 – 119
III	≤ 0.03	and	≤ 90	≥ 120
IV	All Polyalphaolefins (PAOs)			
V	All Stocks Not Included in Groups I - IV			

Group categories by composition (API publication 1509)

Group I base oils are the most rudimentary of all types of the base oil categories. These constitute a mix of different hydrocarbon chains with little or no uniformity. Typically, these products are used in less demanding applications.

Group II base oils are common in many of the motor oils and industrial oils we see on the market today. They are limited by their poor performance in cold temperatures, evident by the pour point and lower viscosity index available with higher Group categories. The sulfur content and saturates are regulated. Examples of Ultrachem's use of Group II base oils are Chemlube® VP 22 and VP 32 as well as our Omnilube® WO Series.

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Group III base oils have come about as the industry has moved to hydrocracking and solvent de-waxing to enhance oil performance. These processes represent the highest level of refining available today. The result is enhanced performance in temperature range, viscosity index, and other areas that bring stability and uniformity from their improved molecular structure. The sulfur content is reduced and the saturates content is increased. These base oils are not chemically synthesized, but have been allowed to be marketed as synthetics. Sometimes referred to as High Viscosity Index (VHVI or XHVI) paraffinic oils, they are often found in semi or partial synthetic products. Examples of the use of Group III base oils at Ultrachem include the "S" Series of compressor oils such as the 46S and the PS Series of partial synthetics.

Group IV base oils are all polyalphaolefins (PAOs) and are considered by some to be the first real synthetic base oils due to the fact that they are chemically engineered from synthesized base stocks. Ultrachem uses a wide array of PAOs in formulation of Chemlube® and Omnilube® synthetic compressor oils, gear oils and sintered bearing oils. They are also used in areas where H-1 incidental food contact lubricants are required in food and pharmaceutical processing plants. The PAOs can be very cost effective due to longer change out intervals, lower disposal costs, and improved performance. They can also be considered environmentally friendly because their longer life results in less oil usage and reduced disposal of used oil. Most of the Omnilube® oils and greases use PAO base oils. The PAO base oils are often blended with other synthetic base oils to achieve optimum results in applications such as compressor or gear as with many of the Omnigear® or Chemlube® products.

Group V base oils include all other chemically engineered synthetic oils not included in the above categories. They include diesters, polyol esters (POE), polyalkylene glycols (PAG), and silicone. Group V base oils offer improved performance over those in Groups I through III. Each of these particular Group V base oils have something unique to offer from the perspective of final performance of the lubricant in the actual application. Ultrachem exploits these benefits to offer specifically formulated lubricants to solve our customer's demanding applications.

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GENERAL INFORMATION

ADDITIVES

Additives come in liquid and powder forms. They perform a variety of functions including protecting metal surfaces, extending lubricant life, and increasing the applicability of a lubricant. Ultrachem chemists use individual additives to achieve the desired results in our proprietary formulations. Some of the additives include the following as divided by group:

Surface Protection: Anti-wear, Extreme Pressure (EP) agents, detergents, dispersants, and corrosion inhibitors.

Enhanced Performance: Pour point depressants, viscosity modifiers, seal swell agents and friction modifiers.

Protection: Antifoams, antioxidant, and metal deactivators.

The end result is our finished synthetic lubricant, whether it is a Chemlube®, Omnilube®, Vischem®, Syntroil® or Pneu Mist®, ready for your application.

SYNTHETIC CHARACTERISTICS

PAO (polyalphaolefin)

PAO based products typically have very useful temperature ranges and are compatible with most other synthetics and mineral oils, paints, plastics, and seal materials. They offer good oxidative and thermal stability. Benefits include:

- High Flash Point
- Low Pour Point
- High Viscosity Index
- Good Compatibility
- Good Oxidative Stability
- Good Thermal Characteristics

PAOs are often recommended for use where antiwear or EP additives are needed, and where compatibility with plastics, rubbers and paints is required.

ESTERS

Esters, synthesized from fatty acids and alcohols, come in a wide variety of "flavors" including many types of diesters and polyol esters (POE). Unlike PAO products, they may have adverse compatibility with some materials (more information is available with our Compatibility Guide for esters). However, they are naturally polar due to the unique molecular structure, leading to a natural detergency that may be desirable in many applications. Benefits include:

- Natural Detergency
- Better Biodegradability Than Most Other Base Oils
- Wide Operating Temperature Range
- Excellent Oxidative Stability
- Excellent Thermal Stability
- Lower Volatility
- Low Friction

Esters are often used in many of the places that PAOs have been used, but are better for higher temperatures and where carbon residue from hydrocarbons is a problem. They are often used in compressors, gears, oven chains and other applications that call for their unique characteristics.

POLYGLYCOLS

PAGs used for many industrial applications are homopolymers of ethylene oxide and propylene oxide. They have high oxygen content which makes them somewhat unique. There are many benefits to using PAGs in the appropriate application, but one drawback is their incompatibility with many other petroleum and PAO products. Esters appear to be the exception, and will mix with just about any product including PAGs. Benefits include:

- Wide Operating Temperature Range
- Exceptional Cleanliness
- Will Not Normally Form Tars & Sludge
- Available in Water Soluble & Water Insoluble Forms
- Excellent Antiwear Properties With No Additives
- Available in Wide Variety of Viscosities
- Some Are H-1 Approved for Food Applications
- High Viscosity Index (VI >200)
- Low Traction Coefficient
- Resistant to HC Dilution

HEALTH & SAFETY

Most Ultrachem products are considered non-hazardous, are not restricted and are generally regarded as safe. As with all petroleum products, however, excessive and prolonged skin contact may remove the natural fats and oils from the skin with resulting dryness and skin irritation. It is recommended that good hygiene practices be used without prolonged or repeated contact with the products. Washing the skin with soap and water should be done after contact. The Material Safety Data Sheets are available directly from Ultrachem and are updated on a regular basis. We encourage you to review them for additional information on handling.

It is recommended that all Ultrachem products be stored in dry covered storage away from open flame or nearby sources of excessive heat for maximum performance. Storing pails, drums or other containers outside may lead to contamination from the weather or other sources.

P-ACO SERIES

PREMIUM PETROLEUM LUBRICANTS

Applications:

The P-ACO Series is a group of high performance, multifunctional lubricants designed for use in many industrial applications. These are considered environmentally friendly since they are zinc free. These premium petroleum oils are Ultrachem's answer for petroleum oils where OEM specifications are critical. They are very useful where frequent change outs are necessary due to poor environments prone to contamination from dust, acids, solvents, gases, or other contaminants. The P-ACO Series has a service life of 2,000 – 3,000 hours under good operating conditions in rotary screw compressors and up to 2,000 hours in reciprocating compressors.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Reciprocating Compressors
- Vacuum Pumps
- High Pressure Hydraulic Systems
- High Pressure Turbines

Performance Benefits:

- Excellent rust and oxidation inhibitors
- Will not foam
- Great demulsibility
- Meets: General Electric GEK -28143A & GEK-46506D; Denison HF-1; Cincinnati-Milacron P-38, P-45, P-54, P-55, P-57, P-62; U.S. Steel 126; DIN 51524 Part 1; MIL-H-17672C; Westinghouse TLV 9013 04.

TYPICAL PROPERTIES	TEST METHOD	P-ACO 32	P-ACO 46	P-ACO 68	P-ACO 100	P-ACO 150	P-ACO 220	P-ACO 460
ISO Grade	ASTM D2422	32	46	68	100	150	220	460
Viscosity @ 40°C,cSt	ASTM D445	34	45	69	95	159	240	437
Viscosity @ 100°C,cSt	ASTM D445	5.3	7.3	9.3	11.5	15.9	20.8	30
Viscosity Index	ASTM D2270	136	120	112	109	102	105	98
Flash Point, °C/°F	ASTM D92	204/400	210/410	217/424	226/439	232/439	260/450	271/520
Pour Point, °C/°F	ASTM D97	-30/-22	-24/-11	-21/-6	-15/5	-15/5	-12/10	-10/15
Copper Corrosion	ASTM D130	1a	1a	1a	1a	1a	1a	1a
Rust – Sea Water	ASTM D665	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Oxidation Stability	ASTM D943	7500+	7500+	7500+	---	---	---	---
Foaming Sequences I, II, III	ASTM D892	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Specific Gravity	ASTM D1298	0.87	0.87	0.87	0.88	0.89	0.87	0.89

PAC-XTRA SERIES

PREMIUM PETROLEUM LUBRICANTS

Applications:

The PAC-XTRA Series is a group of high performance, multifunctional semi-synthetic compressor and vacuum pump lubricants designed for use by those that need a step up in performance from the typical petroleum oil. These may be considered environmentally friendly since the are zinc free. These premium semi-synthetic oils are designed to give improved performance over the P-ACO line of compressor oils. The PAC-XTRA Series has a service life of 2,000 – 4,000 hours under good operating conditions in rotary screw compressors and up to 3,000 hours in reciprocating compressors.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Reciprocating Compressors
- Vacuum Pumps
- High Pressure Hydraulic Systems
- High Pressure Turbines

Performance Benefits:

- Excellent rust and oxidation inhibitors
- Zinc free
- Will not foam
- Great demulsibility

TYPICAL PROPERTIES	TEST METHOD	PAC-XTRA 32	PAC-XTRA 46	PAC-XTRA 68	PAC-XTRA 100	PAC-XTRA 150
ISO Grade	ASTM D2422	32	46	68	100	150
Viscosity @ 40°C,cSt	ASTM D445	32	44.9	70.8	104.9	156.1
Viscosity @ 100°C,cSt	ASTM D445	5.6	6.9	9.1	12.2	15.4
Viscosity Index	ASTM D2270	113	108	103	108	100
Flash Point, °C/°F	ASTM D92	206/402	217/422	217/422	220/428	226/438
Pour Point, °C/°F	ASTM D97	-34/-29	-30/-22	-24/-11	-20/-4	-20/-4
Copper Corrosion	ASTM D130	1a	1a	1a	1a	1a
Foaming Sequences I, II, III	ASTM D892	Pass	Pass	Pass	Pass	Pass
Specific Gravity	ASTM D1298	0.87	0.88	0.88	0.89	0.89

PS SERIES

PARTIAL SYNTHETIC COMPRESSOR OIL

The Ultrachem PS Series is a blend of synthetic and premium petroleum base fluids designed for use in rotary screw, rotary vane and reciprocating air compressors. The unique additive systems and highest quality synthetic components in these products make them greatly superior to petroleum products. Ultrachem PS Series extends service life up to 4,000 hours in rotary screw compressors under good operating conditions.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Reciprocating Compressors
- Centrifugal Compressors

Performance Benefits:

- Extended oil change intervals compared to petroleum oils (3 X service life)
- Superior film strength
- Excellent anti-wear properties
- High flash point
- Low pour point

TYPICAL PROPERTIES	TEST METHOD	PS32	PS46	PS68	PS100	PS150	PS220
ISO Grade	ASTM D2422	32	46	68	100	150	220
Viscosity @ 40°C,cSt	ASTM D445	32	44.5	73	107	148	232
Viscosity @ 100°C,cSt	ASTM D445	6	7.8	8.6	11.8	15.3	20.8
Viscosity Index	ASTM D2270	146	145	87	99	105	105
Flash Point, °C/°F	ASTM D92	216/420	221/430	221/430	221/430	224/435	224/435
Pour Point, °C/°F	ASTM D97	-33/-27	-36/-33	-33/-27	-30/-22	-24/-11	-26/-15
Copper Corrosion	ASTM D130	1b	1b	1b	1b	1b	1b
Foaming Sequences I, II, III	ASTM D892	Nil	Nil	Nil	Nil	Nil	Nil
Demulsibility	ASTM D1401	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Specific Gravity	ASTM D1298	0.90	0.91	0.91	0.91	0.91	0.91

S SERIES

SYNTHETIC COMPRESSOR LUBRICANTS

Applications:

The "S" Series is a line of full synthetic lubricants for high performance in rotary screw air compressors and vacuum pumps. The "S" Series utilizes the latest technology available in combination with excellent lubricant additive systems to provide the performance of a synthetic at a less expensive cost. The "S" Series are made from a severely hydro-treated, hydro-cracked hydrocarbon base fluid.

32S, 46S, and 68S are designed for rotary screw compressors and yield a service life of 6,000 hours in rotary screw compressors at wide temperatures in good operating conditions.

100S and 150S are designed for reciprocating compressors.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Reciprocating Compressors
- Centrifugal Compressors
- Vacuum Pumps

Performance Benefits:

- Compatibility with most synthetics including PAO's and esters
- Excellent rust protection
- Excellent demulsibility
- Easy conversion from PAO or mineral oils
- Superior wear protection

TYPICAL PROPERTIES	TEST METHOD	32S	46S	68S	100S	150S
ISO Grade	ASTM D2422	32	46	68	100	150
Viscosity @ 40°C,cSt	ASTM D445	36.6	45.2	67	95.4	153
Viscosity @ 100°C,cSt	ASTM D445	6.5	7.5	9.9	12.4	17
Viscosity Index	ASTM D2270	130	130	132	124	120
Flash Point, °C/°F	ASTM D92	240/464	240/464	240/464	240/464	240/464
Pour Point, °C/°F	ASTM D97	-42/-44	-39/-38	-33/-27	-31/-23	-30/-22
Copper Corrosion	ASTM D130	1a	1b	1b	1a	1a
Foaming Sequences I, II, III	ASTM D892	Nil	Nil	Nil	Nil	Nil
Specific Gravity	ASTM D1298	0.85	0.86	0.86	0.86	0.86

CHEMLUBE® 446 SERIES

LONG-LIFE SYNTHETIC COMPRESSOR OILS

Applications:
The Chemlube 446 is a unique blend of synthetic base oils and additives that provide exceptional performance characteristics combined with unprecedented value in a long-life synthetic compressor oil. This is the quality synthetic to use when replacing branded products from compressor manufacturers or other sources. As a full synthetic, the Chemlube 446 series extends service life to 6,000 – 8,000 hours under good operating conditions in rotary screw compressors and offers good life in reciprocating and vane compressors.

Typical Industrial Applications:
- Rotary Screw Compressors
- Rotary Vane Compressors
- Reciprocating Compressors
- Centrifugal Compressors

Performance Benefits:
- Exceptional cost-performance
- Improved safety - High Flash Point
- Excellent material compatibility
- Built-in oxidation stability

TYPICAL PROPERTIES	TEST METHOD	446-46	446-68	446-100
ISO Grade	ASTM D2422	46	68	100
Viscosity @ 40°C,cSt	ASTM D445	45.2	73	107
Viscosity @ 100°C,cSt	ASTM D445	7.5	8.6	11.8
Viscosity Index	ASTM D2270	130	87	99
Flash Point, °C/°F	ASTM D92	240/464	221/430	221/430
Pour Point, °C/°F	ASTM D97	-39/-38	-33/-27	-30/-22
Copper Corrosion	ASTM D130	1b	1b	1b
Auto-ignition, °F	ASTM D892	Nil	Nil	Nil
Demulsibility	ASTM D1298	0.86	0.91	0.91

ULTERRA SERIES

SYNTHETIC COMPRESSOR OIL

Applications:

The Ultrachem Ulterra Series of synthetic lubricants was designed to provide superior performance over mineral oils in rotary screw air compressor applications. Under normal operating conditions (<200°F), Ultrachem Ulterra can be expected to provide 8,000 plus hours of service life. Formulated from a blend of premium synthetic base stocks, these fluids will keep the compressor running clean and trouble-free during its life cycle. Ultrachem Ulterra offers a cost-effective solution to rotary screw compressed air systems and is compatible with most rotary screw air compressor fluids on the market. This series is not compatible with silicone or polyglycol based fluids.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Reciprocating Compressors
- Centrifugal Compressors

Performance Benefits:

- Extended oil change intervals compared to petroleum oils (3 X service life)
- Superior film strength
- Excellent anti-wear properties
- High flash point
- Low pour point

TYPICAL PROPERTIES	TEST METHOD	Ulterra 32	Ulterra 46	Ulterra 68
ISO Grade	ASTM D2422	32	46	68
Viscosity @ 40°C,cSt	ASTM D445	32	47.4	69.2
Viscosity @ 100°C,cSt	ASTM D445	6	8.17	10.32
Viscosity Index	ASTM D2270	146	146	134
Flash Point, °C/°F	ASTM D92	234/453	259/498	248/478
Pour Point, °C/°F	ASTM D97	<-45/<-50	<-45/<-50	-35/-31
Demulsibility	ASTM D1401	40-40-0	40-40-0	40-40-0
Specific Gravity	ASTM D1298	0.85	0.86	0.87

CHEMLUBE® 221, 228, 268, 299, and 300

PAO-BASED COMPRESSOR LUBRICANTS

Applications:

The Chemlube PAO-based series is a line of full synthetic compressor oils that are formulated with the highest quality polyalphaolefin (PAO) base fluids. These 100% premium synthetic oils are used where maximum seal, paint, and plastic compatibility is required.

Chemlube 221, 228, and 268 are designed for rotary screw applications and offer a service life of up to 8,000 hours under a wide range of temperatures under good operating conditions.

Chemlube 299 and 300 are designed for reciprocating compressors.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Reciprocating Compressors
- Centrifugal Compressors
- Vacuum Pumps

Performance Benefits:

- Outstanding thermal oxidative stability
- Very low pour point
- Wide operating temperature range
- Non-detergent and ashless
- Extended drain intervals / reduced oil disposal
- Excellent vapor pressure characteristics
- USDA H-2 authorized

TYPICAL PROPERTIES	TEST METHOD	Chemlube 221	Chemlube 228	Chemlube 268	Chemlube 299	Chemlube 300
ISO Grade	ASTM D2422	32	46	68	100	150
Viscosity @ 40°C,cSt	ASTM D445	32	48	67	99	156.3
Viscosity @ 100°C,cSt	ASTM D445	5.5	7.9	10.3	14.5	18.3
Viscosity Index	ASTM D2270	140	134	139	150	131
Flash Point, °C/°F	ASTM D92	221/430	251/483	270/518	246/475	260/500
Pour Point, °C/°F	ASTM D97	-54/-65	-51/-60	-51/-60	-51/-60	-45/-49
Copper Corrosion	ASTM D130	1a	1b, shiny	1a	1a	1a
Foaming Sequences I, II, III	ASTM D892	Nil	Nil	Nil	Nil	Nil
Demulsibility	ASTM D1401	Excellent	40-40-0(10)	40/39/1	Excellent	Excellent
Four Ball Wear, 40 Kg., 1200rpm, 75°C, 1 hr., Scar Diameter, mm	ASTM D4172	<0.50	0.43	0.44	<0.48	<0.48
Specific Gravity	ASTM D1298	0.84	0.86	0.86	0.86	0.86

CHEMLUBE® 215, 229, 230, 501, 751, and 822

DIESTER-BASED COMPRESSOR LUBRICANTS

Applications:

The Chemlube diester-based fluids are full synthetic compressor lubricants specially formulated with premium synthetic ester base stocks for use in a wide variety of air compressors.

Chemlube 215, 229, and 230 are designed from diester base oils for rotary screw compressors and will offer a typical service life of 8,000 hours under good operating conditions. Chemlube 501 and 751 are designed from diester base oils for reciprocating compressors and are recommended for high pressure air compressors.

Chemlube 822 is a heavier weight formulated with premium triester base oils for use where an ISO 220 is required.

Chemlube 501 and 751 are recommended for reciprocating compressors and vacuum pumps using the following gases:

Air	Ethylene	Methane	Propane
Butadiene	Natural Gas	Synthesis Gas	Carbon Monoxide
Carbon Dioxide (dry	Helium	Hydrogen Sulfide (dry)	Nitrogen
Furnace (crack) Gas	Hydrogen	Sulphur Hexafluoride	

Nominal Operating Range is -15°C to 230°C (5°F to 445°F)

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Reciprocating Compressors
- High Pressure Air Compressors
- Vacuum Pumps
- Gear Boxes
- Chains

Performance Benefits:

- Outstanding thermal and oxidative stability
- Will not varnish or form carbon deposits
- Wide operating temperature range
- Built in detergency action
- Extended drain intervals reduces oil disposal, thus increasing cost effectiveness
- Caution: May affect some paint finishes, plastics and seals
- USDA H-2 authorized

Chemlube 215 carries the NSN #9150-01-068-0676 (quarts). Chemlube 501 carries the NSN #9150-01-052-7562 (gallons); NSN #9150-01-025-8649 (pails); NSN #9150-01-240-4950 (drums).

CHEMLUBE® 215, 229, 230, 501, 751, and 822

DIESTER-BASED COMPRESSOR LUBRICANTS

TYPICAL PROPERTIES	TEST METHOD	Chemlube 215	Chemlube 229	Chemlube 230	Chemlube 501	Chemlube 751	Chemlube 822
ISO Grade	ASTM D2422	32	46	68	100	150	220
SAE Grade	SAE J-300	10	10W20	20	30	40	50
Viscosity @ 40°C,cSt	ASTM D445	36.3	45.4	70	99	146.5	222
Viscosity @ 100°C,cSt	ASTM D445	5.9	6.5	7	10.2	13.3	18.6
Viscosity Index	ASTM D2270	106	89	60	83	90	92
Flash Point, °C/°F	ASTM D92	252/486	252/485	252/485	260/500	271/520	>260/>500
Pour Point, °C/°F	ASTM D97	-48/-54	-40/-40	-38/-35	-29/-30	-34/-30	-34/-30
Copper Corrosion	ASTM D130	1a	1b	1a	1b	1a	---
Foaming Sequences I, II, III	ASTM D892	Nil	Nil	Nil	Nil	Nil	---
Demulsibility	ASTM D1401	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Evaporation, %	ASTM D972	1.0	1.0	1.0	0.98	0.90	<1%
Carbon Residue, %	ASTM D189	<0.02	<0.02	<0.02	<0.02	<0.020	<0.020
Dielectric Strength	ASTM D877	---	---	34.33	---	---	---
Four Ball Wear, 40 Kg., 1200rpm, 75°C, 1 hr., Scar Diameter, mm	ASTM D4172	---	---	---	0.38	---	---
Specific Gravity	ASTM D1298	0.96	0.96	0.96	0.95	0.93	0.92

CHEMLUBE® 800

TRI-ESTER BASED COMPRESSOR LUBRICANT

Applications:

Chemlube 800 is a high viscosity synthetic lubricant formulated from a highly stable tri-ester base fluid. Chemlube 800 is designed for use in reciprocating compressors under adverse conditions of high temperature and high pressure.

Chemlube 800 is recommended for reciprocating compressors and vacuum pumps using the following gases:

Air	Ethylene	Methane	Propane
Butadiene	Natural Gas	Synthesis Gas	Carbon Monoxide
Carbon Dioxide (dry)	Helium	Hydrogen Sulfide (dry	Nitrogen
Furnace (crack) Gas	Hydrogen	Sulphur Hexafluoride	

Nominal Operating Range is -15°C to 230°C (5°F to 445°F)

Typical Industrial Applications:

- Reciprocating Compressors
- High Pressure Air Compressors
- Vacuum Pumps
- Gear Boxes
- Chains

Performance Benefits:

- Outstanding thermal and oxidative stability
- Will not varnish or form carbon deposits
- Excellent heat transfer characteristics
- Low volatility and low toxicity
- Caution: May affect some paint finishes, plastics and seals

Chemlube 800 carries the NSN #9150-01-490-5505 and is approved by **Bauer**® for high-pressure applications.

TYPICAL PROPERTIES	TEST METHOD	Chemlube 800
ISO Grade	ASTM D2422	150
SAE Grade	SAE J-300	40
Viscosity @ 40°C,cSt	ASTM D445	141.5
Viscosity @ 100°C,cSt	ASTM D445	12.8
Viscosity Index	ASTM D2270	79
Flash Point, °C/°F	ASTM D92	279/535
Pour Point, °C/°F	ASTM D97	-29/-20
Auto Ignition Temp., °C/°F	ASTM D1255	391/735
Evaporation, %	ASTM D972	<1.0
Water Solubility, <0.01 g/l @ 20°C		Insoluble
Lbs./Gallon	---	8.10
Specific Gravity	ASTM D1298	0.97

CHEMLUBE® PLUS SERIES

SYNTHETIC COMPRESSOR LUBRICANTS

Applications:
The Chemlube Plus Series is made with a thermal and oxidatively stable polyol ester (POE) blend. These full synthetic premium lubricants are formulated to form less varnish under high temperature applications and to be more resistant to acidic intake air than the polyalkylene glycol coolants. Under normal operating conditions you can expect to obtain up to 11,000 hours of lubricant service life in rotary screw compressors.

Typical Industrial Applications:
- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Vacuum Pumps

Performance Benefits:
- Outstanding thermal and oxidative stability
- Extended drain intervals reduces oil disposal
- Wide operating temperature range
- Excellent anti-wear protection
- Compatible with most compressor oils
- Improved safety - High flash point

TYPICAL PROPERTIES	TEST METHOD	Chemlube Plus 32	Chemlube Plus 10	Chemlube Plus 68
ISO Grade	ASTM D2422	32	46	68
Viscosity @ 40°C,cSt	ASTM D445	32	44.4	66
Viscosity @ 100°C,cSt	ASTM D445	6.3	7.3	9.9
Viscosity Index	ASTM D2270	125	126	132
Flash Point, °C/°F	ASTM D92	240/464	240/464	240/464
Pour Point, °C/°F	ASTM D97	-50/-58	-50/-58	-50/-58
Foaming Sequences I, II, III	ASTM D892	Nil	Nil	Nil
Demulsibility	ASTM D1401	Excellent	Excellent	Excellent
Evaporation, %	ASTM D972	1.0	1.0	1.0
Specific Gravity	ASTM D1298	0.88	0.89	0.89

ULTRACHEM® COOLANT and COOLANT 32

ROTARY SCREW COMPRESSOR LUBRICANTS

Applications:

Ultrachem Coolant and Coolant 32 are developed from a unique premium blend of polyalkylene glycol (PAG) and esters which together form an exceptional coolant and act to reduce oxidation and deposit formation. They offer excellent heat transfer properties, long life, high flash points, low evaporation, low volatility, and excellent hydrolytic stability. They do not form varnish deposits like petroleum or PAO oils. Ultrachem Coolant and Coolant 32 are a less expensive alternative to our Ultrachem Coolant PE and Coolant 32 PE. We recommend the PE versions for applications involving high humidity, heat or other demanding conditions that may result in shorter life.

Typical Industrial Applications:

- Rotary Screw Compressors

Performance Benefits:

- 100% synthetic
- Wide temperature range
- Extended oil change intervals
- Eliminates deposit formation
- High flash points mean reduced fire hazards
- Waste disposal is minimized due to longer life
- Cost effective
- Eliminates seasonal oil changes

TYPICAL PROPERTIES	TEST METHOD	Ultrachem Coolant	Coolant 32
ISO Grade	ASTM D2422	46	46
Viscosity @ 40°C,cSt	ASTM D445	51.4	46.1
Viscosity @ 100°C,cSt	ASTM D445	8.7	8.1
Viscosity Index	ASTM D2270	146	148
Flash Point, °C/°F	ASTM D92	254/490	254/490
Pour Point, °C/°F	ASTM D97	-45/-50	-48/-55
Auto-ignition, °C/°F	ASTM E659	385/750	385/750
Foaming Sequences I, II, III	ASTM D892	Nil	Nil
Color	Visual	---	Green
Specific Gravity	ASTM D1298	0.98	0.98

ULTRACHEM® COOLANT PE and COOLANT 32 PE

ROTARY SCREW COMPRESSOR LUBRICANTS

Applications:

Ultrachem Coolant PE and Coolant 32 PE are developed from a unique premium blend of polyalkylene glycol (PAG) and pentaerythritol esters, which together form an exceptional coolant and act to reduce oxidation and deposit formation. These Coolants offer excellent heat transfer properties, long life, high flash points, low evaporation, low volatility, and excellent hydrolytic stability. They do not form varnish deposits like petroleum or PAO oils. Ultrachem Coolant PE and Coolant 32 PE are the generic alternatives to Ingersoll Rand SSR Ultra Coolant® and Sullube® 32 respectively and give the equivalent service life of 8,000 hours in rotary screw compressors.

Typical Industrial Applications:

- Rotary Screw Compressors

Performance Benefits:

- 100% synthetic
- Polyalkylene glycol/pentaerythritol ester blend
- Wide temperature range
- Extended oil change intervals
- Eliminates deposit formation
- High flash points mean reduced fire hazards
- Waste disposal is minimized due to longer life
- Cost effective
- Eliminates seasonal oil changes

TYPICAL PROPERTIES	TEST METHOD	Ultrachem Coolant PE	Coolant 32 PE
ISO Grade	ASTM D2422	46	32/46
Viscosity @ 40°C,cSt	ASTM D445	45.4	40
Viscosity @ 100°C,cSt	ASTM D445	9.6	8.3
Viscosity Index	ASTM D2270	202	188
Flash Point, °C/°F	ASTM D92	251/483	220/428
Pour Point, °C/°F	ASTM D97	-51/-60	-48/-55
Auto-ignition, °C /°F	ASTM E659	366/745	366/690
Foaming Sequences I, II, III	ASTM D892	Nil	Nil
Color	Visual	---	Green
Specific Gravity	ASTM D1298	0.99	0.99

Sullube 32® and SSR Ultra Coolant® are registered trademarks of Sullair and Ingersoll Rand respectively.

PGR SERIES

SYNTHETIC COMPRESSOR LUBRICANTS

Applications:
The PGR Series offers a new approach to synthetic lubricants and high performance in rotary screw air compressors and vacuum pumps. This series utilizes the latest technology available in combination with excellent lubricant additive systems. The PGR Series is a low cost alternative to the coolant compressor oils. The service life is 6,000 hours under good operating conditions.

Typical Industrial Applications:
- Rotary Screw Compressors
- Vacuum Pumps

Performance Benefits:
- Compatible with most oils
- Designed for rotary screws
- Protects against rust
- Excellent demulsibility
- Easy conversion from PAO or mineral oils
- Provides wear protection

TYPICAL PROPERTIES	TEST METHOD	PGR 32	PGR 46
ISO Grade	ASTM D2422	32	46
Viscosity @ 40°C,cSt	ASTM D445	39.3	46.9
Viscosity @ 100°C,cSt	ASTM D445	6.7	7.3
Viscosity Index	ASTM D2270	115	126
Flash Point, °C/°F	ASTM D92	252/486	254/489
Pour Point, °C/°F	ASTM D97	-39/-38	-33/-36
RPVOT	ASTM D2272	3596	3554
Copper Corrosion	ASTM D130	1b	1a
Specific Gravity	ASTM D1298	0.88	0.88

CHEMLUBE® 922, 932, 946, 968, and 9100

POLYOL ESTER LONG-LIFE COMPRESSOR LUBRICANTS

Applications:

The Chemlube 900 series fluids are full synthetics and have been formulated from premium polyol ester (POE) base stocks to achieve long life for compressor applications. These products are greater than 90% biodegradable as measured by the CEC L33 biodegradability test. New additive technology assures long lasting protection.

Chemlube 922, 932, 946, and 968 are designed for rotary screw compressors with a long service life of 10,000 – 12,000 hours under good operating conditions.

Chemlube 9100 is designed for reciprocating compressors.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Reciprocating Compressors
- Centrifugal Compressors
- Vacuum Pumps

Performance Benefits:

- Same base fluid as used in jet aviation (Polyol ester)
- Superior to petroleum, PAO, or synthetic diesters
- Outstanding thermal stability
- Built in detergency action
- Extended drain intervals reduces oil disposal, thus increasing cost effectiveness
- Generally recognized as being biodegradable and virtually nontoxic
- Caution: May affect some paint finishes, plastics and seals

TYPICAL PROPERTIES	TEST METHOD	Chemlube 922	Chemlube 932	Chemlube 946	Chemlube 968	Chemlube 9100
ISO Grade	ASTM D2422	22	32	46	68	100+
Viscosity @ 40°C,cSt	ASTM D445	20	34.4	48.5	64.9	134
Viscosity @ 100°C,cSt	ASTM D445	4.4	6.0	7.7	9.0	13
Viscosity Index	ASTM D2270	131	119	125	114	130
Flash Point, °C/°F	ASTM D92	241/465	252/485	271/520	266/511	299/570
Pour Point, °C/°F	ASTM D97	-60/-76	-57/-70	-51/-60	-43/-45	-34/-29
Copper Corrosion	ASTM D130	1a	1a	1a	1a	1a
Foaming Sequences I, II, III	ASTM D892	Nil	Nil	Nil	Nil	Nil
Demulsibility	ASTM D1401	Excellent	Excellent	Excellent	Excellent	Excellent
Evaporation, %	ASTM D972	0.10	0.13	0.10	0.10	0.12
Carbon Residue, %	ASTM D189	<0.01	<0.01	<0.01	<0.01	<0.01
Specific Gravity	ASTM D1298	1.05	1.01	0.97	0.96	1.01

PGWI SERIES

PREMIUM PAG-BASED LUBRICANTS

Applications:

The PGWI Series fluids are full synthetic lubricants formulated with superior polyalkylene glycol (PAG) base oils. These premium lubricants are designed for use in compressors and vacuum pumps compressing polar gases, such as NH3, CO2, and propane. They offer excellent rust resistance and are excellent in wet gas compression. The PGWI Series yield a compressor service life of 8,000 – 10,000 hours under good operating conditions.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Reciprocating Compressors
- Vacuum Pump

Performance Benefits:

- Resists hydrocarbon washout/dilution
- Extended drain life
- Reduced sludge and deposit formation
- Excellent oxidative and thermal stability

TYPICAL PROPERTIES	TEST METHOD	PGWI 46	PGWI 68	PGWI 100	PGWI 150	PGWI 220
ISO Grade	---	46	68	100	150	220
Viscosity @ 40°C,cSt	ASTM D445	46	69	106	154	220
Viscosity @ 100°C,cSt	ASTM D445	9.4	12.9	18.9	25.7	34.5
Viscosity Index	ASTM D2270	191	193	195	195	205
Flash Point, °C/°F	ASTM D92	210/415	230/445	230/445	230/445	230/445
Pour Point, °C/°F	ASTM D97	-50/-60	-40/-40	-40/-40	-38/-36	-38/-36
FZG Load Stage	DIN-51354	11	11	11	12	---
Four ball wear-40Kg., 1200rpm, 1 hr@75°C, Scar Diameter, mm	ASTM D4172	0.53	0.52	0.51	0.51	---
Specific Gravity	ASTM D1298	0.98	0.98	0.98	0.99	0.99

Caution: Not compatible with petroleum oils and synthetic hydrocarbons

PGWS SERIES

PREMIUM PAG-BASED LUBRICANTS

Applications:

The PGWS series fluids are full synthetic lubricants formulated with premium polyalkylene glycol (PAG) base oils. The PGWS lubricants are designed for use in compressors, vacuum pumps, enclosed gears, bearings, and other applications where unique properties of these fluids are necessary. The use of the PGWS oils in gas compression preserves the unique viscosity-temperature relationships of these premium products by resisting thinning out by hydrocarbon dilution. PGWS lubricants yield a compressor service life of 8,000 – 10,000 hours under good operating conditions.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Reciprocating Compressors
- Vacuum Pumps
- Enclosed gears and bearings

Performance Benefits:

- Resists hydrocarbon washout/dilution
- Extended drain life
- Reduced sludge and deposit formation
- Excellent oxidative and thermal stability

TYPICAL PROPERTIES	TEST METHOD	PGWS 68	PGWS 100	PGWS 150	PGWS 220
ISO Grade	ASTM D2422	68	100	150	220
Viscosity @ 40°C,cSt	ASTM D445	71	93.3	150	220
Viscosity @ 100°C,cSt	ASTM D445	14.4	17.9	24.6	38
Viscosity Index	ASTM D2270	208	211	218	225
Flash Point, °C/°F	ASTM D92	227/440	227/440	270/530	280/540
Pour Point, °C/°F	ASTM D97	-46/-50	-44/-47	-42/-44	-37/-35
FZG, load stage	DIN-51354	---	11	11	12
Rust Prevention	ASTM D665A	Pass	Pass	Pass	Pass
Specific Gravity	ASTM D1298	1.0-1.1	1.0-1.1	1.0-1.1	1.0-1.1

Caution: Not compatible with petroleum oils and synthetic hydrocarbons

CHEMLUBE® CF32 & CF46

CENTRIFUGAL COMPRESSOR LUBRICANTS

Applications:

The Chemlube CF32 and CF46 are formulated with the highest quality polyalphaolefin (PAO) base oils. These 100% premium synthetic oils are designed for use in centrifugal compressors. The carefully designed additive package in Chemlube CF oils provide anti-wear properties to protect the bull gears which operate at 1200-3600 RPM. At the same time, the Chemlube CF oils lubricate and protect the high speed (30,000-50,000 RPM) impeller bearings. Chemlube CF oils have been used successfully for many years in large and small centrifugal compressors. They offer a service life of 12,000 hours in centrifugal compressors in good operating conditions.

Typical Industrial Applications:

- Centrifugal Compressors

Performance Benefits:

- Energy savings – generally 3-5%
- Greatly extended oil change intervals (5X petroleum)
  - √ Less downtime for maintenance
  - √ Reduced waste oil disposal cost
- Eliminates or reduces varnish and shellac on critical component surfaces
- Increased thermal and oxidative stability over petroleum oils
- High flash point helps reduce fire hazards
- Gearboxes run cooler due to reduced friction
- Excellent anti-wear additives
- Wide operating temperature range and high viscosity index

TYPICAL PROPERTIES	TEST METHOD	Chemlube CF 32	Chemlube CF 46
ISO Grade	ASTM D2422	32	46
Viscosity @ 40°C,cSt	ASTM D445	31.1	47.3
Viscosity @ 100°C,cSt	ASTM D445	5.8	7.9
Viscosity Index	ASTM D2270	127	136
Flash Point, °C/°F	ASTM D92	240/464	240/464
Pour Point, °C/°F	ASTM D97	-48/-54	-48/-54
Demulsibility	ASTM D1401	41-39-0(10)	40-40-0(10)
Specific Gravity	ASTM D1298	0.86	0.86

CHEMLUBE® CV

CENTRIFUGAL COMPRESSOR LUBRICANT

Applications:
Chemlube CV is a synthetic diester-based lubricant designed for use in centrifugal air compressors. Chemlube CV is formulated from with premium diester base oil and excellent antioxidants and anti-wear additives.

Typical Industrial Applications:
- Centrifugal Compressors
- Vacuum Pumps

Performance Benefits:
- Outstanding thermal and oxidative stability
- Superior anti-wear protection
- Excellent low temperature properties
- High flash point means increased safety
- Caution: May affect some paint finishes, plastics and seals

TYPICAL PROPERTIES	TEST METHOD	Chemlube CV
ISO Grade	ASTM D2422	15
Viscosity @ 40°C,cSt	ASTM D445	14
Viscosity @ 100°C,cSt	ASTM D445	3
Viscosity Index	ASTM D2270	120
Flash Point, °C/°F	ASTM D92	230/446
Pour Point, °C/°F	ASTM D97	-65/-85
Specific Gravity	ASTM D1298	0.95

ULTRA GOLD

CENTRIFUGAL COMPRESSOR LUBRICANT

Applications:
Ultra Gold is designed for use in centrifugal compressors that require an ISO 32 viscosity. It is a fully synthetic lubricant based on a thermally and oxidatively stable polyol ester (POE)/polyalkylene glycol (PAG) blend. Ultra Gold was formulated to help prevent rust and copper corrosion and to resist forming varnish. Ultra Gold should not be mixed with synthetic hydrocarbon or petroleum oils.

Typical Industrial Applications:
- Centrifugal Compressors

Performance Benefits:
- Outstanding thermal and oxidative stability
- Wide operating temperature range
- Rust and copper corrosion protection
- High flash point means increased safety

TYPICAL PROPERTIES	TEST METHOD	Ultra Gold
ISO Grade	ASTM D2422	32
Viscosity @ 40°C,cSt	ASTM D445	30.8
Viscosity @ 100°C,cSt	ASTM D445	6.3
Viscosity Index	ASTM D2270	160
Flash Point, °C/°F	ASTM D92	227/441
Pour Point, °C/°F	ASTM D97	-54/-65
Foaming Sequence I, II, III	ASTM D892	Nil
Specific Gravity	ASTM D1298	0.99

PLATINUM BTG

SILICONE COMPRESSOR LUBRICANT

Applications:
Platinum BTG is a super premium synthetic silicone compressor fluid designed to replace OEM silicone fluids in rotary screw compressors. This product is specially formulated with silicone base fluids and appropriate additives to perform over an extremely long period of time. It is fortified against rust, corrosion, oxidation and wear. BTG may be added directly to 24KT.

Typical Industrial Applications:
- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors

Performance Benefits:
- Outstanding thermal and oxidative stability
- Compatible with OEM silicone fluids
- Wide operating temperature range
- High film strength
- Extreme long life fluid
- Excellent rust and corrosion control

TYPICAL PROPERTIES	TEST METHOD	Platinum BTG
ISO Grade	ASTM D2422	n/a
Viscosity @ 40°C,cSt	ASTM D445	38.3
Viscosity @ 100°C,cSt	ASTM D445	16
Viscosity Index	ASTM D2270	429
Flash Point, °C/°F	ASTM D92	302/575
Pour Point, °C/°F	ASTM D97	-54/-65
Copper Corrosion	ASTM D130	1a
Demulsibility	ASTM D1401	40/40/0
Specific Gravity	ASTM D1298	0.96

GENERIC SAE 30

PREMIUM PETROLEUM COMPRESSOR LUBRICANT

Applications:

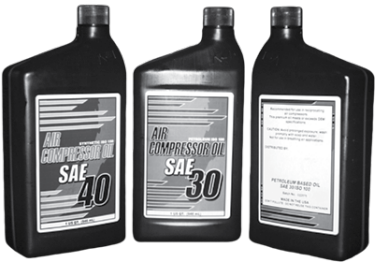
The Generic* SAE 30 Compressor Lubricant is a high performance lubricant and is considered environmentally friendly since it is zinc free. Ultrachem offers this premium petroleum oil as an answer for when OEM specifications are critical. They are also useful where frequent change outs are necessary due to poor environments prone to contamination from dust, acids, solvents, gases, or other contaminants. The Generic SAE 30 Compressor Oil has a service life of 2,000 – 3,000 hours under good operating conditions in rotary screw compressors and up to 2,000 hours in reciprocating compressors.

Typical Industrial Applications:

- Reciprocating Compressors
- High Pressure Hydraulic Systems
- High Pressure Turbines

Performance Benefits:

- Excellent rust and oxidation inhibitors
- Premium anti-wear additives and built-in oxidation stability
- Will not foam
- Great demulsibility
- Meets: DIN 51524, DIN51517; AFNOR NF E 48-603; Cincinnati-Milacron P-38, P-55, P-54, P-57, P-62; DIN 51515; SIEMENS TLV 9013 04; BS 489; GEK 32568 A/C; MIL-L-17672 D; CEGB 207001; Brown Boveri HTGD 9011; U.S. Steel 12; Westinghouse Electric Corporation Turbine Oil Spec.



TYPICAL PROPERTIES	TEST METHOD	Generic SAE 30
ISO Grade	ASTM D2422	100
Viscosity @ 40°C,cSt	ASTM D445	96
Viscosity @ 100°C,cSt	ASTM D445	11.3
Viscosity Index	ASTM D2270	104
Flash Point, °C/°F	ASTM D92	254/490
Pour Point, °C/°F	ASTM D97	-18/0
FZG Pass Stages	ASTM D5182	9
Rust Protection	ASTM D665A	Pass
Four Ball Wear, 40 Kg., 1200rpm, 75°C, 1 hr., Scar Diameter, mm	ASTM D4172	0.45
Specific Gravity	ASTM D1298	0.87

*Generic SAE 30 and 40 are prepackaged in quart containers, 12 quarts to a case. There are no Ultrachem marks on the packaging making it perfect for your company to include in your private label line.

GENERIC SAE 40

PREMIUM DIESTER-BASED COMPRESSOR LUBRICANT

Applications:
The Generic* SAE 40 Compressor Oil is a synthetic lubricant specifically designed for use in upper cylinders and crankcases of reciprocating units. This compressor oil is formulated with premium diester base oils that extend the service life of the oil to 8,000 hours under good operating conditions.

Typical Industrial Applications:
- Reciprocating Compressors

Performance Benefits:
- Outstanding thermal and oxidative stability
- Will not varnish or form carbon deposits
- Wide operating temperature range
- Built-in detergency action
- Extended drain intervals reducing oil disposal and increasing cost effectiveness
- Caution: May affect some paint finishes, plastics and seals
- USDA H-2 authorized

TYPICAL PROPERTIES	TEST METHOD	Generic SAE 40
ISO Grade	ASTM D2422	150
Viscosity @ 40°C,cSt	ASTM D445	146.5
Viscosity @ 100°C,cSt	ASTM D445	13.3
Viscosity Index	ASTM D2270	90
Flash Point, °C/°F	ASTM D92	271/520
Pour Point, °C/°F	ASTM D97	-34/-30
Copper Corrosion	ASTM D130	1a
Foaming Sequences I, II, III	ASTM D892	Nil
Demulsibility	ASTM D1401	Excellent
Evaporation, %	ASTM D972	0.90
Carbon Residue, %	ASTM D189	<0.02
Specific Gravity	ASTM D1298	0.94

*Generic SAE 30 and 40 are prepackaged in quart containers, 12 quarts to a case. There are no Ultrachem marks on the packaging making it perfect for your company to include in your private label line.

ULTRA-TEC

COMPRESSOR LUBRICANT

Applications:
ULTRA-TEC is made from a severely hydro-treated, hydro-cracked hydrocarbon base fluid and designed especially for portable compressor applications. ULTRA-TEC has been formulated with excellent anti-wear and high film- strength properties to provide the superior lubricating performance required for the severe service conditions in the portable compressor industry. This lubricant is designed to extend portable compressor life well beyond the standard motor oils and hydraulic fluids typically used in this service.

Typical Industrial Applications:
- Rotary Screw Compressors

Performance Benefits:
- Superior lubricating film strength
- Compatible with all seal materials
- Excellent rust & oxidation protection
- Superior wear protection
- Excellent low temperature performance
- Reduced foaming & fluid loss in severe service conditions
- Cleaner running operation, more resistant to varnish

TYPICAL PROPERTIES	TEST METHOD	ULTRA-TEC
ISO Grade	ASTM D2422	32/46
Viscosity @ 40°C,cSt	ASTM D445	38
Viscosity @ 100°C,cSt	ASTM D445	7.82
Viscosity Index	ASTM D2270	183
Flash Point, °C/°F	ASTM D92	226/439
Pour Point, °C/°F	ASTM D97	-44/-47
Specific Gravity	ASTM D1298	0.85

CHEMLUBE® NGC SERIES

NATURAL GAS COMPRESSOR LUBRICANTS

Applications:
The Chemlube NGC products are full synthetic blends, formulated utilizing superior base stock fortified with a proprietary additive package. Chemlube NGC 100 and 150 were designed to inhibit the formation of varnish and carbon build-up and also will protect against thermal break down and extend oxidative stability. They provide extended equipment life and decrease lubricant drain intervals.

Typical Industrial Applications:
- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Reciprocating Compressors

Performance Benefits:
- Excellent film strength
- Good compatibility with most base oils
- Good oxidative stability
- High flash point

TYPICAL PROPERTIES	TEST METHOD	Chemlube NGC 100	Chemlube NGC 150
ISO Grade	ASTM D2422	100	150
Viscosity @ 40°C,cSt	ASTM D445	97.3	151
Viscosity @ 100°C,cSt	ASTM D445	16.0	18.1
Viscosity Index	ASTM D2270	178	139
Flash Point, °C/°F	ASTM D92	252/486	252/486
Pour Point, °C/°F	ASTM D97	-36/-33	-36/-33
Specific Gravity	ASTM D1298	0.88	0.88

CHEMLUBE® NGE SERIES

NATURAL GAS ENGINE LUBRICANTS

Applications:

The Chemlube NGE products are full synthetic ester/polyalphaolefin (PAO)-based gas engine oils. The NGE Series are low ash oils that have been developed for four-cycle gas engines that are naturally aspirated to slightly turbocharged. Chemlube NGE Synthetic Oil Series provide low temperature pump-ability for remote engines operated in cold weather or intermittently. They are suitable for use in Caterpillar, Cooper-Bessemer, Cooper Superior, Cummins, Dresser-Rand Category I & II and Waukesha.

Chemlube NGE Synthetic Oil Series are appropriate for use in most industrial power plants fueled by dry, sweet natural gas. They provide low carbon formation, resistance to oxidation and nitration and superior deposit control due to the 100% synthetic base and select additives.

Typical Industrial Applications:

- Engines
- Reciprocating Compressors

Performance Benefits:

- Superior resistance to nitration and oxidation
- Excellent deposit control for pistons, spark plugs, ports and combustion chambers due to a low ash formula
- Outstanding protection against corrosion and wear

TYPICAL PROPERTIES	TEST METHOD	Chemlube NGE 5W-40	Chemlube NGE 20	Chemlube NGE 30
SAE Grade	SAE J-300	5W-40	20W	30W
Viscosity @ 210°F,cSt	ASTM D445	15.0	7.7	12.3
Viscosity @ 40°C,cSt	ASTM D445	84.4	70	83.98
Viscosity @ 100°C,cSt	ASTM D445	15.5	8.5	12.0
Viscosity Index	ASTM D2270	182	90	137
Flash Point, °C/°F	ASTM D92	>121/>250	>121/>250	>121/>250
Pour Point, °C/°F	ASTM D97	-46	-46	-46
TAN	ASTM D664	1.0	1.0	1.0
TBN	ASTM D2896	3.7	3.7	3.7
Specific Gravity	ASTM D1298	0.89	0.87	0.87

CHEMLUBE® NGBR SERIES

NATURAL GAS COMPRESSOR LUBRICANTS

Applications:
The Chemlube NGBR fluids are synthetic lubricants formulated for smaller booster or recovery compressors, using superior synthetic base stocks and select additives. They are superior to conventional petroleum-based oils and will inhibit the formation of varnish and carbon build-up. Chemlube NGBR 20W and 30W allow for extended equipment life and decrease lubricant drain intervals, reducing the waste oil disposal costs and extending equipment life.

Typical Industrial Applications:
- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Reciprocating Compressors

Performance Benefits:
- Excellent film strength
- Compatibility with most base oils
- Excellent oxidative stability
- Reduced maintenance costs
- Extended equipment life and drain intervals

TYPICAL PROPERTIES	TEST METHOD	Chemlube NGBR 20W	Chemlube NGBR 30W
ISO Grade	ASTM D2422	46	100
Viscosity @ 40°C,cSt	ASTM D445	50.0	96.9
Viscosity @ 100°C,cSt	ASTM D445	8.75	13.4
Viscosity Index	ASTM D2270	154	139
Flash Point, °C/°F	ASTM D92	253/489	248/479
Pour Point, °C/°F	ASTM D97	-49/-56	-49/-56
Specific Gravity	ASTM D1298	0.88	0.88

ULTRACLEAN

ROTARY-SCREW COMPRESSOR CLEANER AND SYSTEM FLUSH

Applications:
Ultraclean is a synthetic fluid designed to dissolve varnish and solubilize sludge from rotary-screw air compressors during operation. It can also be used as a system flush when changing-over from mineral to synthetic oils in order to reduce contamination due to oil carry-over. Regular use of Ultraclean will help you get the most out of your synthetic oil and your compressor by removing varnish and reducing operating temperature.

Typical Industrial Applications:
- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressor

Performance Benefits:
- Solubilizes and removes harmful varnish and "sludge"
- 100% synthetic
- Compatible with mineral oils as well as Ultrachem synthetic oils
- Contains no aromatic solvents or hazardous ingredients
- Contains additives so that it can be used as a lubricant for up to 500 hours
- High flash point
- Caution: May affect some paint finishes, plastics and seals
- USDA H-2 authorized

PROPERTY	TEST METHOD	Ultraclean
ISO Grade	ASTM D2422	32
SAE Grade	SAE J-300	10
Viscosity @ 40°C,cSt	ASTM D445	37.1
Viscosity @ 100°C,cSt	ASTM D445	6.5
Viscosity Index	ASTM D2270	126
Flash Point, °C/°F	ASTM D92	204/400
Pour Point, °C/°F	ASTM D97	-45/-49
Copper Corrosion	ASTM D130	1b
Demulsibility	ASTM D1401	Excellent
Specific Gravity	ASTM D1298	0.94

ULTRA-SOLV

CONCENTRATED CLEANER AND SYSTEM FLUSH

Applications:

Ultra-Solv is a solvent-type fluid designed to dissolve varnish and solubilize sludge as an additive at 5% to 10% concentration in oil for cleaning many types of industrial systems such as Bowser Sumps in Paper Mills during operation. ***(Not for use in Ammonia Compressors or with Polyalkylene gylcol or silicone fluids.)***

It can also be used to help flush a system when changing-over from mineral to synthetic oils in order to reduce contamination due to oil carry-over. Regular use of Ultra-Solv will help you get the most out of your synthetic oil and your equipment by removing varnish and reducing operating temperature.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Reciprocating Compressors
- Hydraulic Systems
- Gearboxes
- Vacuum Pumps
- Chains
- Bearings
- Reservoirs
- Airline Valves
- Heat Transfer Systems

Performance Benefits:

- Economical to use—only a 5% concentration required for most applications
- Solubilizes and removes harmful varnish and “sludge”
- Compatible with mineral oils and synthetic hydrocarbons
- Safe to use as directed--does not contain carcinogens or other hazardous materials found in some competitors products
- Very mild odor
- High flash point

Cleaning Procedure:

We recommend the use of 5% to 10%, generally 5%, of the UltraSolv with 90% to 95% of the fluid in the system. Ultra-Solv can be used with petroleum and synthetic hydrocarbon (PAO) oils. Temperature/time concentration relationships for industrial equipment: (Oil should be circulating.)

	5% Concentration	**10% Concentration**
Temperature Time	Room Temperature 3 – 4 Days	Room Temperature 1 – 2 Days
Temperature - Ideal Time	160° F 1 – 2 Days	160° F 24 Hours
Temperature - Maximum Time	300° F 4 Hours	300° F 2 Hours

Run equipment at normal operating conditions. Do not exceed 300° F.
Change the oil filter before and after cleaning. Inspect during cleaning if equipment is very dirty. Some filters are equipped with pressure drop gauges. Normally, a 10-psi drop indicates that the filter should be changed.
For safety reasons allow oil to cool (130° F max.) before draining. After draining, it is recommended that the oil system be flushed with clean oil. To flush, fill to minimum or normal oil level. Start equipment to circulate or splash oil around system. In gearboxes or other applications where heavy oil is normally used, stop equipment almost immediately after starting to prevent wear.

Product Compatibility:
Ultra-Solv is safe for use on ferrous and nonferrous metals used in industrial equipment. It is safe on most seals used in industrial equipment at 10% maximum concentrations.

This product is NOT compatible with Polyalkylene glycol (PAG) fluids.

TYPICAL PROPERTIES	TEST METHOD	Ultra-Solv
ISO Grade	ASTM D2422	46
SAE Grade	SAE J-300	20
Viscosity @ 40°C,cSt	ASTM D445	37
Viscosity @ 100°C,cSt	ASTM D445	5.6
Viscosity Index	ASTM D2270	88
Flash Point, °C/°F	ASTM D92	149/300
Lbs./Gallon	---	7.66
Odor	---	Mild
Specific Gravity	ASTM D1298	0.92

P-MPG EP SERIES

PETROLEUM MULTI-PURPOSE EP GEAR OILS

Applications:
The P-MPG EP Series are proven extreme pressure industrial lubricants made from highly refined based stocks and modern additive technology. They are exceptionally stable over a wide range of temperatures, have high load-carrying capacity, and quickly separate from water.

Typical Industrial Applications:
- Enclosed Gear Units: i.e. Spur, Helical, Bevel & Worm Gears
- Agitator Drives
- Centrifuge Gear Boxes
- Extruder Reducers
- Plain and Roller Contact Bearings
- Circulating and Splash Lubricated Systems
- Mist Systems
- EP Industrial Applications

Performance Benefits:
- Wide temperature range
- Intended for heavy-duty extreme pressure industrial applications
- Meets or exceeds the requirements for Cincinnati Milacron P-35, P-59, P-63, P-74, P-77; DIN 51517 Part 3; US Steel 224; David Brown S1.53.101; AGMA 9005-D94 Grades 2EP thru 7EP.

TYPICAL PROPERTIES	TEST METHOD	P-MPG 68 EP	P-MPG 100 EP	P-MPG 150 EP	P-MPG 220 EP	P-MPG 320 EP	P-MPG 460EP
AGMA Number		2EP	3EP	4EP	5EP	6EP	7EP
Viscosity @ 40°C, cSt	ASTM D445	68	100	150	220	320	460
Viscosity @ 100°C, cSt	ASTM D445	8.8	11.0	15.0	19.3	25.0	28.5
Viscosity Index	ASTM D2270	99	98	98	95	95	95
Gravity, °API		27.9	27	27	26.5	26.1	24.1
Flash Point, °C/°F	ASTM D92	204/400	210/410	213/415	213/415	232/450	238/460
Pour Point, °C/°F	ASTM D97	-21/-5	-21/-5	-21/-5	-18/0	-18/0	-18/0
Load Carrying Properties							
Timken OK Load, lb.	---	60	60	60	60	60	60
4Ball EP Test Load-wear index, kg	ASTM D2783	42	42	42	42	43	46
Weld Point, kg	---	260	250	250	250	250	250
4Ball wear test 20kg, 1800 rpm, 54°C (130°F), 1hr Wear scar diameter, mm	ASTM D2266	0.25	0.25	0.25	0.25	0.25	0.25
FZG Gear Test, stages		12	12	12	12	12	12
Demulsibility	ASTM D2711	86.3	85.5	84.1	82.2	83.0	84.9
Total Free Water, ml		0.1	0.1	0.1	0.1	0.1	0.1
Emulsion, ml							
Copper Corrosion	ASTM D130	Pass	Pass	Pass	Pass	Pass	Pass
Rust Prevention	ASTM D665	Pass	Pass	Pass	Pass	Pass	Pass
Foam Test	ASTM D892	Pass	Pass	Pass	Pass	Pass	Pass
Lbs./Gal.		7.34	7.42	7.42	7.51	7.51	7.59
Specific Gravity		0.88	0.89	0.89	0.90	0.90	0.91

CHEMLUBE® 600 SERIES

MULTI-PURPOSE PAO-BASED LUBRICANTS

Applications:

The Chemlube 600 series are fully synthetic and has been formulated from premium polyalphaolefin (PAO) base fluids for enclosed gear systems requiring ashless antioxidants and anti-wear. These oils have been designed to provide proper lubrication under hydrodynamic and mild boundary lubrication conditions. They are recommended for gear systems where moderate loads and high temperatures are expected, including worm gears containing soft metals such as bronze, brass and copper.

The Chemlube 600 series oils are multipurpose lubricants that can be used a wide variety of industrial applications. They are similar to petroleum oils in their compatibility to seals, hoses, gaskets and paint.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Reciprocating Compressors
- Vacuum Pumps
- Hydraulic Systems
- Blowers
- Enclosed Gear Units: i.e. Spur, Helical, Bevel & Worm Gears
- Plain and Roller Contact Bearings
- Circulating and Splash Lubricated Systems
- Mist Systems

Performance Benefits:

- 100% Synthetic Lubricant
- Wide Temperature Range
- Low Pour Points
- High Flash Points
- Increased Thermal & Oxidative Stability

CHEMLUBE® 600 SERIES

MULTI-PURPOSE PAO-BASED LUBRICANTS

TYPICAL PROPERTIES	TEST METHOD	Chemlube 624	Chemlube 625	Chemlube 626	Chemlube 627	Chemlube 629
ISO Grade	ASTM D2422	32	46	68	100	150
Viscosity @ 40°C,cSt	ASTM D445	31.1	47.3	68.6	95.2	156.3
Viscosity @ 100°C,cSt	ASTM D445	5.75	7.86	10.1	12.85	18.29
Viscosity Index	ASTM D2270	127	136	132	133	131
Flash Point, °C/°F	ASTM D92	240/464	240/464	238/460	260/500	260/500
Pour Point, °C/°F	ASTM D97	-48/-55	-48/-55	-48/-55	-45/-49	-45/-49
Copper Corrosion	ASTM D130	1B	1B	1B	1B	1B
Rust Prevention	ASTM D665	Pass	Pass	Pass	Pass	Pass
Evaporation, %	ASTM D972	<1%	<1%	<1%	<1%	<1%
Specific Gravity	ASTM D1298	0.86	0.86	0.86	0.87	0.87

TYPICAL PROPERTIES	TEST METHOD	Chemlube 630	Chemlube 632	Chemlube 634	Chemlube 636	Chemlube 639
ISO Grade	ASTM D2422	220	320	460	680	1000
Viscosity @ 40°C,cSt	ASTM D445	230.4	311.3	486.2	676.7	980.9
Viscosity @ 100°C,cSt	ASTM D445	24.14	29.57	41.37	54.35	98.02
Viscosity Index	ASTM D2270	131	130	133	140	136
Flash Point, °C/°F	ASTM D92	262/504	270/518	270/518	270/518	270/518
Pour Point, °C/°F	ASTM D97	-35/-31	-33/-27	-27/-17	-25/-13	-23/-9
Copper Corrosion	ASTM D130	1B	1B	1B	1B	1B
Rust Prevention	ASTM D665	Pass	Pass	Pass	Pass	Pass
Evaporation, %	ASTM D972	<1%	<1%	<1%	<1%	<1%
Specific Gravity	ASTM D1298	0.87	0.88	0.88	0.88	0.88

CHEMLUBE® 700 SERIES

MULTI-PURPOSE PAO-BASED LUBRICANTS

Applications:
The Chemlube 700 Series fluids are full synthetics and have been formulated from premium polyalphaolefins (PAO) base fluids for enclosed gear systems requiring ashless antioxidants, anti-wear and mild EP additive systems. These oils have been designed to provide superior lubrication under hydrodynamic and mild boundary lubrication conditions. They are recommended for gear systems where moderate loads and high temperatures are expected, including worm gears containing soft metals such as bronze, brass and copper.

The Chemlube 700 Series oils are multipurpose lubricants that can be used a wide variety of industrial applications. They are similar to petroleum oils in their compatibility to seals, hoses, gaskets and paint. These oils have higher VI values than the Chemlube 600 series.

Typical Industrial Applications:
- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Reciprocating Compressors
- Vacuum Pumps
- Hydraulic Systems
- Blowers
- Enclosed Gear Units: i.e. Spur, Helical, Bevel & Worm Gears
- Plain and Roller Contact Bearings
- Circulating and Splash Lubricated Systems
- Mist Systems

Performance Benefits:
- 100% Synthetic Lubricant
- Wide Temperature Range
- Low Pour Points
- High Flash Points
- Increased Thermal & Oxidative Stability

Ultrachem 700 Series lubricants meet the requirements of Flender's Micro Pitting,
And have the following approvals: U.S. Steel 224; David Brown Type E; C Machines P-76; Cincinnati Milacron.

CHEMLUBE® 700 SERIES

MULTI-PURPOSE PAO-BASED LUBRICANTS

TYPICAL PROPERTIES	TEST METHOD	Chemlube 724	Chemlube 725	Chemlube 726	Chemlube 727	Chemlube 729
ISO Grade	ASTM D2422	32	46	68	100	150
Viscosity @ 40°C,cSt	ASTM D445	32.9	47	67	104	163
Viscosity @ 100°C,cSt	ASTM D445	6.2	7.9	10.2	13.4	17.9
Viscosity Index	ASTM D2270	140	141	135	154	149
Flash Point, °C/°F	ASTM D92	240/464	240/464	238/460	260/500	260/500
Pour Point, °C/°F	ASTM D97	-48/-54	-48/-54	-48/-54	-45/-49	-45/-49
Copper Corrosion	ASTM D130	1B	1B	1B	1B	1B
Rust Prevention	ASTM D665	Pass	Pass	Pass	Pass	Pass
Evaporation	ASTM D972	<1%	<1%	<1%	<1%	<1%
FZG, load stage	ASTM D5182	10	12	12	12	12
Specific Gravity	ASTM D1298	0.86	0.85	0.85	0.87	0.86

TYPICAL PROPERTIES	TEST METHOD	Chemlube 730	Chemlube 732	Chemlube 734	Chemlube 736	Chemlube 739
ISO Grade	ASTM D2422	220	320	460	680	1000
Viscosity @ 40°C,cSt	ASTM D445	222	312	469	671	943
Viscosity @ 100°C,cSt	ASTM D445	22.2	28.5	38.5	48.4	62.2
Viscosity Index	ASTM D2270	149	153	150	151	172
Flash Point, °C/°F	ASTM D92	262/504	270/518	270/518	270/518	270/518
Pour Point, °C/°F	ASTM D97	-35/-31	-33/-27	-27/-17	-25/-13	-23/-9
Copper Corrosion	ASTM D130	1B	1B	1B	1B	1B
Rust Prevention	ASTM D665	Pass	Pass	Pass	Pass	Pass
Evaporation	ASTM D972	<1%	<1%	<1%	<1%	<1%
FZG, load stage	ASTM D5182	12	12	12	12	12
Specific Gravity	ASTM D1298	0.87	0.87	0.87	0.88	0.88

OMNIGEAR EP SERIES

PREMIUM PAO GEAR LUBRICANTS

Applications:

Omnigear EP Gear lubricants are 100% synthetic, heavy duty industrial polyalphaolefin (PAO) gear oils intended for enclosed gears operating under adverse loads and temperatures. These are high quality, extreme pressure PAO gear oils offering exceptional performance in gears and other industrial applications.

Omnigear EP Gear lubricants are available in a wide range of ISO viscosity grades; ISO Grades 32 to 680.

Typical Industrial Applications:

- Enclosed Gear Units: i.e. Spur, Helical, Bevel & Worm Gears
- Agitator Drives
- Centrifuge Gear Boxes
- Extruder Reducers
- Plain and Roller Contact Bearings
- Circulating and Splash Lubricated Systems
- Mist Systems

Performance Benefits:

- Reduced downtime due to extended change intervals
- High viscosity index
- Wide temperature range
- Longer life than conventional oils
- Intended for heavy-duty extreme pressure industrial applications

Omnigear EP Gear Oils meet the requirements of U.S. Steel 224; AMGA 250.04; DIN 51517 Part 3; David Brown S1.53.101; Cincinnati Milacron.

OMNIGEAR EP SERIES

PREMIUM PAO GEAR LUBRICANTS

TYPICAL PROPERTIES	TEST METHOD	Omnigear EP 68	Omnigear EP 100	Omnigear EP 150
ISO Grade	ASTM D2422	68	100	150
Viscosity @ 40°C,cSt	ASTM D445	68	102	151.2
Viscosity @ 100°C,cSt	ASTM D445	9.9	13.2	17.8
Viscosity Index	ASTM D2270	128	127	130
Flash Point, °C/°F	ASTM D92	240/464	240/464	257/495
Pour Point, °C/°F	ASTM D97	-48/-55	-45/-49	-45/-49
Copper Corrosion	ASTM D130	1B	1B	1B
Rust Prevention	ASTM D665	Pass	Pass	Pass
Carbon Residue, %	ASTM D189	Nil	Nil	Nil
Color	Visual	Amber	Amber	Amber
Timken O.K. Load, lbs.	ASTM D2782	75	75	80
AGMA Lubricant Number	---	2 EP	3 EP	4 EP
Specific Gravity	ASTM D1298	0.88	0.87	0.86

TYPICAL PROPERTIES	TEST METHOD	Omnigear EP 220	Omnigear EP 320	Omnigear EP 460	Omnigear EP 680
ISO Grade	ASTM D2422	220	320	460	460
Viscosity @ 40°C,cSt	ASTM D445	237	309.6	480	609.2
Viscosity @ 100°C,cSt	ASTM D445	24.9	28.3	41.0	44.5
Viscosity Index	ASTM D2270	133	123	133	121
Flash Point, °C/°F	ASTM D92	221/430	235/455	250/482	250/482
Pour Point, °C/°F	ASTM D97	-37/-33	-37/-33	-30/-22	-20/-4
Copper Corrosion	ASTM D130	1B	1B	1B	1B
Rust Prevention	ASTM D665	Pass	Pass	Pass	Pass
Carbon Residue, %	ASTM D189	Nil	Nil	Nil	Nil
Color	Visual	Amber	Amber	Amber	Amber
Timken O.K. Load, lbs.	ASTM D2782	85	85	85	80
AGMA Lubricant Number	---	5 EP	6 EP	7 EP	8 EP
Specific Gravity	ASTM D1298	0.87	0.87	0.87	0.88

ULTRACHEM EP PAO SERIES

PREMIUM PAO EP GEAR LUBRICANTS

Applications:

Ultrachem EP PAO Gear Lubricants are 100% synthetic, heavy duty industrial gear oils formulated from the highest quality polyalphaolefin (PAO) base fluids. They are designed for intended for enclosed gears operating under adverse loads, temperatures and where EP may be required. A variety of seven viscosity grades, all with excellent VI's, meet the requirements of AGMA 2 EP through 8 EP. These oils cover a wide range of operating temperature and load conditions. The Ultrachem EP PAO series have higher VI values than the Omnigear EP series

Typical Industrial Applications:

- Enclosed Gear Units: i.e. Spur, Helical, Bevel & Worm Gears
- Agitator Drives
- Centrifuge Gear Boxes
- Extruder Reducers
- Plain and Roller Contact Bearings
- Circulating and Splash Lubricated Systems
- Mist Systems

Performance Benefits:

- Reduced downtime due to extended change intervals
- 100% synthetic lubricant with a High Viscosity Index
- Wide temperature range -50F to +250F, depending on grade chosen
- Longer life than conventional oils
- Intended for heavy-duty extreme pressure industrial applications

Ultrachem EP Gear Oils are made with superior EP additives that are proven in the field and include the following approvals: U.S. Steel 224; David Brown S1.53.101; Cincinnati Milacron; DIN 51517 Part 3.

ULTRACHEM EP PAO SERIES

PREMIUM PAO EP GEAR LUBRICANTS

TYPICAL PROPERTIES	TEST METHOD	Ultrachem EP PAO 68	Ultrachem EP PAO 100	Ultrachem EP PAO 150
ISO Grade	ASTM D2422	68	100	150
Viscosity @ 40°C,cSt	ASTM D445	69.6	102	155
Viscosity @ 100°C,cSt	ASTM D445	11.3	14.6	19.7
Viscosity Index	ASTM D2270	158	147	147
Flash Point, °C/°F	ASTM D92	240/464	240/464	257/495
Pour Point, °C/°F	ASTM D97	-48/-55	-45/-49	-45/-49
Copper Corrosion	ASTM D130	1B	1B	1B
Rust Prevention	ASTM D665	Pass	Pass	Pass
Carbon Residue, %	ASTM D189	Nil	Nil	Nil
Color	Visual	Amber	Amber	Amber
Timken O.K. Load, lbs.	ASTM D2782	75	75	75
FZG, load stage	ASTM D5182	10	12	12
AGMA Lubricant Number	---	2 EP	3 EP	4 EP
Specific Gravity	ASTM D1298	0.86	0.86	0.87

TYPICAL PROPERTIES	TEST METHOD	Ultrachem EP PAO 220	Ultrachem EP PAO 320	Ultrachem EP PAO 460	Ultrachem EP PAO 680
ISO Grade	ASTM D2422	220	320	460	680
Viscosity @ 40°C,cSt	ASTM D445	229	320	486	696
Viscosity @ 100°C,cSt	ASTM D445	26.9	34.3	46.6	58.3
Viscosity Index	ASTM D2270	152	152	152	148
Flash Point, °C/°F	ASTM D92	221/430	235/455	250/482	250/482
Pour Point, °C/°F	ASTM D97	-37/-33	-37/-33	-30/-22	-20/-4
Copper Corrosion	ASTM D130	1B	1B	1B	1B
Rust Prevention	ASTM D665	Pass	Pass	Pass	Pass
Carbon Residue, %	ASTM D189	Nil	Nil	Nil	Nil
Color	Visual	Amber	Amber	Amber	Amber
Timken O.K. Load, lbs.	ASTM D2782	85	85	85	80
FZG, load stage	ASTM D5182	12	12	12	12
AGMA Lubricant Number	---	5 EP	6 EP	7 EP	8 EP
Specific Gravity	ASTM D1298	0.87	0.87	0.88	0.88

CHEMLUBE® HEAVY DUTY EP

DIESTER GEAR LUBRICANTS

Applications:

Chemlube Heavy Duty EP Gear Oils are full synthetic, heavy duty gear oils composed of superior ester base fluids for a wide variety of extreme pressure industrial applications and automotive differential applications. These gear lubricants are proven in extreme environmental conditions and in applications that demand high heat resistance, anti-wear and superior lubricity of enclosed gearboxes. The highly polar nature of these ester based gear oils allows them to wet metal surfaces and provide lubrication on start-up after prolonged periods of inactivity.

Typical Industrial Applications:

- Enclosed Gear Units: i.e. Spur, Helical, Bevel & Worm Gears
- Automotive Differential Applications
- EP Industrial Applications

Performance Benefits:

- Highest film strength available
- Reduces operating temperature through reduced friction
- Rapid lubrication in cold weather
- Caution: May affect some paint finishes, plastics and seals

Chemlube Heavy Duty EP Gear oils meet the following requirements: U.S. Steel 224; AGMA 250.04; SAEJ2360; API GL4; API GL5. Chemlube 80W carries the NSN #9150-01-152-1094.

TYPICAL PROPERTIES	TEST METHOD	Chemlube 80W	Chemlube 85W-90	Chemlube 140	Chemlube 150	Chemlube 250
ISO Grade	ASTM D2422	68	150	220	320	460
Viscosity @ 40°C,cSt	ASTM D445	71.2	150.6	301	326	376
Viscosity @ 100°C,cSt	ASTM D445	11.0	18.4	34.5	36.5	41.4
Viscosity Index	ASTM D2270	146	137	160	160	163
Flash Point, °C/°F	ASTM D92	232/450	232/450	232/450	232/450	232/450
Pour Point, °C/°F	ASTM D97	-51/-60	-46/-51	-46/-51	-40/-40	-35/-37
Copper Corrosion	ASTM D130	1B	1B	1B	1B	1B
Rust Prevention	ASTM D665	Pass	Pass	Pass	Pass	Pass
Carbon Residue, %	ASTM D189	Nil	Nil	Nil	Nil	Nil
Timken O.K. Load, lb.	ASTM D2783	95	85	90	90	90
AGMA Lubricant Number	---	2 EP	4 EP	5 EP	6 EP	7 EP
Specific Gravity	ASTM D1298	0.91	0.91	0.92	0.92	0.93

PGWS SERIES

PREMIUM PAG-BASED GEAR LUBRICANTS

Applications:
The PGWS Series are 100% synthetic, high performance gear oils formulated with superior polyalkylene glycol (PAG)-based oils. Premium anti-oxidants, anti-wear, and corrosion inhibitor additives enhance the performance of these products. The PGWS Series are recommended for industrial worm gear lubrication. They can also function well as general purpose gear lubrication.

Typical Industrial Applications:
- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Reciprocating Compressors
- Vacuum Pumps
- Enclosed gears and bearings

Performance Benefits:
- Resists hydrocarbon washout/dilution
- High load carrying capacity
- Reduced sludge and deposit formation
- Excellent oxidative and thermal stability
- Low friction and less power consumption
- Good steel on steel and steel on bronze anti-wear

TYPICAL PROPERTIES	TEST METHOD	PGWS 150	PGWS 220	PGWS 320	PGWS 460	PGWS 680	PGWS 1000
ISO Grade	ASTM D2422	150	220	320	460	680	1000
Viscosity @ 40°C,cSt	ASTM D445	150	220	340.6	460	688	1000
Viscosity @ 100°C,cSt	ASTM D445	25	38	58	71	118	167
Viscosity Index	ASTM D2270	223	225	240	253	264	274
Flash Point, °C/°F	ASTM D92	270/530	280/540	280/540	280/540	280/540	280/540
Pour Point, °C/°F	ASTM D97	-42/-44	-37/-35	-35/-29	-33/-27	-32/-26	-31/-24
FZG, load stage	DIN-51354	11	12	12	12	12	12
Rust Prevention	ASTM D665A	Pass	Pass	Pass	Pass	Pass	Pass
Specific Gravity	ASTM D1298	1.0-1.1	1.0-1.1	1.0-1.1	1.0-1.1	1.0-1.1	1.0-1.1

Caution: Not compatible with petroleum oils and synthetic hydrocarbons

ULTRACHEM SAE 50

MANUAL TRANSMISSION FLUID

Applications:

Ultrachem SAE 50 is a full synthetic manual transmission fluid engineered to meet the most demanding extended drain and OEM warranty requirements. This fluid is designed to provide maximum protection and extended operating life to heavy duty transmissions. Ultrachem SAE 50 provides significant advantages including outstanding high-temperature performance, oxidation stability, wear protection and corrosion control. It is recommended for year-round lubrication of manual transmissions in light to severe duty on or off highway equipment operating in a wide range of environments.

Typical Industrial Applications:

- Manual Transmissions

Performance Benefits:

- Readily meets performance requirements for longer drain interval applications
- Heavy duty manual transmissions where extended service intervals and warranties are required
- On highway, commercial light and heavy duty trucking, buses and vans
- Off highway industries including construction, mining and agriculture
- Excellent load carrying, anti-wear and EP performance
- Optimized thermal and oxidation protection
- Exceptional shear stability
- Outstanding low temperature fluidity

TYPICAL PROPERTIES	TEST METHOD	Ultrachem SAE 50
SAE Grade	---	50
Viscosity @ 40°C,cSt	ASTM D445	135
Viscosity @ 100°C,cSt	ASTM D445	17.8
Flash Point, °C/°F	ASTM D92	220/428
Pour Point, °C/°F	ASTM D97	-45/-49
Rust Prevention	ASTM D665	Pass
Lbs./Gal.	---	7.18
Specific Gravity	ASTM D1298	0.85

ULTRACHEM 75W-90 and 80W-140

SYNTHETIC GEAR LUBRICANTS

Applications:

Ultrachem 75W-90 AND 80W-140 gear oils are high performance, full synthetic drive train lubricants designed to meet the most demanding extended drain and warranty requirements. These products are engineered for use in heavy duty manual transmissions, axles and final drives that require gear lubricants with high viscosity and load-carrying capability. They have excellent performance in heavy duty industrial gear drives including hypoid and worm gears operating under conditions where high speed/shock load, high speed/low torque conditions exist. The additive technology provides excellent protection of gears and bearings and provides superior oxidative and thermal stability to the gear oil.

Typical Industrial Applications:

- Heavy Duty Manual Transmissions
- Axles
- Final Drives
- Industrial Gear Drives, i.e. Hypoid, Worm Gears
- Bearings
- *NOT* intended for use in automatic, manual or semi-automatic transmissions for where engine oil or automatic transmission fluids are recommended

Performance Benefits:

- Exceptional thermal stability and resistance to high temperature oxidation
- Extended service capability and excellent fuel economy
- Extended gear and bearing life due to minimal deposits, longer seal life
- Outstanding protection against low speed/high torque wear and high speed scoring
- Increased load-carrying capability. Reduced maintenance costs and longer equipment life
- Exceptional shear stability
- Retention of viscosity and film strength under severe operating conditions to prevent wear
- Excellent rust, staining and corrosion protection of copper
- Readily meets the requirements of longer drain interval applications
- Easily meets the requirements of ArvinMeritor 0-76Q, DANA SHAES, 256 Rev C, Navistar, SAE J2360, GL5, Mack G0-J, MT-1

TYPICAL PROPERTIES	TEST METHOD	Ultrachem 75W-90	Ultrachem 80W-140
SAE Grade	SAE J-300	75W-90	80W-140
Viscosity @ 40°C,cSt	ASTM D445	120	310
Viscosity @ 100°C,cSt	ASTM D445	14.8	26.6
Flash Point, °C/°F	ASTM D92	220/428	210/410
Pour Point, °C/°F	ASTM D97	-48/-54	-36/-33
AGMA Lubricant Number	---	4 EP	---
Specific Gravity	ASTM D1298	0.86	0.87

VACUUM PUMP LUBRICANT SERIES

VP 22 & VP 32
VP 22 & VP 32 oils are designed for use in liquid ring vacuum pumps. They are based on severely hydro-treated paraffinic oils with a superior additive package that includes antioxidants, anti-wear additives, corrosion protection and pour point depressants. They are compatible with petroleum oils and PAO's

VP 100 & VP 150
VP 100 & VP 150 are highly refined, premium detergent free oils designed for vacuum pump use. These oils are characterized by outstanding lubricating performance where oxidation, rust and high bearing and gear loading are not problems. They have excellent oxidation resistance and water separation

VPFG 100
VPFG 100 is a synthetic food grade oil. A polyalphaolefin (PAO) custom blend fluid for improved lubrication at high and low temperatures. This oil provides reduced volatility and is compatible with mineral oils.

VPSH 46 & VPSH 100
VPSH 46 & VPSH 100 are synthetic PAO fluids which offer excellent protection against wear, rust and corrosion. They are non-foaming and have excellent water resistance eliminating formation of emulsion. VPSH 46 & VPSH 100 are stable at high temperatures but also provide superior low temperature flow characteristics.

VPS3 68 & VPS3 100
VPS3 68 & VPS3 100 are semi-synthetic oils designed to provide long life under extreme conditions. They provide protection against wear, rust and corrosion. VPS3 68 & VPS3 100 resist oil breakdown due to oxidation and have excellent water resistance. These oils have low vapor pressure, low evaporation loss, and high oxidative, thermal and viscosity stability.

VPDE 68 & VPDE 100
VPDE 68 & VPDE 100 are full synthetic oils designed for long term lubrication in process pumps. They provide outstanding thermal and oxidative stability, a wide operating range and excellent water condensate separation.

VPGB 220
VPGB 220 is a full synthetic, high performance gear oil formulated for an array of medium to heavy duty applications. It is suitable for heavy duty ball and roller bearings. This oil provides optimum performance for a wide temperature range and exhibits excellent thermal and oxidative stability.

VACUUM PUMP LUBRICANT SERIES

TYPICAL PROPERTIES	TEST METHOD	VP 22	VP 32	VP 46	VP 68	VP 100	VP150
ISO Grade	---	22	32	46	68	100	150
Viscosity @ 40°C,cSt	ASTM D445	22.9	34	45	69	95	142.5
Viscosity @ 100°C,cSt	ASTM D445	4.1	5.5	7.3	9.3	11.4	13.1
Viscosity Index	ASTM D2270	77	92	120	112	95	95
Flash Point, °C/°F	ASTM D92	193/380	215/480	210/410	217/424	226/439	232/450
Pour Point, °C/°F	ASTM D97	-40/-40	-35/-31	-24/-11	-21/-6	-15/5	-15/5
Vapor Pressure @ 25°C, Torr		1×10^{-4}	1×10^{-4}	1×10^{-4}	1×10^{-4}	1×10^{-5}	1×10^{-5}
Specific Gravity	ASTM D1298	0.86	0.86	0.87	0.88	0.86	0.87
TYPICAL PROPERTIES	**TEST METHOD**	**VPFG 100**		**VPSH 46**	**VPSH 68**	**VPSH 100**	
ISO Grade	---	100		46	68	100	
Viscosity @ 40°C,cSt	ASTM D445	95.2		47.3	68.6	95.2	
Viscosity @ 100°C,cSt	ASTM D445	12.8		7.9	10.1	12.8	
Viscosity Index	ASTM D2270	133		136	132	133	
Flash Point, °C/°F	ASTM D92	260/500		240/464	238/460	260/500	
Pour Point, °C/°F	ASTM D97	-45/-49		-48/-55	-48/-55	-45/-49	
Vapor Pressure @ 25°C, Torr		1×10^{-5}		1×10^{-5}	1×10^{-5}	1×10^{-5}	
Specific Gravity	ASTM D1298	0.87		0.86	0.86	0.87	
TYPICAL PROPERTIES	**TEST METHOD**	**VPS3 68**	**VPS3 100**		**VPDE 68**	**VPDE 100**	**VPGB 220**
ISO Grade	---	68	100		68	100	220
Viscosity @ 40°C,cSt	ASTM D445	67	95		70	99	230
Viscosity @ 100°C,cSt	ASTM D445	9.9	12.4		7	10.2	24.1
Viscosity Index	ASTM D2270	132	124		60	83	131
Flash Point, °C/°F	ASTM D92	240/464	240/464		252/485	260/500	262/504
Pour Point, °C/°F	ASTM D97	-33/-27	-31/-23		-38/-35	-29/-30	-35/-31
Vapor Pressure @ 25°C, Torr		1×10^{-5}	1×10^{-5}		1×10^{-5}	1×10^{-5}	1×10^{-5}
Specific Gravity	ASTM D1298	0.86	0.86		0.96	0.95	0.87

ULTRACHEM INC
PREMIUM SYNTHETIC LUBRICANTS

Vacuum Pump Information

Ultrachem manufactures an extensive line of compressor and vacuum pump lubricants for virtually all industrial applications involving air and gas. We have generated vapor pressure information for reference on the following products:

Vapor Pressure (Torr) versus Temperature

Temp (°C)	VPS3 100	VPSH 46	VPDE 68	VPSH 68	VP 22	VP 32
50	0.5	0.5	0.7	0.7	1.5	0.2
100	1.4	1.4	2	2.5	4	0.7
150	3.5	3.5	4.5	7.5	11.8	2
200	7	7	9	22.3	27.7	6
250	13.3	13.3	21.6	53.9	56.1	15.5

CHEMLUBE® R&O SERIES

HYDRAULIC FLUIDS

Applications:
The Chemlube R&O products are high performance R&O hydraulic fluids. These premium petroleum hydraulic fluids have superior rust and oxidation inhibitors to provide excellent protection against rust, corrosion and deposit formation for longer service life. The Chemlube R&O Series have excellent water-separating properties to minimize the formation of emulsions, and are resistant to excessive foam buildup.

Typical Industrial Applications:
- High Pressure Hydraulic Systems
- High Pressure Turbines
- General Purpose Machinery
- Circulating Oil Systems
- Plain and Rolling-Element Bearings used in Electric Motors.
- Compressors
- Vacuum Pumps

Performance Benefits:
- Excellent rust and oxidation inhibitors
- Will not foam
- Great demulsibility
- Exceeds the performance requirements of the leading OEM hydraulic pump manufacturers

TYPICAL PROPERTIES	TEST METHOD	Chemlube R&O 32	Chemlube R&O 46	Chemlube R&O 68	Chemlube R&O 100
ISO Grade	ASTM D2422	32	46	68	100
Viscosity @ 40°C,cSt	ASTM D445	34	45	69	95
Viscosity @ 100°C,cSt	ASTM D445	5.3	7.3	9.3	11.5
Viscosity Index	ASTM D2270	136	120	112	109
Flash Point, °C/°F	ASTM D92	204/400	210/410	217/424	226/439
Pour Point, °C/°F	ASTM D97	-30/-22	-24/-11	-21/-6	-15/5
Copper Corrosion	ASTM D130	1a	1a	1a	1a
Rust – Sea Water	ASTM D665	Pass	Pass	Pass	Pass
Oxidation Stability	ASTM D943	7500+	7500+	7500+	---
Foaming Sequences I, II, III	ASTM D892	Pass	Pass	Pass	Pass
Specific Gravity	ASTM D1298	0.87	0.87	0.88	0.88

P-MPH AW SERIES

PETROLEUM MULTI-PURPOSE AW HYDRAULIC FLUIDS

Applications:
The P-MPH AW Series are high performance petroleum anti-wear hydraulic fluids for use in a wide variety of industrial and mobile hydraulic systems, mining equipment, and moderately loaded gear sets, as well as general purpose lubrication. These fluids are designed for use in piston, gear pumps, and vane pumps used in industrial and mobile hydraulic systems. The P-MPH AW Series have superior anti-wear additives to provide excellent wear protection for pumps, motors, and other hydraulic systems components. They have outstanding oxidation resistance and protect against rust and corrosion. This series also has excellent demulsibility in the presence of water and provides foam resistance.

Typical Industrial Applications:
- Hydraulic Systems on Mobile Equipment, i.e. Dump Trucks, Motor Graders, Bulldozers, and Forklifts
- Hydraulic Presses, Shears, Jacks and Punches in Machine Shops
- Automated Machine Tools
- Chain Drives
- Plain and Rolling-Element Bearings used in Electric Motors.
- Hydraulic Systems
- Service Station Lifts
- Electrical Service Repair Trucks
- Compressors
- Vacuum Pumps
- Mining Equipment

Performance Benefits:
- Excellent anti-wear protection
- Meets or exceeds the specifications of Dennison HF-2, Vickers I-286-S, Cincinnati Milacron P-68, P-69, P-70.

TYPICAL PROPERTIES	TEST METHOD	P-MPH 32 AW	P-MPH 46 AW	P-MPH 68 AW	P-MPH 100 AW	P-MPH 150 AW	P-MPH 220 AW	P-MPH 320 AW
Viscosity @ 40°C, cSt	ASTM D445	32	46	68	100	150	220	320
Viscosity @ 100°C, cSt	ASTM D445	5.4	6.9	8.9	11.4	14.6	18.3	24.0
Viscosity Index	ASTM D2270	100	100	100	98	95	95	95
Gravity, °API		31.5	31.5	28.5	30.0	27.4	27.0	26.5
Flash Point, °C/°F	ASTM D92	207/405	210/410	210/410	213/415	232/450	244/471	243/470
Pour Point, °C/°F	ASTM D97	-18/0	-18/0	-15/5	-12/10	-9/15	-7/20	-4/25
Oxidation Stability, TOST	ASTM D943	4000	4000	4000	---	---	---	---
Demulsibility, 54.5°C, Min		20	20	20	20	20	20	20
FZG Pass, Load Test		10	10	10	10	10	10	10
Color	ASTM D1500	1.0	1.5	1.5	3.0	3.5	4.0	5.0
Zinc, % wt		.026	.026	.026	.026	.026	.026	.026
Cooper Corrosion		1A	1A	1A	1A	1A	1A	1A
Rust Prevention	ASTM D665	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Lbs./Gal		7.26	7.34	7.42	7.34	7.42	7.42	7.51
Specific Gravity		0.87	0.88	0.89	0.88	0.89	0.89	0.90

ULTRACHEM AWF

MULTI-GRADE HYDRAULIC OIL

Applications:
Ultrachem AWF is a multi-grade anti-wear hydraulic fluid. It has been designed for year-round service in mobile equipment operating at very low or widely varying ambient temperatures. It is recommended for use in mobile hydraulic equipment, including cherry pickers, backhoes, shovels, hydraulic cranes and extension ladders. It can be used in stationary hydraulic equipment operating at abnormally low temperatures. This product provides excellent lubricity and wear protection, oxidation and corrosion protection and detergency for system cleanliness. Meets or exceeds leading pump and system manufacturer's specifications such as Delaval, Denison, Dynex, Moog, Racine, Rexroth, Sundstrand, Towler, Vickers and U.S. Steel.

Performance Benefits:
- Wide temperature operating range
- Anti-wear protection
- Detergency for system cleanliness
- Excellent oxidation and corrosion protection

TYPICAL PROPERTIES	TEST METHOD	Ultrachem AWF
SAE Grade		5W-40
Viscosity @ 40°C,cSt	ASTM D445	47
Viscosity @ 100°C,cSt	ASTM D445	7.8
Viscosity Index	ASTM D2270	135
Flash Point, °C/°F	ASTM D92	215/420
Pour Point, °C/°F	ASTM D97	-42/-45
Copper Corrosion	ASTM D130	1B
Foaming Sequences I, II, III	D892	Pass
Acid #	D664	0.80
Dielectric Strength	D877	35+
Zinc, % wt.	---	0.04

CHEMLUBE® AW SERIES

PAO-BASED HYDRAULIC FLUIDS

Applications:

The Chemlube AW Series Oils are full synthetics and have been formulated from premium polyalphaolefins (PAO) base fluids for use in a wide variety of industrial and mobile hydraulic systems operating at high pressure and under extreme temperature conditions. The Chemlube AW Series have superior anti-wear and rust and oxidation inhibitors to provide excellent wear protection for hydraulic pumps and motors. They have outstanding oxidation resistance and thermal stability to help minimize deposit formation and provide long service life, and protects against rust and corrosion. This series also has excellent demulsibility in the presence of water and provides foam resistance. The Chemlube AW Series are particularly recommended for use in applications where operating conditions may be unfavorable or too severe for conventional mineral oil-based hydraulic oils.

Typical Industrial Applications:

- Hydraulic Systems Operating Under Extreme-Temperature Conditions
- Hydraulic Systems on Mobile Equipment, i.e. Dump Trucks, Motor Graders, Bulldozers, and Forklifts
- Hydraulic Presses, Shears, Jacks and Punches in Machine Shops
- Automated Machine Tools
- Chain Drives
- Plain and Rolling-Element Bearings used in Electric Motors.
- Service Station Lifts
- Electrical Service Repair Trucks
- Compressors
- Vacuum Pumps
- Blowers

Performance Benefits:

- Wide temperature range
- Low pour points
- High flash points
- Increased thermal & oxidative stability
- Exceeds the performance requirements of the leading OEM hydraulic pump manufacturers

TYPICAL PROPERTIES	TEST METHOD	Chemlube AW 32	Chemlube AW 46	Chemlube AW 68	Chemlube AW 100
ISO Grade	ASTM D2422	32	46	68	100
Viscosity @ 40°C,cSt	ASTM D445	31.1	47.3	68.6	95.2
Viscosity @ 100°C,cSt	ASTM D445	5.75	7.86	10.1	12.85
Viscosity Index	ASTM D2270	127	136	132	133
Flash Point, °C/°F	ASTM D92	240/464	240/464	238/460	260/500
Pour Point, °C/°F	ASTM D97	-48/-55	-48/-55	-48/-55	-45/-49
Copper Corrosion	ASTM D130	1B	1B	1B	1B
Rust Prevention	ASTM D665	Pass	Pass	Pass	Pass
Evaporation, %	ASTM D972	<1%	<1%	<1%	<1%
Specific Gravity	ASTM D1298	0.86	0.86	0.86	0.87

CHEMLUBE® BC 30

SYNTHETIC OVEN CHAIN LUBRICANT

Applications:
Chemlube BC 30 is a synthetic polyolester (POE)-based lubricant designed for chains in oven environments exceeding 500ºF. The high flash POE and the superior additive technology allows Chemlube BC 30 to control carbon build-up. Chemlube BC 30 provides excellent anti wear and thermal stability.

Typical Industrial Applications:
- Tunnel Ovens
- Lap Ovens
- Tray Ovens
- High Speed Can Lines
- Lithographic Chains
- Oven Slides & Gears
- Conveyor Roller Ball Bearing Chains

Performance Benefits:
- Superior resistance to wear
- Excellent high temperature corrosion-oxidation stability
- Reduced maintenance cost & cleanliness
- Meets the USDA H-2 requirements

TYPICAL PROPERTIES	TEST METHOD	Chemlube BC 30
ISO Grade	ASTM D2422	100
Viscosity @ 40°C,cSt	ASTM D445	103.7
Viscosity @ 100°C,cSt	ASTM D445	12.9
Viscosity Index	ASTM D2270	121
Flash Point, °C/°F	ASTM D92	300/572
Pour Point, °C/°F	ASTM D97	-42/-44
Fire Point, °C	ASTM D92	340
Rust Prevention	ASTM D665A ASTM D665B	Pass Pass
Evaporation, %	ASTM D972	2
Total Acid Number, mg KOH/g	ASTM D664	0.2
Four Ball Wear, 40 Kg., 1200rpm, 75°C, 1 hr., Scar Diameter, mm	ASTM D4172	0.36
Specific Gravity	ASTM D1298	0.974

CHEMLUBE® PC 100

SYNTHETIC PROOFER CHAIN LUBRICANT

Applications:
Chemlube PC 100 is a premium synthetic ester-based chain lubricant designed for high humidity environments. This premium chain lubricant will not emulsify with water and provides excellent rust protection. Chemlube PC 100 will reduce carbon, gum or sludge deposits and has excellent metal wear resistance.

Typical Industrial Applications:
- Proofer Boxes
- Conveyor Roller Ball Bearings
- Pin and Roller Chains
- Slides
- Gears
- Food Processing (H-2)

Performance Benefits:
- Superior resistance to metal wear
- High degree of high temperature corrosion-oxidation stability
- Reduced maintenance cost & cleanliness
- Natural detergency eliminates deposits
- Superior lubricity provides an end to chain kinking or shortening
- Meets the USDA H-2 requirements

TYPICAL PROPERTIES	TEST METHOD	Chemlube PC 100
ISO Grade	ASTM D2422	100
SAE Grade	SAE J-300	30
Viscosity @ 40°C,cSt	ASTM D445	99
Viscosity @ 100°C,cSt	ASTM D445	10.1
Viscosity Index	ASTM D2270	80
Flash Point, °C/°F	ASTM D92	263/505
Pour Point, °C/°F	ASTM D97	-34/-29
Fire Point, °C/°F	ASTM D92	285/545
Evaporation, %	ASTM D972	0.2
Rust Test – Distilled Water – Sea Water	ASTM D665B	Pass Pass
Four Ball Wear, 40 Kg., 1200rpm, 75°C, 1 hr., Scar Diameter, mm	ASTM D4172	0.40
Specific Gravity	ASTM D1298	0.96

CHEMLUBE® FB

SYNTHETIC HIGH TEMPERATURE CHAIN LUBRICANT

Applications:
Chemlube FB is a premium synthetic chain lubricant designed for use in high temperature applications like double-belt presses for the continuous production of fiber and particleboard or laminate in Siempelkamp ContiRoll®, Küsters® Presses, Dieffenbacher Conti Presses, and other similar double presses. Chemlube FB gives extended life in the temperature range to ~500ºF (260ºC) and will reduce carbon, gum or sludge deposits. This chain oil has a low evaporation rate making it last longer and has outstanding wetting and spreading properties. With these properties, Chemlube FB yields savings in maintenance dollars.

Application Tips: Lubrication points include steel belts, carpets of calibrated rollers, heating platens; roller bar chains; contact pressure and aligning chains; and beds of roller chains. In these applications it is necessary to cover the belts, chains, roller bars and slide rails with the proper film of oil.

Typical Industrial Applications:
- Single & Double Presses
- Tunnel / Lap / Tray Ovens
- High Speed Can Lines
- Lithographic Chains
- Oven Slides & Gears
- Conveyor Roller Ball Bearing Chains
- Fiberglass Processing
- Wood Processing
- Coating Ovens Automotive Industry

Performance Benefits:
- Superior resistance to wear
- Excellent high temperature corrosion-oxidation stability
- Reduced maintenance cost & cleanliness

TYPICAL PROPERTIES	TEST METHOD	Chemlube FB
Viscosity @ 40°C,cSt	ASTM D2161	265
Viscosity @ 100°C,cSt	ASTM D2161	27
Viscosity Index	ASTM D2270	131
Flash Point, °C/°F	ASTM D92	280/535
Pour Point, °C/°F	ASTM D97	-30/-22
Copper Corrosion	ASTM D130	1b
Rust Prevention	ASTM D665	Pass
Lbs./Gal.	---	7.60
Specific Gravity	ASTM D1298	0.91

CHEMLUBE® 222

SYNTHETIC HIGH TEMPERATURE CHAIN LUBRICANT

Applications:
Chemlube 222 is a 100% synthetic chain lubricant designed for use in high temperature applications like conveyors and lateral chain belts. Chemlube 222 gives extended life in the temperature range to ~500ºF (260ºC) and will reduce carbon, gum or sludge deposits. This chain oil has a low evaporation rate making it last longer and has outstanding wetting and spreading properties. With these properties, Chemlube 222 yields savings in maintenance dollars.

Application Tips: Lubrication points include steel belts, carpets of calibrated rollers, heating platens; roller bar chains; contact pressure and aligning chains; and beds of roller chains. In these applications it is necessary to cover the belts, chains, roller bars and slide rails with the proper film of oil. No lacquer or varnish should form when applied. Note that in cases of excessive heat some residues may form after evaporation.

Typical Industrial Applications:
- Conveyors
- Lateral Chain Belts
- Tunnel / Lap / Tray Ovens
- High Speed Can Lines
- Lithographic Chains
- Oven Slides & Gears
- Conveyor Roller Ball Bearing Chains
- Fiberglass Processing
- Wood Processing
- Coating Ovens Automotive Industry
- Centralized lubrication systems, also those equipped with copper lines

Performance Benefits:
- Superior resistance to wear
- Highest degree of high temperature corrosion-oxidation stability
- Reduced maintenance cost & cleanliness

TYPICAL PROPERTIES	TEST METHOD	Chemlube 222
Viscosity @ 40°C,cSt	ASTM D445	250
Viscosity @ 100°C,cSt	ASTM D445	22.5
Viscosity Index	ASTM D2270	109
Flash Point, °C/°F	ASTM D92	271/520
Pour Point, °C/°F	ASTM D97	-34/-30
Copper Corrosion	ASTM D130	1b
Rust Prevention	ASTM D665	Pass
Lbs./Gal.	---	7.67
Specific Gravity	ASTM D1298	0.92

CHEMLUBE® 224

SYNTHETIC HIGH TEMPERATURE CHAIN LUBRICANT

Applications:
Chemlube 224 is a premium synthetic diester-based chain lubricant designed for use in high temperature applications and harsh environmental conditions. Chemlube 224 gives extended life in the temperature range of -10ºF to 425ºF and reduce form carbon, gum or sludge deposits. This chain oil has a low evaporation rate making it last longer and has outstanding wetting and spreading properties. With these properties, Chemlube 224 yields savings in maintenance dollars.

Typical Industrial Applications:
- Conveyors
- Lateral Chain Belts
- Tunnel / Lap / Tray Ovens
- Cam
- Bearings
- High Speed Can Lines
- Oven Slides & Gears
- Conveyor Roller Ball Bearing Chains
- Wood Processing
- Coating Ovens Automotive Industry

Performance Benefits:
- Superior resistance to wear
- Highest degree of high temperature corrosion-oxidation stability
- Reduced maintenance cost & cleanliness
- Non-slinging

TYPICAL PROPERTIES	TEST METHOD	Chemlube 224
Viscosity @ 40°C,cSt	ASTM D445	204.1
Viscosity @ 100°C,cSt	ASTM D445	27.4
Viscosity Index	ASTM D2270	171
Flash Point, °C/°F	ASTM D92	240/465
Pour Point, °C/°F	ASTM D97	-29/-20
Auto Ignition, °C/°F	ASTM E659	407/765
Lbs./Gal.	---	7.96
Specific Gravity	ASTM D1298	0.96

CHEMLUBE® 225

SYNTHETIC HIGH TEMPERATURE CHAIN LUBRICANT

Applications:
Chemlube 225 is a premium synthetic diester-based chain lubricant designed for use in high temperature applications and harsh environmental conditions. This premium chain oil contains soluble organic compounds for added wear protection. Chemlube 225 gives extended life in the temperature range of -10ºF to 450ºF and will reduce carbon, gum or sludge deposits. It also has a low evaporation rate making it last longer and has outstanding wetting and spreading properties. With these properties, Chemlube 225 yields savings in maintenance dollars.

Typical Industrial Applications:
- Textile Tenter Frames
- Conveyors
- Lateral Chain Belts
- Tunnel / Lap / Tray Ovens
- Cam
- Bearings
- High Speed Can Lines
- Oven Slides & Gears
- Conveyor Roller Ball Bearing Chains
- Wood Processing
- Coating Ovens Automotive Industry

Performance Benefits:
- Superior resistance to wear
- Highest degree of high temperature corrosion-oxidation stability
- Reduced maintenance cost & cleanliness
- Non-slinging

TYPICAL PROPERTIES	TEST METHOD	Chemlube 225
Viscosity @ 40°C,cSt	ASTM D445	185.1
Viscosity @ 100°C,cSt	ASTM D445	30.4
Viscosity Index	ASTM D2270	207
Flash Point, °C/°F	ASTM D92	243/470
Pour Point, °C/°F	ASTM D97	-28/-20
Fire Point, °C/°F	ASTM D92	285/545
Auto Ignition, °C/°F	ASTM E659	407/765
Lbs./Gal.	---	7.60
Specific Gravity	ASTM D1298	0.91

CHEMLUBE® 226

SYNTHETIC HIGH TEMPERATURE CHAIN LUBRICANT

Applications:
Chemlube 226 is a premium synthetic fluid designed for use as a high temperature, polymer-free chain lubricant with an organic molybdenum compound to give superior wear protection. This premium chain oil has the advantage of being easily applied through a mister or atomizer type lubricators due to its viscosity grade. Chemlube 226 gives extended life in the temperature range of -20ºF to 500ºF and will reduce carbon, gum or sludge deposits. It also has a low evaporation rate making it last longer and has outstanding wetting and spreading properties. With these properties, Chemlube 226 yields savings in maintenance dollars.

Typical Industrial Applications:
- Conveyors
- Lateral Chain Belts
- Tunnel / Lap / Tray Ovens
- Cam
- Bearings
- High Speed Can Lines
- Lithographic Chains
- Oven Slides & Gears
- Conveyor Roller Ball Bearing Chains
- Gypsum Board Processing
- Fiberglass Processing
- Wood Processing
- Coating Ovens Automotive Industry

Performance Benefits:
- Superior resistance to wear
- High degree of high temperature corrosion-oxidation stability
- Reduced maintenance cost & cleanliness
- Natural detergency eliminates deposits
- Superior lubricity provides an end to chain kinking or shortening

TYPICAL PROPERTIES	TEST METHOD	Chemlube 226
ISO Grade	ASTM D2422	46
SAE Grade	SAE J-300	20
Viscosity @ 40°C,cSt	ASTM D445	41.3
Viscosity @ 100°C,cSt	ASTM D445	7.8
Viscosity Index	ASTM D2270	163
Flash Point, °C/°F	ASTM D92	260/500
Pour Point, °C/°F	ASTM D97	-46/-50
Fire Point, °C/°F	ASTM D92	296/565
Auto Ignition Temp., °C/°F	ASTM D2155	418/785
Lbs./Gal.	---	7.54
Specific Gravity	ASTM D1298	0.90

CHEMLUBE® 275

SYNTHETIC HIGH TEMPERATURE CHAIN LUBRICANT

Applications:
Chemlube 275 is a synthetic diester-based chain lubricant designed for use in high temperature applications and harsh environmental conditions. This premium chain oil contains soluble organic compounds for added wear protection. Chemlube 275 gives extended life in the temperature range of -10ºF to 450ºF and will reduce carbon, gum or sludge deposits. It also has a low evaporation rate making it last longer and has outstanding wetting and spreading properties. With these properties, Chemlube 275 yields savings in maintenance dollars.

Typical Industrial Applications:
- Textile Tenter Frames
- Conveyors
- Lateral Chain Belts
- Tunnel / Lap / Tray Ovens
- Cam
- Bearings
- High Speed Can Lines
- Oven Slides & Gears
- Conveyor Roller Ball Bearing Chains
- Wood Processing
- Coating Ovens Automotive Industry

Performance Benefits:
- Superior resistance to wear
- Highest degree of high temperature corrosion-oxidation stability
- Reduced maintenance cost & cleanliness
- Non-slinging

TYPICAL PROPERTIES	TEST METHOD	Chemlube 275
ISO Grade	ASTM D2422	320
Viscosity @ 40°C,cSt	ASTM D445	320
Viscosity @ 100°C,cSt	ASTM D445	22.5
Viscosity Index	ASTM D2270	85
Flash Point, °C/°F	ASTM D92	274/525
Pour Point, °C/°F	ASTM D97	-28/-20
Fire Point, °C/°F	ASTM D92	282/540
Specific Gravity	ASTM D1298	0.94

CHEMLUBE® 801

SYNTHETIC HIGH TEMPERATURE CHAIN LUBRICANT

Applications:
Chemlube 801 is a synthetic fluid designed with a high viscosity for high temperature applications. This premium chain oil is non-carbonizing and is an ashless lubricant. Chemlube 801 will reduce carbon, gum or sludge deposits. It also has a low evaporation rate making it last longer and has outstanding wetting and spreading properties. With these properties, Chemlube 801 yields savings in maintenance dollars.

Typical Industrial Applications:
- Conveyors
- Lateral Chain Belts
- Tunnel / Lap / Tray Ovens
- Cam
- Bearings
- High Speed Can Lines
- Lithographic Chains
- Oven Slides & Gears
- Conveyor Roller Ball Bearing Chains
- Gypsum Board Processing
- Fiberglass Processing
- Wood Processing
- Coating Ovens Automotive Industry

Performance Benefits:
- Superior resistance to wear
- High degree of high temperature corrosion-oxidation stability
- Reduced maintenance cost & cleanliness
- Natural detergency eliminates deposits
- Superior lubricity provides an end to chain kinking or shortening

TYPICAL PROPERTIES	TEST METHOD	Chemlube 801
ISO Grade	ASTM D2422	150
Viscosity @ 40°C,cSt	ASTM D445	145.9
Viscosity @ 100°C,cSt	ASTM D445	13.6
Viscosity Index	ASTM D2270	87
Flash Point, °C/°F	ASTM D92	279/535
Pour Point, °C/°F	ASTM D97	-34/-30
Evaporation, %	ASTM D972	<0.5
Water Solubility	---	Insoluble
Lbs./Gal.	---	8.08
Specific Gravity	ASTM D1298	0.970

CHEMLUBE® 5071 and 5073

SYNTHETIC HIGH TEMPERATURE CHAIN LUBRICANTS

Applications:

Chemlube 5071 and 5073 have been designed for use in high temperature chain applications. They are premium polymer-free chain lubricants with an organic molybdenum compound to give superior wear protection. They are non-carbonizing and ashless lubricants. Chemlube 5071 and 5073 will reduce carbon, gum or sludge deposits. They have a low evaporation rate making them last longer and have outstanding wetting and spreading properties. With these properties, Chemlube 5071 and 5073 yield savings in maintenance dollars.

Typical Industrial Applications:

- Conveyors
- Lateral Chain Belts
- Tunnel / Lap / Tray Ovens
- Cam
- Bearings
- High Speed Can Lines
- Lithographic Chains
- Oven Slides & Gears
- Conveyor Roller Ball Bearing Chains
- Gypsum Board Processing
- Fiberglass Processing
- Wood Processing
- Coating Ovens Automotive Industry

Performance Benefits:

- Superior resistance to wear
- High degree of high temperature corrosion-oxidation stability
- Reduced maintenance cost & cleanliness
- Natural detergency eliminates deposits
- Superior lubricity provides an end to chain kinking or shortening

TYPICAL PROPERTIES	TEST METHOD	Chemlube 5071	Chemlube 5073
ISO Grade	ASTM D2422	150/220	320
SAE Grade	SAE J-300	40/50	60
Viscosity @ 40°C,cSt	ASTM D445	154	281.7
Viscosity @ 100°C,cSt	ASTM D445	20	27.9
Viscosity Index	ASTM D2270	150	132
Flash Point, °C/°F	ASTM D92	227/440	227/440
Pour Point, °C/°F	ASTM D97	-23/-10	-23/-10
Lbs./Gal.	---	7.4	7.3
Specific Gravity	ASTM D1298	0.894	0.878

CHEMLUBE® 5083 & 5093

SYNTHETIC HIGH TEMPERATURE CHAIN LUBRICANTS

Applications:
Chemlube 5083 and 5093 have been designed with unique high flash point premium polyolester (POE)-based fluids unavailable elsewhere. These fully synthetic lubricants have a wide temperature range and virtually eliminate carbon deposits with its natural cleaning and detergency. A proprietary blend of antioxidants, anti-wear additives and corrosion inhibitor enhance the performance of these chain lubricants. They have low volatility, low smoking tendency and high flash point. These high temperature chain lubricants are resistant to sludging and gumming. Chemlube 5083 and 5093 are available with and without soluble Moly for added performance.

Typical Industrial Applications:
- Tunnel / Lap / Tray Ovens
- High Speed Can Lines
- Conveyors
- Lithographic Chains
- Oven Slides & Gears
- Lateral Chain Belts
- Fiberboard & Fiberglass High Temperature Chains
- Cam
- Bearings
- Conveyor Roller Ball Bearing Chains
- Wood Processing
- Coating Ovens Automotive Industry
- Food Processing (H-2)

Performance Benefits:
- Outstanding load carrying and wear prevention properties
- Excellent high temperature corrosion-oxidation stability
- High flash point
- Natural cleaning and detergency
- Virtually eliminates carbon deposits
- Wide temperature range
- Meets the USDA H-2 requirements

TYPICAL PROPERTIES	TEST METHOD	Chemlube 5083	Chemlube 5093
ISO Grade	ASTM D2422	150	220
SAE Grade	SAE J-300	40	50
Viscosity @ 40°C,cSt	ASTM D445	122.1	223
Viscosity @ 100°C,cSt	ASTM D445	13.8	19.0
Viscosity Index	ASTM D2270	110	95
Flash Point, °C/°F	ASTM D92	299/571	307/585
Pour Point, °C/°F	ASTM D97	-34/-30	-35/-31
Auto Ignition Temperature	ASTM D2155	870	---
Lbs./Gal.	---	8.09	8.12

CHAIN PRESERVATION OIL

MINERAL-BASED CHAIN LUBRICANT FOR CONVEYORS & DRIVES

Applications:
Ultrachem Chain Preservation Oil is a special lubricant blend which is designed to preserve conveyor and drive chains from rusting while in transit to the customer site and in warehouse storage. This mineral blend includes penetrating compounds to draw lubricant into the pin and bushing area and a viscosity grade and a unique additive package to provide adherence to the metal surfaces. This preservative offers good anti-wear and corrosion inhibition properties and is an excellent coating for initial start-up lubrication in the field. Ultrachem Chain Preservation Oil is compatible with typical mineral based conveyor lubes and most synthetic based fluids.

Typical Industrial Applications:
- Conveyor chains
- Drive chains

Performance Benefits:
- Prevents rusting during transportation and storage
- Provides start-up lubrication and wear protection
- Provides compatibility with typical conveyor/chain drive lubricants
- Offers easy application by vat dipping or drip brushing

TYPICAL PROPERTIES	TEST METHOD	Ultrachem CPO
ISO Grade	ASTM D2422	460
Viscosity @ 40°C,cSt	ASTM D445	437
Viscosity @ 100°C,cSt	ASTM D445	30
Viscosity Index	ASTM D2270	98
Flash Point, °C/°F	ASTM D92	271/520
Pour Point, °C/°F	ASTM D97	-10/15
Copper Corrosion	ASTM D130	1a
Rust – Sea Water	ASTM D665	Pass
Foaming Sequences I, II, III	ASTM D892	Pass
Specific Gravity	ASTM D1298	0.89

ULTRACHEM SYNTHETIC HI-TEMPERATURE CHAIN LUBRICANTS

Chain Preservation Oil – 437 cSt @ 40°C. Chain Preservation Oil is a mineral-based lubricant to preserve conveyor and drive chains from rusting while in transit. This chain oil offers anti-wear protection and can be used in start-ups.

Chemlube 215 – 36.3 cSt @ 40°C. Chemlube 215 has been proven as an effective chain lubricant for textile tenter frames where a light penetrating oil film resistant to high temperature is desired.

Chemlube 226 – 41.3 cSt @ 40°C. A thinner version of 225 with no tack for higher temperatures. Excellent for application through a mister or atomizer type lubricator.

Chemlube PC 100 – 99 cSt @ 40°C. Chemlube PC 100 is a USDA H-2 grade diester designed for use in hot oven environments in bakeries where high humidity is present, such as Proofer Boxes.

Chemlube 225 – 185.1 cSt @ 40°C. The original tacky heavy chain lubricant with a diester base fluid and a high temperature organo-moly extreme pressure anti-wear additive. Use with a drip or hand applied application system.

Chemlube 224 – 204.1 cSt @ 40°C. This is similar to Chemlube 225 for those who do not want an organo-moly extreme pressure anti-wear additive.

Chemlube 275 – 320 cSt @ 40°C. A diester-based chain lubricant for high temperatures and harsh environmental conditions. This oil contains soluble organic compounds for added wear protection.

Chemlube 801 – 145.9 cSt @ 40°C. An economical high temp chain oil alternate to the popular Chemlube® 5083. Unique chemistry offers high temperature protection.

Chemlube 222 – 250 cSt @ 40°C. Chemlube 222 is a fully synthetic chain lubricant for use in high temperature applications like conveyors and lateral chain belts.

Chemlube FB – 265 cSt @ 40°C. Chemlube FB is a fully synthetic chain lubricant designed for use in high temperature applications like double-belt presses for the production of fiber and particle board or laminates.

Chemlube BC 30 – 103.7 cSt @ 40°C. Chemlube BC 30 is a USDA H-2 grade ester designed for use in baking ovens on conveyor roller ball bearing chains, tunnel lap, tray ovens, high speed can lines, slides & gears near 500°F.

Chemlube 5083 & 5093 – 122.1/223 cSt @ 40°C. These are simply our best high temp chain lubes developed to date with a unique chemistry that requires no polymer or viscosity improver (V.I.), which can compromise the high temperature performance.

Chemlube 5071 & 5073 – 154/281.7 cSt @ 40°C. Chemlube 5071 is similar to 225 in viscosity. These chain oils have no tack and utilize a different base fluid designed for higher temperatures.

Omnilube PC 100 FG – 100 cSt @ 40°C. This H-1 food grade USP Grade Mineral Oil-based chain oil is designed to work in high humidity environments such as proofers.

Omnilube FGC 3100 –100 cSt @ 40ºC. This H-1 food grade PAO-based chain oil is formulated with a tackifier to protect a wide variety of equipment as well as chains.

Omnilube FGC 4220 – 220 cSt @ 40°C. This H-1 food grade ester-based chain oil formulation provides a high flash point and low volatility for high temperature applications.

Omnilube PG 130 & 220 FG – 130/224 cSt @ 40ºC. This H-1 food grade polyalkylene glycol based chain oil is designed for use on chains where higher temperatures are expected. It will not leave deposits associated with some other oils.

CHEMLUBE® SYNTHETIC HI-TEMPERATURE CHAIN LUBRICANTS

	BASE FLUID	VISCOSITY cSt @ 40°C	FLASH POINT °F	POUR POINT °F	GRADE	SAE	TACK
Chain Preservation Oil	Mineral Blend	437	520	15	460	140	No
Chemlube 215	Diester	36.3	486	-54	32	10	No
Chemlube 226	Diester	41.3	500	-50	46	20	No
Chemlube PC 100	Diester	99	505	-29	100	30	No
Chemlube 225	Diester	185.1	470	-20	150/220	40/50	Non-Slinging
Chemlube 224	Diester	204.1	465	-20	150/220	40/50	Non-Slinging
Chemlube 275	Diester	320	525	-20	320	6	Non-Slinging
Chemlube 801	Triester	145.9	535	-30	150	40	No
Chemlube 222	Triester	250	520	-30	220/320	50/60	No
Chemlube FB	Ester	265	535	-22	220/320	50/60	No
Chemlube BC 30	Ester	103.7	572	-44	100	30	No
Chemlube 5083	Polyol Ester	122.1	571	-30	150	40	No
Chemlube 5093	Polyol Ester	223	585	-36	220	50	No
Chemlube 5071	Proprietary Synthetic	154	440	-10	150/220	40/50	No
Chemlube 5073	Proprietary Synthetic	281.7	440	-10	320	60	No
Food Grade Products							
Omnilube PC 100 FG	Mineral Oil	100	370	5	100	30	Yes
Omnilube FGC 3100	PAO	100	460	-35	100	30	Yes
Omnilube FGC 4220	Esters	220	489	-31	220	50	No
Omnilube PG 130 FG	Polyalkylene glycol	130	507	-38	130	30/40	No
Omnilube PG 220 FG	Polyalkylene glycol	224	507	-20	220	50	No

We recommend that all chains be cleaned prior to the introduction of any synthetic even though all of our fully synthetic chain lubes provide natural cleaning and detergency.

OMNILUBE® FGC 4220 & 4220 AW

SYNTHETIC FOOD GRADE OVEN CHAIN LUBRICANTS

Applications:
Omnilube FGC 4220 is a fully synthetic chain lubricant formulated from ultra premium ester-based oils. These NSF approved premium lubricants are designed for use on chains where excellent thermal stability and reduced deposits formation is required. Omnilube FGC 4220 proprietary formulation provides a combination of high flash point and low volatility for high temperature applications while still providing performance at low temperatures. This oven chain lubricant provides better load and wear properties than food grade H-1 white petroleum oils or PAOs.

For extreme high temperature applications, Omnilube FGC 4220 AW lubricant was designed with a white, Boron-containing high-temperature stable wear protection additive.

Typical Industrial Applications:
- Oven Chains
- Gear Sets
- Bearings

Performance Benefits:
- Excellent oxidative and thermal stability
- Reduced sludge and deposit formation
- Good water and rust resistance
- High flash point
- Complies with FDA 21 CFR 178.3570 H-1
- Omnilube FGC 4220 AW: Containers should be mixed before opening or using to assure a well mixed product.

TYPICAL PROPERTIES	TEST METHOD	Omnilube FGC 4200	Omnilube FGC 4200 AW
Viscosity @ 40°C,cSt	ASTM D445	223	230
Viscosity @ 100°C,cSt	ASTM D445	26.9	26.3
Viscosity Index	ASTM D2270	154	145
Flash Point, °C/°F	ASTM D92	253/489	270/519
Pour Point, °C/°F	ASTM D97	-35/-31	-23/-10
Specific Gravity	ASTM D1298	0.98 - 1.0	0.99 - 1.0

OMNILUBE® WO 12, 22, 32, 46, 68, 100, and 150

FOOD GRADE HYDRAULIC FLUIDS

Applications:

The Omnilube WO series is a line of food grade hydraulic fluids that are formulated with USP grade white oils. These NSF approved food grade hydraulic fluids are engineered to meet the demanding requirements of severe hydraulic systems using high pressure and high output pumps.

Typical Industrial Applications:

- Hydraulic Systems
- Hydraulic Systems containing gears and bearings
- Gears
- Bearings
- Compressors
- Vacuum Pumps
- Slide Ways & Chains
- Wipe Down Oil
- Air Lines
- Meat Processing Plants
- Poultry Processing Plants
- Food Processing (H-1)

Performance Benefits:

- Excellent compatibility with elastomers, seals, plastics, and paints
- Complies with FDA 21 CFR 178.3570 H-1

TYPICAL PROPERTIES	TEST METHOD	Omnilube WO 12	Omnilube WO 22	Omnilube WO 32	Omnilube WO 46	Omnilube WO 68	Omnilube WO 100	Omnilube WO 150
ISO Grade	ASTM D2422	10	22	32	46	68	100	150
SAE Grade	SAE J-300	---	---	10W	20	20	30	40
Viscosity @ 40°C,cSt	ASTM D445	12.0	20.8	34.0	47.3	71.0	103	154
Viscosity @ 100°C,cSt	ASTM D445	3.0	4.2	5.8	7.2	9.2	11.8	14.7
Viscosity Index	ASTM D2270	104	106	112	112	106	104	93
Flash Point, °C/°F	ASTM D92	180/356	210/410	215/420	232/450	260/500	263/505	263/505
Pour Point, °C/°F	ASTM D97	-21/-6	-18/0	-18/0	-16/3	-16/3	-12/10	-12/10
Copper Corrosion	ASTM D130	1a	1a	1a	1a	1a	1a	1a
Evaporation Loss, %	ASTM D972	1.4	1.4	1.4	1.2	1.0	0.9	0.9
Specific Gravity	ASTM D1298	0.83	0.87	0.86	0.88	0.87	0.88	0.89

OMNILUBE® WO 80, 90, 85W140, 140, and 250

FOOD GRADE GEAR LUBRICANTS

Applications:
The Omnilube WO series is a line of food grade gear lubricants that are formulated with USP grade white oils. These NSF approved food grade gear lubricants are engineered to provide superior lubrication protection where food contact may occur.

Typical Industrial Applications:
- Bearings
- Gear Sets
- Pumps
- Chain Applications
- Meat Processing Plants
- Poultry Processing Plants
- Food Processing (H-1)

Performance Benefits:
- Made from USP grade white oils
- Excellent compatibility with elastomers, seals, plastics, and paints
- Complies with FDA 21 CFR 178.3570 H-1

TYPICAL PROPERTIES	TEST METHOD	Omnilube WO 80	Omnilube WO 90	Omnilube WO 85W140	Omnilube WO 140	Omnilube WO 250
ISO Grade	ASTM D2422	68/100	150/220	320	460	680
SAE Grade	SAE J-300	80	90	85W-140	140	250
Viscosity @ 40°C,cSt	ASTM D445	77	190	313.4	452.6	640
Viscosity @ 100°C,cSt	ASTM D445	9.6	18.3	24.9	33.7	43.0
Viscosity Index	ASTM D2270	100	97	102	110	111
Flash Point, °C/°F	ASTM D92	220/428	190/374	240/464	190/374	230/446
Pour Point, °C/°F	ASTM D97	-12/10	-10/14	-12/10	-18/0	-6/21
Copper Corrosion	ASTM D130	1a	1a	1a	1a	1a
Specific Gravity	ASTM D1298	0.88	0.88	0.88	0.89	0.90

OMNILUBE® 520, 546, 568, 5131, and 640

FOOD GRADE PAO-BASED COMPRESSOR LUBRICANTS

Applications:

Omnilube 520, 546, 568, 5131, and 640 are synthetic food grade compressor oils that are formulated with the highest quality polyalphaolefin (PAO) base oils.

Omnilube 5131 is suitable for use as an impregnating oil for powder metal sleeve bearings in small electric motors where food grade approvals are necessary. Omnilube 520, 546, and 568 are designed for rotary screw compressors and offer a service life of 2,000 to 4,000 hours under good operating conditions. Omnilube 5131 and 640 are designed for reciprocating compressors.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Vacuum Pumps
- Meat & Poultry Processing Plants
- Food Processing Plants
- Reciprocating Compressors
- Centrifugal Compressors
- Omnilube 5131: Powder Metal Sleeve Bearings in Food Grade Applications, i.e. Food Processors, Blenders.

Performance Benefits:

- Outstanding thermal oxidative stability
- Very low pour point
- Wide operating temperature range
- Non-detergent
- Extended drain intervals / reduced oil disposal
- Excellent vapor pressure characteristics
- Complies with FDA 21 CFR 178.3570 H-1
- Approved for use in Canada

TYPICAL PROPERTIES	TEST METHOD	Omnilube 520	Omnilube 546	Omnilube 568	Omnilube 5131	Omnilube 640
ISO Grade	ASTM D2422	32	46	68	100	150
SAE Grade	SAE J-300	10	20	20	30	40
Viscosity @ 40°C,cSt	ASTM D445	29.6	45.2	69.5	108	138
Viscosity @ 100°C,cSt	ASTM D445	6.3	7.8	9.2	10.5	16.0
Viscosity Index	ASTM D2270	168	143	145	145	145
Flash Point, °C/°F	ASTM D92	240/404	260/500	260/500	260/500	260/500
Pour Point, °C/°F	ASTM D97	-68/-90	-48/-54	-48/-54	-42/-44	-37/-35
Copper Corrosion	ASTM D130	1b	1b	1b	1b	1b
Foaming Sequences I, II, III	ASTM D892	Nil	Nil	Nil	Nil	Nil
Demulsibility	ASTM D1401	Excellent	Excellent	Excellent	Excellent	Excellent
Evaporation, %	ASTM D972	0.07	1.0	1.0	0.90	0.90
Specific Gravity	ASTM D1298	0.83	0.84	0.84	0.84	0.84

OMNILUBE® 32/46, 68, and 455

LONG-LIFE FOOD GRADE COMPRESSOR OILS

Applications:

Omnilube 32/46, 68, and 455 are fully synthetic compressor oils formulated from the highest quality polyalphaolefin (PAO) base oils with a superior proprietary additive package to achieve long life. These long life compressor lubricants provide significantly improved wear, oxidation and lubricity over the currently available H-1 food grade synthetic oils allowing the service life to increase by 50% to 100%. Dependent upon the rotary screw design Omnilube 32/46 and 68 are able to give a service life of up to 8,000 service hours in good operating conditions. Omnilube 455 is designed for reciprocating compressors.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Reciprocating Compressors
- Centrifugal Compressors
- Vacuum Pumps
- Meat Processing Plants
- Poultry Processing Plants
- Food Processing (H-1)

Performance Benefits:

- Outstanding wear and lubricity properties
- Less varnish formation
- Low pour point & high flash point
- Good corrosion protection
- Increase oxidative stability
- Excellent compatibility with elastomers, seals, plastics, and paints
- Complies with FDA 21 CFR 178.3570 H-1
- Approved for use in Canada

TYPICAL PROPERTIES	TEST METHOD	Omnilube 32/46	Omnilube 68	Chemlube 455
ISO Grade	ASTM D2422	32/46	68	100
Viscosity @ 40°C,cSt	ASTM D445	42.0	59.7	98.7
Viscosity @ 100°C,cSt	ASTM D445	7.6	9.8	14.0
Viscosity Index	ASTM D2270	150	150	145
Flash Point, °C/°F	ASTM D92	254/490	240/464	240/464
Pour Point, °C/°F	ASTM D97	-50/-58	-50/-58	-50/-58
Foaming Sequence, I, II, III	ASTM D892	0/0/0	---	---
Evaporation, %	ASTM D972	1.0	1.0	1.0
RPVOT, min.	ASTM D2272	3210	---	2873
Four Ball Wear, 40 Kg., 1200rpm, 75°C, 1 hr., Scar Diameter, mm	ASTM D4172	0.38	---	0.42
Falex EP, lbs.	ASTM D3233B	2315	---	2250
Specific Gravity	ASTM D1298	0.85	0.87	0.85

OMNILUBE® FGH 1000 SERIES

SYNTHETIC MULTI-PURPOSE FOOD GRADE HYDRAULIC FLUIDS

Applications:

The Omnilube FGH 1000 Series is a line of synthetic fluids blended from premium polyalphaolefin (PAO) base oils with superior additives that meet the requirements for demanding industrial hydraulic systems within the food industry. These NSF approved premium food grade hydraulic fluids are designed as multi-purpose to include a wide variety of industrial applications as well as hydraulic systems.

Typical Industrial Applications:

- Hydraulic Systems
- Canning
- Gears
- Bearings
- Valves
- Circulating Oil
- Chains
- Air Line Lubricant
- Meat Processing Plants
- Poultry Processing Plants
- Food Processing (H-1)

Performance Benefits:

- Reduced varnish and deposit build-up
- Low evaporation rate
- Wide temperature range
- Substantial reduction in make-up oil.
- Anti-wear protection
- Excellent compatibility with elastomers, seals, plastics, and paints
- Complies with FDA 21 CFR 178.3570 H-1
- Approved for use in Canada

TYPICAL PROPERTIES	TEST METHOD	Omnilube FGH 1022	Omnilube FGH 1032	Omnilube FGH 1046	Omnilube FGH 1068	Omnilube FGH 1100	Omnilube FGH 1150
ISO Grade	ASTM D2422	22	32	46	68	100	150
Viscosity @ 40°C,cSt	ASTM D445	22	31.4	46.0	68.8	93.6	147
Viscosity @ 100°C,cSt	ASTM D445	4.5	5.6	7.9	10.5	12.9	17.6
Viscosity Index	ASTM D2270	116	117	127	141	136	132
Flash Point, °C/°F	ASTM D92	240/465	246/465	260/500	260/500	260/500	260/500
Pour Point, °C/°F	ASTM D97	-60/-76	-57/-71	-48/-55	-48/-55	-42/-44	-37/-35
Copper Corrosion	ASTM D130	1b	1b	1b	1b	1b	1b
Foaming Sequence I, II, III	ASTM D892	Nil	Nil	Nil	Nil	Nil	Nil
Specific Gravity	ASTM D1298	0.82	0.82	0.83	0.84	0.84	0.85

OMNILUBE® FGH 2000 SERIES

SYNTHETIC MULTI-PURPOSE FOOD GRADE HYDRAULIC FLUIDS

Applications:

The Omnilube FGH 2000 Series is a line of synthetic fluids blended from premium polyalphaolefin (PAO) base oils with greatly improved wear, oxidation and lubricity over currently available H-1 food grade synthetic lubricants. These FDA approved premium hydraulic fluids were designed with a proprietary additive package and are designed as multi-purpose to include a wide variety of industrial applications as well as hydraulic systems. The 2000 series offers higher performance than the 1000 series.

Typical Industrial Applications:

- Hydraulic Systems
- Canning
- Gears
- Bearings
- Circulating Oil
- Chains
- Air Lines & Valves
- Meat Processing Plants
- Poultry Processing Plants
- Food Processing (H-1) & (H-2)

Performance Benefits:

- Extended lubricant life
- Reduced varnish and deposit build-up
- Wide temperature range
- Substantial reduction in make-up oil due to low evaporation rate
- Increased oxidative stability
- High load anti-wear protection
- Meets FDA 21 CFR 178.3570 H-2 and FDA 21 CFR 172.878 H-1
- Approved for use in Canada

TYPICAL PROPERTIES	TEST METHOD	Omnilube FGH 2032	Omnilube FGH 2046	Omnilube FGH 2068	Omnilube FGH 2100	Omnilube FGH 2150
ISO Grade	ASTM D2422	32	46	68	100	150
Viscosity @ 40°C,cSt	ASTM D445	33	46	68	99	150
Viscosity @ 100°C,cSt	ASTM D445	6.5	7.9	10.2	13.2	17.6
Viscosity Index	ASTM D2270	156	143	137	132	129
Flash Point, °C/°F	ASTM D92	240/465	246/475	240/465	232/450	238/460
Pour Point, °C/°F	ASTM D97	-60/-76	-54/-65	-48/-55	-42/-44	-37/-35
Copper Corrosion	ASTM D130	1b	1b	1b	1b	1b
Foaming Sequence I, II, III	ASTM D892	Nil	Nil	Nil	Nil	Nil
Falex Pin & "V" Block	ASTM D3233B	2250	2250	2250	2265	2265
Four ball wear-40Kg., 1200rpm,Scar Diameter	ASTM D4172	0.41 mm	0.41 mm	0.41 mm	0.41 mm	0.41 mm
Four Ball EP Weld Load, lb.	ASTM D2783	352	352	352	325	325
Timken OK Load	ASTM D2782	0.27	0.27	0.27	0.27	0.27
Specific Gravity	ASTM D1298	0.83	0.84	0.84	0.84	0.84

OMNILUBE® FGG 1000 Series

FOOD GRADE SYNTHETIC GEAR LUBRICANTS

Applications:

The Omnilube FGG products are synthetic food grade gear oils that are formulated from premium polyalphaolefins (PAO) base fluids. These NSF approved food grade gear oils are engineered to provide superior lubrication protection and include an extra additive to improve gasket and seal characteristics.

Typical Industrial Applications:

- Bearings
- Gear Sets
- Worm Gears
- Chains
- Circulating Oil
- Meat Processing Plants
- Poultry Processing Plants
- Food Processing (H-1)

Performance Benefits:

- Very low pour point
- Wide operating temperature range
- Extended drain intervals / reduced oil disposal
- Excellent compatibility with elastomers, seals, plastics, and paints
- Complies with FDA 21 CFR 178.3570 H-1
- Approved for use in Canada

TYPICAL PROPERTIES	TEST METHOD	Omnilube FGG 1100	Omnilube FGG 1150	Omnilube FGG 1220	Omnilube FGG 1320	Omnilube FGG 1460	Omnilube FGG 1680
ISO Grade	ASTM D2422	100	150	220	320	460	680
SAE Grade	SAE J-300	30	40	50	60	-	-
AGMA		3	4	5	6	7	8
Viscosity @ 40°C,cSt	ASTM D445	93.6	147	225.1	319	461	683
Viscosity @ 100°C,cSt	ASTM D445	12.9	17.6	23.4	30.5	39.1	52
Viscosity Index	ASTM D2270	136	132	128	132	130	130
Flash Point, °C/°F	ASTM D92	232/450	238/460	262/504	270/518	270/518	270/518
Pour Point, °C/°F	ASTM D97	-42/-44	-37/-35	-42/-44	-40/-40	-38/-36	-34/-29
Copper Corrosion	ASTM D130	1b	1b	1b	1b	1b	1b
Foaming Sequence I, II, III	ASTM D892	Nil	Nil	Nil	Nil	Nil	Nil
Specific Gravity	ASTM D1298	0.84	0.85	0.85	0.85	0.85	0.85

OMNILUBE® FGG 2000 Series

FOOD GRADE SYNTHETIC SEVERE LOAD GEAR LUBRICANTS

Applications:

The Omnilube FGG 2000 series are synthetic severe load food grade gear oils that are formulated from the highest quality polyalphaolefins (PAO) base fluids. These NSF approved H-1 severe load gear oils are engineered to provide significantly improved wear, oxidation and lubricity over currently available H-1 food grade gear oils. These premium severe load gear lubricants are designed with a proprietary additive package to give up to 50% longer life than other synthetic H-1 lubricants. The 2000 series offers higher performance than the 1000 series.

Typical Industrial Applications:

- Bearings
- Gear Sets including Worm Gears
- Chains
- Circulating Oil
- Meat & Poultry Processing Plants
- Food Processing (H-1)

Performance Benefits:

- Increased oxidative stability
- Wide operating temperature range, -40°F to 400°F
- Sever load anti-wear protection
- Complies with FDA 21 CFR 178.3570 H-1

TYPICAL PROPERTIES	TEST METHOD	Omnilube FGG 2100	Omnilube FGG 2150	Omnilube FGG 2220	Omnilube FGG 2320	Omnilube FGG 2460
ISO Grade	ASTM D2422	100	150	220	320	460
SAE Grade	SAE J-300	30	40	50	60	-
AGMA Lubricant Number	---	3 EP	4 EP	5 EP	6 EP	7 EP
Viscosity @ 40°C,cSt	ASTM D445	99	149	207	308	445
Viscosity @ 100°C,cSt	ASTM D445	13.2	17.6	22.2	29.2	37.5
Viscosity Index	ASTM D2270	132	129	129	129	127
Pour Point, °C/°F	ASTM D97	-42/-44	-37/-35	-35/-31	-33/-27	-27/-17
Flash Point, °C/°F	ASTM D92	232/450	238/460	262/504	270/518	270/518
Copper Corrosion	ASTM D130	1b	1b	1b	1b	1b
Foaming Sequence I, II, III	ASTM D892	Nil	Nil	Nil	Nil	Nil
Falex Pin & "V" Block	ASTM D3233B	2265	2265	2265	2265	2265
Four Ball Wear, 40 Kg., 1200rpm, 75°C, 1 hr., Scar Diameter, mm	ASTM D4172	0.40	0.40	0.40	0.40	0.41
Four Ball EP Weld Load, lb.	ASTM D2783	352	352	352	352	352
Timken OK Load	ASTM D2782	0.27	0.27	0.27	0.27	0.27
AGMA Lubricant Number	---	3 EP	4 EP	5 EP	6 EP	7 EP
Specific Gravity	ASTM D1298	0.84	0.84	0.87	0.85	0.85

OMNILUBE® PPG 220, 320, & 460 FG

FOOD GRADE SYNTHETIC LUBRICANTS

Applications:

Omnilube PGG 220, 320 & 460 FG are high-temperature gear lubricants formulated from premium polyalkylene glycol (PAG)-based oils. These NSF approved H-1 severe load gear oils are engineered to provide significantly improved wear, oxidation and lubricity over currently available H-1 food grade PAO and mineral-based gear oils. These premium severe load gear lubricants are designed for use in enclosed gears, bearings, and where conditions demand the unique properties of these fluids. They may also be used in gas compression applications utilizing reciprocation, rotary screw, and centrifugal type compressors in operating conditions beyond the capabilities of other synthetic lubricants and mineral oils.

Typical Industrial Applications:

- Enclosed gear units: spurm helical, bevel, and worm gears
- Plain and rolling contact bearings
- Compressors
- Chains
- Egg processing equipment
- Food processing (H-1)

Performance Benefits:

- Excellent oxidative and thermal stability
- Reduced sludge and deposit formation
- High flash point
- Wide operating temperature range
- Reduce friction
- Good wear protection
- Caution: Not compatible with petroleum oils and synthetic hydrocarbons
- Complies with FDA 21 CFR 178.3570 H-1

TYPICAL PROPERTIES	TEST METHOD	Omnilube PPG 220 FG	Omnilube PPG 320 FG	Omnilube PPG 460 FG
Viscosity @ 40°C,cSt	ASTM D445	220	320	460
Viscosity @ 100°C,cSt	ASTM D445	36.8	53.8	77.3
Viscosity Index	ASTM D2270	218	233	248
Flash Point, °C/°F	ASTM D92	284/544	284/544	290/554
Pour Point, °C/°F	ASTM D97	-40/-40	-40/-40	-33/-36
Specific Gravity	ASTM D1298	1.05	1.05	1.06

OMNILUBE® FGM 00, 0, 1 and 2

SYNTHETIC FOOD GRADE GREASE

Applications:

Omnilube FGM 00, 0, 1, and 2 are multi-purpose premium polyalphaolefin (PAO)-based greases designed for use in a wide variety of industrial applications where FDA/USDA regulations specify H1 grease for "incidental food contact". The Omnilube FGM Series of greases provide equipment protection and performance characteristics expected in a premium quality synthetic grease. These premium greases provide long life, wide operating temperature range, very high load carrying capacity, excellent water washout, and anti-corrosion properties. These greases are designed for use in all types of food machinery, anti-friction bearings, low to medium speed industrial bearings, slide ways and enclosed gears. The Omnilube FGM series of greases out-perform other greases under wet conditions.

Typical Industrial Applications:

- Enclosed Gears
- Slide ways
- Anti-friction Bearings
- Industrial Bearings - low to medium speeds
- Industrial Food Machinery
- Proofers – High Humidity areas
- Food Processing (H-1)

Performance Benefits:

- Excellent mechanical stability
- Excellent thermal and oxidative stability
- Wide operating temperature range
- Serviceable at -40oF and useful to 300oF continuous and 400oF intermittently
- GCLB bearing rated
- Complies with FDA 21 CFR 178.3570 H-1
- Approved for use in Canada

OMNILUBE® FGM 00, 0, 1 and 2

SYNTHETIC FOOD GRADE GREASE

TYPICAL PROPERTIES	TEST METHOD	Omnilube FGM 00	Omnilube FGM 0	Omnilube FGM 1	Omnilube FGM 2
NLGI Grade	---	00	0	1	2
Penetration Worked	ASTM D217	400-430	355-385	310-340	265-295
Penetration after 10,000 strokes	---	---	---	310-325	310-325
Dropping Point, °F	ASTM D2265	570	570	570	570
Rust Protection	ASTM D1743	Pass	Pass	Pass	Pass
Four Ball EP Weld Load, kg. Load Wear Index	 ASTM D2596 ASTM D2783	 400 47.23	 500 62	 500 62	 500 62
Timken OK Load, kg.	ASTM D2509	27	27	27	27
Four Ball Wear, 40 Kg., 1200rpm, 75°C, 1 hr., Scar Diameter, mm	ASTM D2266	0.56	0.40	0.40	0.40
Water Wash Out, % Loss	---	2.5	2.5	2.5	2.5
Thickener	---	Complex Calcium Sulfonate	Complex Calcium Sulfonate	Complex Calcium Sulfonate	Complex Calcium Sulfonate
Base Oil	---	PAO	PAO	PAO	PAO
Base Oil Viscosity, cSt	---	46	46	46	46
Oxidation Resistance Bearing Life (hours) RPVOT, psi after 1000 hrs.	 ASTM D3527 ASTM D952	 220 6.0	 220 6.0	 220 6.0	 220 6.0
Low Temperature Torque, g-cm Start, limit-<5,000 (1) Hour Running, limit-<700	ASTM D1478 	 3500 600	 3500 600	 3500 600	 3500 600
Specific Gravity	ASTM D1298	0.89	0.89	0.89	0.89

OMNILUBE® HT 22, HT 32, HT 46, and HT 68

FOOD GRADE HEAT TRANSFER FLUIDS

Applications:
The Omnilube HT series products are food grade heat transfer fluids formulated with USP grade white mineral oils. These colorless base oils are formulated with a combination of food grade antioxidants to give extended life at high temperatures. Omnilube HT 22, HT 32, HT 46 and HT 68 are designed for use in closed loop liquid phase heating systems <300°F. These NSF approved heat transfer fluids are non-corrosive to aluminum, steel, copper and brass.

Typical Industrial Applications:
- Closed Heat Transfer Systems

Performance Benefits:
- Excellent deposit control and resistance to sludging
- High thermal conductivity
- Extended oil life
- High flash point
- Low pour point
- Complies with FDA 21 CFR 178.3570 H-1

TYPICAL PROPERTIES	TEST METHOD	Omnilube HT 22	Omnilube HT 32	Omnilube HT 46	Omnilube HT 68
ISO Grade	ASTM D2422	22	32	46	68
Viscosity @ 40°C,cSt	ASTM D445	20.8	34	47.3	71
Viscosity @ 100°C,cSt	ASTM D445	4.2	5.8	7.2	9.2
Viscosity Index	ASTM D2270	106	112	112	106
Flash Point, °C/°F	ASTM D92	210/410	215/420	232/450	260/500
Pour Point, °C/°F	ASTM D97	-18/0	-12/10	-12/10	-12/10
Specific Gravity	ASTM D1298	0.86	0.86	0.85	0.85

OMNILUBE® PG 130 FG & PG 220 FG

SYNTHETIC FOOD GRADE CHAIN LUBRICANTS

Applications:

Omnilube PG 130 & 220 FG are synthetic chain lubricants formulated from premium polyalkylene glycol (PAG)-based oils. These NSF approved premium lubricants are designed for use on chains where excellent thermal stability and reduced deposits formation is required. PG-130 FG & PG-220 FG lubricants have much better load and wear properties over food grade H-1 white petroleum oils or PAO's.

For extreme high temperature applications, Omnilube PG 130 FG/AW & PG 220 FG/AW were designed with an enhanced high-temperature wear protection additives. These are NSF approved also.

Typical Industrial Applications:

- Chains
- Gear Sets
- Bearings
- Circulation Systems
- Way Oils
- Powder Metal Bearings

Performance Benefits:

- Excellent oxidative and thermal stability
- Reduced sludge and deposit formation
- Good water and rust resistance
- High flash point
- Caution: Not compatible with petroleum oils and synthetic hydrocarbons
- Complies with FDA 21 CFR 178.3570 H-1
- Omnilube PG 130 FG/AW and Omnilube PG 220 FG/AW: Containers should be mixed before opening or using to assure a well mixed product.

TYPICAL PROPERTIES	TEST METHOD	Omnilube PG 130 FG	Omnilube PG 130 FG/AW	Omnilube PG 220 FG	Omnilube PG 220 FG/AW
Viscosity @ 40°C,cSt	ASTM D445	130	130	224.3	224.3
Viscosity @ 100°C,cSt	ASTM D445	22	22	32.8	32.8
Viscosity Index	ASTM D2270	198	198	192	192
Flash Point, °C/°F	ASTM D92	264/507	264/507	264/507	264/507
Pour Point, °C/°F	ASTM D97	-39/-38	-39/-38	-29/-20	-29/-20
Specific Gravity	ASTM D1298	0.99	0.99	0.99	0.99

OMNILUBE® FGC 3100

FOOD GRADE SYNTHETIC LUBRICANT

Applications:
Omnilube FGC 3100 is a synthetic food grade chain and sprocket oil formulated from polyalphaolefin (PAO) base oil and tackifier to protect a wide variety of equipment. This NSF approved premium food grade lubricant is developed with high performance antioxidants, anti-wear additives and rust inhibitors to exceed the challenges of modern food-processing equipment and environments. This product provides extended lubrication change intervals and will extend equipment life

Typical Industrial Applications:
- Low Temperature Ovens
- Drive Chains
- Hi/Lo Speed Chains
- Mist, Spay, or Drip Lubrication Systems
- Food Processing (H-1)

Performance Benefits:
- Wide temperature range
- High degree of high temperature corrosion-oxidation stability
- Low evaporation rate
- Reduced maintenance cost & cleanliness
- Complies with FDA 21 CFR 178.3570 H-1

TYPICAL PROPERTIES	TEST METHOD	Omnilube FGC 3100
ISO Grade	ASTM D2422	100
Viscosity @ 40°C,cSt	ASTM D445	100
Viscosity @ 100°C,cSt	ASTM D445	8.5
Viscosity Index	ASTM D2270	130
Flash Point, °C/°F	ASTM D92	238/460
Pour Point, °C/°F	ASTM D97	-37/-35
Copper Corrosion	ASTM D130	1b
Specific Gravity	ASTM D1298	0.85

OMNILUBE® AIR LINE FG

SYNTHETIC FOOD GRADE LUBRICANT

Applications:

Omnilube Air Line FG is a synthetic food grade oil that is formulated with the highest quality polyalphaolefin (PAO) base oil to meet the lubrication requirements of air line equipment. This NSF approved lubricant is formulated with high performance antioxidants and anti-wear additives to meet the challenges of industrial environments. This product provides lubrication for all air line equipment used in food processing plants.

Typical Industrial Applications:

- Air Tools
- Air Operated Processing Equipment
- Air Operated Packaging Equipment
- Air Operated Knives and Saws
- Food Processing Equipment (H-1)

Performance Benefits:

- Designed specifically for air line lubrication
- Protects against rust
- Provides wear protection
- Complies with FDA 21 CFR 178.3570 H-1

TYPICAL PROPERTIES	TEST METHOD	Air Line FG
ISO Grade	ASTM D2422	32
Viscosity @ 40°C,cSt	ASTM D445	32
Viscosity @ 100°C,cSt	ASTM D445	6.0
Viscosity Index	ASTM D2270	135
Flash Point, °C/°F	ASTM D92	245/473
Pour Point, °C/°F	ASTM D97	-50/-58
Copper Corrosion	ASTM D130	1b
Specific Gravity	ASTM D1298	0.83

OMNILUBE® WO COOKER VALVE OIL

HIGH TEMPERATURE WATER RESISTANT OIL

Applications:

Omnilube WO Cooker Valve Oil is made from highly refined, purified USP Grade white mineral oils that are colorless, odorless, and tasteless. Omnilube WO Cooker Valve Oil complies with USP and FDA requirements as per 21 CFR 172.878. This premium cooker valve oil is designed for use in Cookers and Sterilizers where high temperatures and high humidity are present. Omnilube WO Cooker Valve Oil also provides protection for bearing, slides and operating valves.

Typical Industrial Applications:

- Manzel Lubricators
- Microvalve Systems
- Flooded Live Steam
- Cookers
- Sterilizers
- Bearings
- Slides
- Operating Valves
- Food Processing (H-1)

Performance Benefits:

- Complies with FDA 21 CFR 178.3570 H-1

TYPICAL PROPERTIES	TEST METHOD	Omnilube WO Cooker Valve Oil
ISO Grade	ASTM D2422	150
Viscosity @ 40°C,cSt	ASTM D445	142
Viscosity @ 100°C,cSt	ASTM D445	14.5
Viscosity Index	ASTM D2270	100
Flash Point, °C/°F	ASTM D92	226/504
Pour Point, °C/°F	ASTM D97	-35/-31
Foaming Sequence, I, II, III	ASTM D892	Nil

OMNILUBE® WO SV 22 and 100

USP GRADE WHITE OILS

Applications:

Omnilube WO SV 22 and 100 are highly refined, purified USP Grade white mineral oils that are colorless, odorless, and tasteless. These premium white oils fully comply with USP and FDA requirements as per 21 CFR 172.878. Omnilube WO SV 22 is comparable to Witco's Carnation, Penreco's Bakeol 7, Mallet's Exalube, Ultra lube, and D-lube products. Omnilube WO SV 100 is comparable to Puretol Grade 55, Witco's Kadol, Penreco's Bakeol 35, Mallet's Prima lube and K-lube products.

Typical Industrial Applications:

- Bread Dividers
- Dough Troughs
- Use as a wipe down oil
- Use as a diluent oil
- Dust Suppression
- Textile Fiber Applications
- Lubricate, soften, smooth, moisturize, and add emolliency in the cosmetics and personal care industry

Performance Benefits:

- Edible
- Colorless, odorless, and tasteless
- USP Grade
- Complies with FDA CFR 172.878 3H

TYPICAL PROPERTIES	TEST METHOD	Omnilube WO SV 22	Omnilube WO SV 100
ISO Grade	ASTM D2422	22	100
Viscosity @ 40°C,cSt	ASTM D445	17.6/20.2	100/125
Neutrality	USP(latest rev.)	Pass	Pass
Readily Carbonizable Substances	USP(latest rev.)	Pass	Pass
Solid Paraffin	USP(latest rev.)	Pass	Pass
Limit of Polynuclear Compounds	USP(latest rev.)	Pass	Pass
Sulfur Compounds	USP XVII	Pass	Pass
Odor	LATM 092	None	None
Color, saybolt	ASTM D156	30 min.	30 min.
Breakdown Time, min.	LATM 017	40 min.	---
Pour Point	D97	---	-20
Specific Gravity, 25°C	D4052	0.85	0.86

Puretol* is a registered trademark of Petro-Canada.

OMNICLEAN FG

FOOD GRADE CLEANER AND SYSTEM FLUSH

Review the Procedure for Flushing Rotary Screw Compressors on the reverse side of this Technical Data Sheet BEFORE using this product.

Applications:

Omniclean FG is a lubricating, flushing and cleansing oil that can be used in food, beverage and pharmaceutical processing plants in any area where there is a possibility of exposure of the lubricated machinery parts to edible products. It may be used along with the existing lubricant in order to clean equipment of carbonaceous debris, sludge and dirt without dismantling machinery. This leads to savings on labor, downtime and replacement parts costs.

Typical Industrial Applications:

- Rotary Screw Compressors
- Rotary Vane Compressors
- Centrifugal Compressors
- Hydraulic Systems
- Gearboxes
- Vacuum Pumps
- Chains
- Bearings
- Reservoirs
- Air Lines and Air Tools
- Centralized Lubricating Systems

Performance Benefits:

- Solubilizes and removes harmful varnish and “sludge”
- Compatible with petroleum based lubricants such as mineral oil and PAO
- Compatible with seals and elastomers
- Excellent cleaning capabilities
- Non-drying lubricant
- Complies with FDA 21 CFR 178.3570 H-1

TYPICAL PROPERTIES	TEST METHOD	Omniclean FG
Viscosity @ 40°C,cSt	ASTM D445	8.1
Viscosity @ 100°C,cSt	ASTM D445	2.37
Viscosity Index	ASTM D2270	110
Flash Point, °C/°F	ASTM D92	105/221
Pour Point, °C/°F	ASTM D97	-35/-37
Color	ASTM D1500	0.0
Specific Gravity	ASTM D1298	<1

PROCEDURE FOR FLUSHING ROTARY SCREW AIR COMPRESSORS

Omniclean FG should be used where food grade cleaning and flushing lubricant is required. For non food grade applications UltraSolv or Ultraclean may be used.

Drain compressor oil immediately after shutdown while fluid is warm. This should include all possible drain points.

Check all filters as well as the separator. If in good condition, proceed to step 3. If filters or separator is heavily contaminated, change or clean at this time as the use of Omniclean FG may result in carbonaceous deposits and varnish being removed during use. Fill compressor with Omniclean FG.

Run air compressor **UNDER NO LOAD** for a period of 2 to 24 hours. The run time will be decided in part by the severity of contamination and the condition of the air compressor.

Drain Omniclean FG from air compressor at all drain points as completely as possible. This should be done immediately after shutdown.

Change air oil separator as well as all filters to ensure that all contaminants and oxidized oil are removed from compressor.

Refill compressor with fresh lubricant.

An initial sample should be taken after 500 hours of service. Oil analysis will determine the condition of the oil at that time and whether continued flushing is necessary. Oil samples should then be taken at 500 hour intervals until an appropriate oil drain interval has been established.

Omnilube FG is compatible with mineral oils, white oils, other polyalphaolefins, and many ester based synthetics. Many synthetics are as different from each other as they are with petroleum products therefore; it is always advisable to contact Ultrachem Inc. prior to changing over compressor oils.

OMNILUBE® FGH 1046 AEROSOL

SYNTHETIC MULTI-PURPOSE FOOD GRADE HYDRAULIC FLUID

Applications:
Omnilube FGH 1046 Series are synthetic fluids blended from premium polyalphaolefin (PAO) base oils with superior additives that meet the requirements for demanding industrial hydraulic systems within the food industry. These NSF approved premium food grade hydraulic fluids are designed as multi-purpose to include a wide variety of industrial applications as well as hydraulic systems.

Typical Industrial Applications:
- Hydraulic Systems
- Canning
- Gears
- Bearings
- Valves
- Circulating Oil
- Chains
- Air Line Lubricant
- Meat Processing Plants
- Poultry Processing Plants
- Food Processing (H-1)

Performance Benefits:
- Reduced varnish and deposit build-up
- Low evaporation rate
- Wide temperature range
- Substantial reduction in make-up oil.
- Anti-wear protection
- Excellent compatibility with elastomers, seals, plastics, and paints
- Complies with FDA 21 CFR 178.3570 H-1

TYPICAL PROPERTIES	TEST METHOD	Omnilube FGH 1046 Aerosol
ISO Grade	ASTM D2422	46
Viscosity @ 40°C,cSt	ASTM D445	46.0
Viscosity @ 100°C,cSt	ASTM D445	7.9
Viscosity Index	ASTM D2270	127
Flash Point, °C/°F	ASTM D92	260/500
Pour Point, °C/°F	ASTM D97	-66/-87
Copper Corrosion	ASTM D130	1b
Foaming Sequence I, II, III	ASTM D892	Nil
Specific Gravity	ASTM D1298	0.83

OMNILUBE® FGM 2 AEROSOL

SYNTHETIC FOOD GRADE GREASE

Applications:

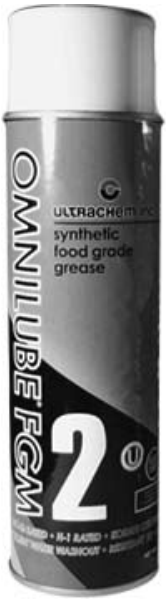
Omnilube FGM 2 is a multi-purpose premium polyalphaolefin (PAO)-based grease designed for use in a wide variety of industrial applications where FDA/USDA regulations specify H1 grease for "incidental food contact". The Omnilube FGM 2 grease provides equipment protection and performance characteristics expected in a premium quality synthetic grease. This premium grease provides long life, a wide operating temperature range, very high load carrying capacity, excellent water washout, and anti-corrosion properties. This grease is designed for use in all types of food machinery, anti-friction bearings, low to medium speed industrial bearings, slide ways and enclosed gears. Omnilube FGM 2 grease out-performs other greases under wet conditions.

Typical Industrial Applications:

- Enclosed Gears
- Slide ways
- Anti-friction Bearings
- Industrial Bearings - low to medium speeds
- Industrial Food Machinery
- Proofers – High Humidity areas
- Food Processing (H-1)

Performance Benefits:

- Excellent mechanical stability
- Excellent thermal and oxidative stability
- Wide operating temperature range
- Serviceable at -40oF and useful to 300oF continuous and 400oF intermittently
- GCLB bearing rated
- Complies with FDA 21 CFR 178.3570 H-1



OMNILUBE® FGM 2 AEROSOL

SYNTHETIC FOOD GRADE GREASE

TYPICAL PROPERTIES	TEST METHOD	Omnilube FGM 2 Aerosol
NLGI Grade	---	2
Penetration Worked	ASTM D217	265-295
Penetration after 10,000 strokes	---	310-325
Dropping Point, °F	ASTM D2265	570
Rust Protection	ASTM D1743	Pass
Four Ball EP Weld Load, kg. Load Wear Index	 ASTM D2596 ASTM D2783	 500 62
Timken OK Load, kg.	ASTM D2509	27
Four Ball Wear, 40 Kg., 1200rpm, 75°C, 1 hr., Scar Diameter, mm	ASTM D2266	0.40
Water Wash Out, % Loss	---	2.5
Thickener	---	Complex Calcium Sulfonate
Base Oil	---	PAO
Base Oil Viscosity, cSt	---	46
Oxidation Resistance Bearing Life (hours) RPVOT, psi after 1000 hrs.	 ASTM D3527 ASTM D952	 220 6.0
Low Temperature Torque, g-cm Start, limit-<5,000 (1) Hour Running, limit-<700	ASTM D1478	 3500 600
Specific Gravity	ASTM D1298	0.89

OMNILUBE® 1

SYNTHETIC PLASTICS COMPATIBLE GREASE

Applications:
Omnilube 1 is a synthetic multi-purpose grease formulated for use in a wide variety of applications where plastic compatibility is required. Omnilube 1 provides protection and wear prevention for a long life, wide temperature range, and exhibits waterproof characteristics. Omnilube 1 is formulated with a tackifier.

Typical Industrial Applications:
- Sliding Bearings
- Anti-friction Bearings
- Slide Ways
- Industrial Bearings – low to medium speeds

Performance Benefits:
- Excellent stability: Prevents rust in bearings
- Wide temperature range: Pumpable at -40°F and useful to 300°F continuous, 400°F intermittently
- Superior for wet conditions
- Tacky for better adherence

TYPICAL PROPERTIES	TEST METHOD	Omnilube 1
NLGI Grade	---	1
Penetration Worked	ASTM D217	310-340
Dropping Point, °F	ASTM D2265	500
Rust Protection	ASTM D1743	Pass
Four Ball EP Weld Load, kg. Load Wear Index	 ASTM D2596 ASTM D2783	 315 56.6
Water Wash Out, % Loss	---	Nil
Thickener	---	Aluminum Complex
Base Oil	---	PAO
Base Oil Viscosity @ 210°F, cSt	ASTM D445	14.0
Base Oil Viscosity @ 100°F, cSt	ASTM D445	110.4
Base Oil Viscosity @ 0°F, cSt	ASTM D445	1512
Viscosity Index	ASTM D2270	135
Pour Point, °C/°F	ASTM D97	-57/-70
Flash Point, °C/°F	ASTM D92	246/475

OMNILUBE® 2

SYNTHETIC EP GREASE

Applications:
Omnilube 2 is a synthetic multi-purpose EP grease formulated for use in a wide variety of applications where plastic compatibility is required. Omnilube 2 provides optimum anti-wear performance, mechanical stability, corrosion protection and oxidation resistance under almost all load and speed conditions. This EP grease is water proof and will eliminate the need for multiple special greases. Omnilube 2 does not contain a tackifier.

Typical Industrial Applications:
- Sliding Bearings
- Anti-friction Bearings
- Slide Ways
- Low & High Speed Journal Bearings
- General Machinery Lubrication
- All Chassis Points, Ball & Universal Joints
- Wheel Bearings
- King Pins
- Fifth Wheels
- Severe Duty Applications
- Industrial Bearings – low to medium speeds
- Food Processing (H-2)

Performance Benefits:
- Excellent stability: Prevents rust in bearings
- High dropping point
- Wide temperature range: Pumpable at -40°F and useful to 300°F continuous, 400°F intermittently
- Superior for wet conditions
- Non-tacky
- Extreme pressure properties
- USDA H-2 authorized

TYPICAL PROPERTIES	TEST METHOD	Omnilube 2
NLGI Grade	---	2
Color	Visual	Yellow
Penetration Worked (60 strokes)	ASTM D217	280
Dropping Point, °F	ASTM D2265	500
Copper Corrosion	ASTM D4048	1b
Oxidation Stability, pressure drop @100 hrs, kPa (psi)	ASTM D942	13.8 (2)
Rust Protection	ASTM D1743	Pass
4-Ball EP Test Weld Load, kg. Load Wear Index, kg.	ASTM D2596	 315 57
Thickener	---	Aluminum Complex
Base Oil	---	PAO
Base Oil Viscosity @ 100°C	ASTM D445	13.8
Base Oil Viscosity @ 40°C	ASTM D445	99
Pour Point, °C/°F	ASTM D97	-45/-49

OMNILUBE® 5079

SYNTHETIC PLASTICS COMPATIBLE GREASE

Applications:
Omnilube 5079 is a full synthetic multi-purpose grease formulated for use in a wide variety of applications where plastic compatibility is required. Omnilube 5079 provides protection and wear prevention for a long life, wide temperature range, and exhibit waterproof characteristics. Omnilube 5079 does not contain a tackifier.

Typical Industrial Applications:
- Sliding Bearings
- Anti-friction Bearings
- Slide Ways
- Industrial Bearings – low to medium speeds

Performance Benefits:
- Excellent stability: Prevents rust in bearings
- Wide temperature range: Pumpable at -40°F and useful to 300°F continuous, 400°F intermittently
- Superior for wet conditions
- Non-tacky

TYPICAL PROPERTIES	TEST METHOD	Omnilube 5079
NLGI Grade	---	1
Penetration Worked	ASTM D217	310-340
Dropping Point, °F	ASTM D2265	500
Rust Protection	ASTM D1743	Pass
Four Ball EP Weld Load, kg. Load Wear Index	 ASTM D2596 ASTM D2783	 315 56.6
Water Wash Out, % Loss	---	Nil
Thickener	---	Aluminum Complex
Base Oil	---	PAO
Base Oil Viscosity @ 210°F, cSt	ASTM D445	14.0
Base Oil Viscosity @ 100°F, cSt	ASTM D445	110
Base Oil Viscosity @ 0°F, cSt	ASTM D445	1512
Viscosity Index	ASTM D2270	135
Pour Point, °C/°F	ASTM D97	-57/-70
Flash Point, °C/°F	ASTM D92	246/475

VISCHEM® 352

SYNTHETIC MULTI-PURPOSE GREASE

Applications:
Vischem 352 is a synthetic multi-purpose grease formulated for use in a wide variety of applications. Vischem 352 is soft and applies easily; only a thin film is required. Vischem 352 will not wipe off, sling off, or drip off.

Typical Industrial Applications:
- Business Machines
- Gear Boxes
- Gas Meters
- Tools
- Bearings
- Control Mechanisms
- Parking Meters
- Timers
- Clocks
- Speedometers
- Potentiometers
- Instruments
- Counters
- Motors
- Appliances
- Optical Instruments
- Recorders
- Sound Equipment

Performance Benefits:
- Excellent anti-wear properties
- Will not dry out to form gum, sludge, or other deposits
- Longest possible life
- Protects against humidity and prevents rust
- Wide temperature range, -65°F to 300°F

TYPICAL PROPERTIES	TEST METHOD	Vischem 352
NLGI Grade	---	1
Color	Visual	Light Tan
Structure	Visual	Smooth
Penetration Worked (60 strokes) Unworked	ASTM D217 ASTM D217	330 325
Dropping Point, °C	ASTM D2265	187
Oil Separation, 24 hrs. at 100°C, %	ASTM D6184	6.0
Evaporation, 24 hrs. at 100°C, %	CTM	0.36
Water Washout @ 38°C, %	ASTM D1264	2.1
Base Oil	---	Synthetic
Base Oil Viscosity @ 40°F	ASTM D445	32/46

VISCHEM® 362

SYNTHETIC HIGH TEMPERATURE GREASE

Applications:
Vischem 362 is a synthetic high temperature grease formulated for use where high thermal and oxidative stability is required. Vischem 362 has good load carrying capabilities and can be used for heavy or light loads.

Typical Industrial Applications:
- Business Machines
- Gear Boxes
- Gas Meters
- Tools
- Ball & Roller Bearings
- Cams/Slides/Gears
- Control Mechanisms
- Instruments
- Electric Motors
- Appliances
- Automotive
- Instrument Applications

Performance Benefits:
- Extreme long life
- Excellent oxidation stability, no deposits
- Outstanding thermal stability
- Wide useful temperature range, -40°F to 450°F

TYPICAL PROPERTIES	TEST METHOD	Vischem 362
NLGI Grade	---	2
Penetration Worked (60 strokes)	ASTM D217	270-300
Dropping Point, °F	ASTM D2265	500
Oil Separation, 24 hrs. at 100°C, %	ASTM D6184	3
Evaporation rate max., %	CTM	5
Water Washout	ASTM D1264	Nil
Normal Hoffman Bomb Oxidation 100 hrs. PSI loss 500 hrs. PSI loss	---	 0.0 0.3
Thickener	---	Cabosil
Base Oil	---	Synthetic
Base Oil Viscosity @ 210°F	ASTM D445	7.2
Base Oil Viscosity @ 100°F	ASTM D445	40
Base Oil Viscosity @ -40°C	ASTM D445	22,500
Flash Point, °C/°F	ASTM D92	246/475
Pour Point, °C/°F	ASTM D97	-54/-65

VISCHEM® 373

SYNTHETIC CHAIN LUBRICANT

Applications:
Vischem 373 is a synthetic chain lubricant for indoor and outdoor applications. Vischem 373 is formulated with a tackifier to prevent sling off and has excellent performance in applications that are problematic with water wash.

Typical Industrial Applications:
- Chains
- Gears
- Cams
- Slides
- Wire Rope

Performance Benefits:
- Extreme long life
- Excellent oxidation stability, no deposits
- Protects against moisture and salt atmospheres
- Tacky, will not sling off chains or gears
- Prevents wear
- High degree of solvency, cleans off old deposits
- Wide useful temperature range, -20°F to 275°F

TYPICAL PROPERTIES	TEST METHOD	Vischem 373
NLGI Grade	---	00
Penetration Worked (60 strokes)	ASTM D217	400-430
Dropping Point, °C/°F	ASTM D2265	168/335
Evaporation, 222 hrs. @ 210°F, %	---	0.9
Water Washout	ASTM D1264	Nil
Normal Hoffman Bomb Oxidation 500 hrs. PSI loss	---	6.0
Thickener	---	Lithium Stearate
Salt Spray, min. hrs.	---	50
Humidity cabinet, min. hrs.	---	500
Base Oil	---	Synthetic

VISCHEM® 501 and 502

SYNTHETIC HIGH TEMPERATURE GREASES

Applications:
Vischem 501 and 502 are outstanding heat stable, long life, full synthetic non-melting greases. These greases are superior for high temperature applications and are lower cost than silicone greases. Vischem 501 and 502 are recommended for use where silicone greases have been used satisfactorily; also where other petroleum and other synthetic greases have failed. These greases will not form coke, sludge, or varnish when used within the useful temperature range. Vischem 501 and 502 have a non-melting dropping point over 500°F.

Typical Industrial Applications:
- Conveyors
- Ovens
- Electric Motors
- Appliances
- High Temperature Processing Equipment
- Gear Boxes
- Tools
- Ball & Roller Bearings
- Cams/Slides/Gears
- Control Mechanisms
- Instruments
- Appliances
- Automotive

Performance Benefits:
- Extreme long life
- Excellent oxidation stability, no deposits
- Outstanding thermal stability
- Low evaporation rate
- Low bleed rate for durability
- Contains no petroleum or silicone components
- Wide useful temperature range, -40°F to 450°F plus

TYPICAL PROPERTIES	TEST METHOD	Vischem 501	Vischem 502
NLGI Grade	---	1	2
Penetration Worked (60 strokes)	ASTM D217	310-340	265-295
Dropping Point, °C	ASTM D2265	500	500
Oil Separation, 24 hrs. at 400°F, %	ASTM D6184	3	2.5
Evaporation, 24 hrs. at 400°F, %	---	5	5
Normal Hoffman Bomb Oxidation 100 hrs. PSI loss 500 hrs. PSI loss	---	 1 2	 1 2
Base Oil Viscosity @40 °C	ASTM D445	45/68	45/68

VISCHEM® 4076

SYNTHETIC HIGH TEMPERATURE GREASE

Applications:
Vischem 4076 is a full synthetic high temperature grease formulated for use where high thermal and oxidative stability is required. Vischem 4076 has good load carrying capabilities and can be used for heavy or light loads. Vischem 4076 will resist moisture.

Vischem 4076SS is available having a softer penetration.

Typical Industrial Applications:
- Business Machines
- Gear Boxes
- Gas Meters
- Tools
- Ball & Roller Bearings
- Cams/Slides/Gears
- Control Mechanisms
- Instruments
- Electric Motors
- Appliances
- Automotive
- Instrument Applications

Performance Benefits:
- Extreme long life
- Excellent oxidation stability, no deposits
- Outstanding thermal stability
- Wide useful temperature range, -40°F to 450°F

TYPICAL PROPERTIES	TEST METHOD	Vischem 4076
NLGI Grade	---	2
Penetration Worked (60 strokes)	ASTM D217	265-295
Dropping Point, °C/°F	ASTM D2265	260/500
Oil Separation, max., %	ASTM D6184	3
Normal Hoffman Bomb Oxidation 100 hrs. PSI loss 500 hrs. PSI loss	---	 0.0 0.3
Base Oil	---	Synthetic
Base Oil Viscosity @ 210°F	ASTM D445	7.2
Base Oil Viscosity @ 100°F	ASTM D445	40
Evaporation rate max. at 400°F, %	ASTM D972	5
Flash Point, °C/°F	ASTM D92	266/510
Pour Point, °C/°F	ASTM D97	-54/-65

ULTRACHEM GREASES

	Vischem 352	Vischem 362	Vischem 373	Vischem 501	Vischem 502	Vischem 4076	Omnilube 1	Omnilube 2	Omnilube 5079	Omnilube FGM2
Thickener Type	Lithium	Silica	Lithium	Clay	Clay	Clay	Alum Comp	Alum Comp	Alum Comp	Calcium Sulfonate
Non-Melting	No	Yes	No	Yes	Yes	Yes	No	No	No	No
Dropping Point	369 F	500 F	335 F	500 F	500 F	500 F	500 F	500 F	500 F	570 F
Graphite	No	No	No	No	No	No	No	No	No	No
Molybdenum	No	No	No	No	No	No	No	No	No	No
Synthetic %	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Synthetic Type	Diester	POE		POE	POE	Diester	PAO	PAO	PAO	PAO
NLGI#	1	2	0	1	2	2	1	2	1	2
ISO Viscosity Base Fluid	32/46	32/46	68	NA	NA	32/46	100	100	100	46
Food Grade	No	No	No	No	No	No	No	No	No	Yes H-1
Color	Off White	Clear	Off White	Tan	Tan	Tan	Yellow/Straw	Yellow/Straw	Yellow/Straw	Off White

A-110 and A-110-5P, A-121, and A-121-5P

LONG LIFE LUBRICATING FLUIDS

Applications:
A-100, A-100-5P, A-121, and A-121-5P are tried and proven premium quality impregnating lubricants that have become the standards for many pm bearings. These oils were developed jointly with the R&D team of a leading powder metal manufacturer for the purpose of providing outstanding performance in powdered metal bearings.

The "5P" designation refers to the addition of colloidal graphite. The graphite fortified version of each tested for 7,700 hours at ambient temperatures, 25,000 PV (pressure velocity) at 1,000 rpm and 835 hours at 205°F, 18,000 PV at 1,000 rpm without failure.

Typical Industrial Applications:
- Impregnating Lubricant
- Hydraulic Systems
- Gear Cases
- Appliances
- Business Machines
- Power Tools

Performance Benefits:
- Effective at higher temperatures
- Extremely good rust and oxidation protection – actually sheds water
- Longer life than many conventional petroleum products
- Outstanding wear protection
- Excellent oxidation stability
- Compatible with many plastics
- "Oils containing "5P" or graphite should be mixed before opening or using for even dispersement."

TYPICAL PROPERTIES	TEST METHOD	A-110	A-110-5P	A-121	A-121-5P
ISO Grade	ASTM D2422	32	32	77	77
Viscosity @ 40°C,cSt	ASTM D445	32	32	76.4	75
Viscosity @ 100°C,cSt	ASTM D445	5.25	5.25	9.5	10.0
Viscosity Index	ASTM D2270	95	95	100	116
Flash Point, °C/°F	ASTM D92	>200/392	>200/392	250/482	250/482
Pour Point, °C/°F	ASTM D97	-24/-11	-24/-11	-30/-22	-30/-22
Specific Gravity	ASTM D1298	0.87	0.87	0.88	0.88

CHEMLUBE® 201, 207, 315, 645, and 645-AW

SYNTHETIC INSTRUMENT LUBRICANT

Applications:
Chemlube 201, 207, 315, and 645 are premium synthetic diester lubricants used for a wide variety of sintered powdered metal bearings over a wide temperature range. Chemlube 201, 207, and 315 are mostly used in areas where low temperature start-up or operation is required. Chemlube 645 is one of the most popular impregnating oils and can be used as a general purpose lubricating oil. 645 is usually used at higher temperatures and contains additives to reduce oil migration or "slinging". Chemlube 645AW has been formulated with additional anti-wear additives to provide higher load carrying protection.

Chemlube 201 is equivalent to MIL-L-6085A requirements and conforms to those specifications.

Typical Industrial Applications:
- Impregnating Lubricant
- Instruments
- Business Machines
- Appliances
- Meters
- Postal Equipment
- Motors
- Timing Devices
- Compressors
- Hydraulic Devices
- Electric Motors

Performance Benefits:
- Light viscosity for outstanding low temperature actuation
- High viscosity index, less change with temperature
- Low evaporation rate for long life
- Excellent oxidation stability – non gumming
- Wide useful temperature range, -65° to 300°F
- Equivalent to MIL-L-6085A requirements

TYPICAL PROPERTIES	TEST METHOD	Chemlube 201	Chemlube 207	Chemlube 315	Chemlube 645	Chemlube 645 AW
Viscosity @ 40°C,cSt	ASTM D445	13.3	36.1	3.5	60.4	61
Viscosity @ 100°C,cSt	ASTM D445	3.6	8.8	1.8	11.0	11
Viscosity Index	ASTM D2270	162	232	152	176	180
Flash Point, °C/°F	ASTM D92	199/391	232/450	182/360	245/473	245/473
Pour Point, °C/°F	ASTM D97	-65/-85	-57/-70	-76/-105	-59/-75	-59/-75
Fire Point, °C/°F	ASTM D92	241/465	0.4	---	285/545	285/545
Evaporation, %	ASTM D972	0.85	0.001	3.9	<1.0	<1.0
Moisture Content	---	Nil	Nil	---	---	---
Foaming	---	Nil	Nil	---	---	---
Lbs./Gal.	---	7.7	7.7	7.21	7.62	7.62
Specific Gravity	ASTM D1298	0.925	0.925	0.86	0.91	0.91

CHEMLUBE® 209, 217, and 5072

SYNTHETIC HIGH TEMPERATURE LUBRICANT

Applications:
Chemlube 209, 209G, 217, 217G, and 5072 are premium quality high performance impregnating oils formulated using polyol ester (POE) base oils. The "G" designation refers to the addition of colloidal graphite which eliminates "dry" start-up and is particularly useful in high temperature and high load conditions.

The Chemlube 209G has been tested for 4,000 hours at 250°F, 18,000 PV at 1,000 rpm without failure. Chemlube 5072 was developed as an improved version of Chemlube 209 for use under severe wear conditions. Chemlube 217 has the highest flash point of almost any of our impregnating oils.

Typical Industrial Applications:
- Impregnating Lubricant
- Instruments
- Gas Turbines
- Compressors
- Conveyors
- Blowers
- Heaters
- Machine Tools
- Ovens
- High Temperature Motor Bearings
- Small Tools
- Electric Motors

Performance Benefits:
- Superior high temperature oil
- Low evaporation rate for long life
- Excellent oxidation and thermal stability
- Outstanding load carrying capability
- Wide useful temperature range
- Longer life than other synthetic oils
- Oils containing "G" or graphite should be mixed before opening or using for even dispersement

CHEMLUBE® 209, 217, and 5072

SYNTHETIC HIGH TEMPERATURE LUBRICANT

TYPICAL PROPERTIES	TEST METHOD	Chemlube 209	Chemlube 209G	Chemlube 217	Chemlube 217G	Chemlube 5072
Viscosity @ 40°C,cSt	ASTM D445	39.1	41.0	56.9	55.4	42
Viscosity @ 100°C,cSt	ASTM D445	6.5	7.6	9.3	9.14	7.8
Viscosity Index	ASTM D2270	120	157	145	146	161
Flash Point, °C/°F	ASTM D92	246/475	246/475	288/550	288/550	246/475
Pour Point, °C/°F	ASTM D97	-51/-60	-51/-60	-54/-65	-54/-65	-57/-70
Evaporation 22 hrs.@210°F, %	ASTM D972	0.28	0.28	0.15	0.15	0.2
Evaporation 6.5 hrs.@400°F, %	ASTM D972	3.40	---	1.61	1.61	---
Evaporation 100 hrs.@400°F, %	ASTM D972	21.11	---	8.34	8.34	---
Foaming	---	Nil	---	Nil	Nil	Nil
Moisture Content	---	Nil	---	Nil	Nil	Nil
Lbs./Gal.	---	8.33	8.38	8.39	8.42	8.38
Graphitic Carbon Content	---	---	0.3-0.5%	---	0.3-0.5%	---
Graphite Particle Sizes, average micron	---	---	0.5-1.0	---	0.5-1.0	---
Specific Gravity	ASTM D1298	1.00	1.00	1.01	1.01	1.00-1.01

CHEMLUBE® 626

SYNTHETIC IMPREGNATING LUBRICANT

Applications:
Chemlube 626 is a synthetic impregnation lubricant for the longest possible life over the widest temperature range. Chemlube 626G is formulated with the addition of colloidal graphite for improved performance.

Typical Industrial Applications:
- Impregnating Lubricant
- Appliances
- Small Power Tools
- Automotive Accessory Motors
- Timers
- Business Machines
- Sound Equipment Applications
- Electric Motors

Performance Benefits:
- Low evaporation rate for longest life
- Excellent oxidation stability, no deposits
- Widest useful temperature range
- Resists "pumping" – the oil migrates slowly out
- Built-in non-sling, non-drip characteristics
- Reliability under adverse conditions of temperature, time, wear, and oxidation

TYPICAL PROPERTIES	TEST METHOD	Chemlube 626	Chemlube 626G
ISO Grade	ASTM D2422	68	68
Viscosity @ 40°C,cSt	ASTM D445	69.7	72.81/74.7
Viscosity @ 100°C,cSt	ASTM D445	9.7	10.77/11.0
Viscosity Index	ASTM D2270	119	130
Flash Point, °C/°F	ASTM D92	232/495	232/495
Pour Point, °C/°F	ASTM D97	-40/-40	-40/-40
Evaporation, %	ASTM D972	<1	<1
Copper Corrosion	ASTM D130	1a	1a
Graphite Carbon Content, %	---	---	0.3-0.5
Graphite Particle Sizes, Average Micron	---	---	0.5-1.0
Specific Gravity	ASTM D1298	0.83	0.865

SYNTROIL® 220, 330, 440, and 555

SYNTHETIC IMPREGNATING LUBRICANTS

Applications:
The Syntroil series lubricants are designed for the impregnation of sintered metal bearings, structural parts and reservoirs for the longest possible life over the widest temperature range. For appliances, automotive, business machines, power tools and sound equipment applications. The Syntroils are the finest impregnating fluids available today.

The Syntroil series can be fortified with colloidal graphite, which has been milled to an average particle size of .5 micron. Syntroil 220G, 330G, and 440G help eliminate dry start-ups, chirping or squeaking at low temperatures, and reduces wear in high wear applications.

Typical Industrial Applications:
- Impregnating Lubricant
- Appliances
- Automotive Parts
- Business Machines
- Power Tools
- Sound Equipment Applications

Performance Benefits:
- Very low evaporation rate for longest life
- Widest useful temperature range
- Excellent oxidation stability, no deposits
- Outstanding film strength, better than other synthetics
- Built-in non-sling, non-drip characteristics
- Resists “pumping”
- Assured reliability under adverse conditions of temperature, time, wear and oxidation
- Syntroils fortified with graphite: Containers should be mixed before opening or using for even dispersement

TYPICAL PROPERTIES	TEST METHOD	Syntroil 220	Syntroil 330	Syntroil 440	Syntroil 440	Syntroil 555
Viscosity @ 40°C,cSt	ASTM D445	32.0	64.7	73.6	74	122
Viscosity @ 100°C,cSt	ASTM D445	6.8	11.7	12.3	12.6	13.8
Viscosity Index	ASTM D2270	150	147	165	176	110
Flash Point, °C/°F	ASTM D92	219/425	232/450	243/470	243/470	282/540
Pour Point, °C/°F	ASTM D97	-57/-70	-51/-60	-46/-50	-45/-50	-34/-30
Temperature Range, F	---	-60 to 400	-50 to 430	-40 to 450	-30 to 525	-30 to 525
Evaporation Loss, %	ASTM D972	0.11	0.10	0.13	---	---
Lbs./Gal.	---	8.35	8.40	8.39	---	---
Specific Gravity	ASTM D1298	1.002	1.008	1.005	8.09	8.09

OMNILUBE® 60, 100, and 180

SYNTHETIC PLASTICS COMPATIBLE IMPREGNATING LUBRICANTS

Applications:
Omnilube 60 & 100 are fully synthetic lubricants designed specifically for use in powder metal sleeve bearings operating at cold ambient conditions. They are suited for use in refrigerator frost free fan motors that must operate at cold temperatures, and yet protect the bearing as bearing and shaft temperatures increase.

Omnilube 180 was developed specifically for powder metal bearings in electric motors where compatibility with plastics such as polystyrene or other plastic material is required. This premium lubricant is typical of all Ultrachem® Impregnating Oils in their cleanliness, longevity, wide useful temperature range and low volatility. The Omnilube product line should be evaluated for cost effectiveness where silicone fluids have been employed or the use of plastic materials has been restricted due to lubricant incompatibility.

Typical Industrial Applications:
- Impregnating Lubricant
- Refrigerator Frost Free Motors
- Electric Motors

Performance Benefits:
- Compatible with many plastics we have tested, including several polystyrene and Noryl compounds
- Inhibited to prevent oxidation
- High viscosity index
- Extreme long life
- Non-gumming

Omnilube plastic compatible greases are also available.

TYPICAL PROPERTIES	TEST METHOD	Omnilube 60	Omnilube 100	Omnilube 180
Viscosity @ 40°C,cSt	ASTM D445	5.8	9.5	38.5
Viscosity @ 100°C,cSt	ASTM D445	1.8	2.7	6.2
Viscosity Index	ASTM D2270	152	129	122
Flash Point, °C/°F	ASTM D92	160/320	160/320	238/460
Pour Point, °C/°F	ASTM D97	-57/-70	-54/-65	-54/-65
Evaporation Loss, %	ASTM D972	6.2	4.8	1.8
Lbs./Gal.	---	6.65	6.67	6.91
Specific Gravity	ASTM D1298	0.801	0.801	0.80

OMNILUBE® 60 AR

SYNTHETIC PLASTICS COMPATIBLE IMPREGNATING LUBRICANT

Applications:
Omnilube 60 AR is a synthetic lubricant designed specifically for use in powder metal sleeve bearings operating at cold ambient conditions. It is designed for use in refrigerator frost free fan motors that must operate at cold temperatures, and yet protect the bearing as bearing and shaft temperatures increase. Omnilube 60 AR has a proprietary corrosion inhibitor that gives added protection during storage.

Typical Industrial Applications:
- Impregnating Lubricant
- Refrigerator Frost Free Motors
- Electric Motors

Performance Benefits:
- Compatible with many plastics we have tested, including several polystyrene and Noryl compounds
- Inhibited to prevent oxidation
- High viscosity index
- Extreme long life
- Non-gumming
- Fortified against corrosion and rust

Omnilube plastic compatible greases are also available.

TYPICAL PROPERTIES	TEST METHOD	Omnilube 60 AR
Viscosity @ 40°C,cSt	ASTM D445	5.8
Viscosity @ 100°C,cSt	ASTM D445	1.8
Viscosity Index	ASTM D2270	152
Flash Point, °C/°F	ASTM D92	160/320
Pour Point, °C/°F	ASTM D97	-57/-70
Evaporation Loss, %	ASTM D972	6.2
Lbs./Gal.	---	6.65
Specific Gravity	ASTM D1298	0.799

OMNILUBE® 180 AR

SYNTHETIC PLASTICS COMPATIBLE IMPREGNATING LUBRICANT

Applications:
Omnilube 180 AR was developed specifically for powder metal bearings in electric motors where compatibility with plastics such as polystyrene or other plastic material is required. This premium lubricant is typical of all Ultrachem® Impregnating Oils in their cleanliness, longevity, wide useful temperature range and low volatility. The Omnilube product line should be evaluated for cost effectiveness where silicone fluids have been employed or the use of plastic materials has been restricted due to lubricant incompatibility. Omnilube 180 AR has a proprietary corrosion inhibitor that gives added protection during storage.

Typical Industrial Applications:
- Impregnating Lubricant
- Refrigerator Frost Free Motors
- Electric Motors

Performance Benefits:
- Compatible with many plastics we have tested, including several polystyrene and Noryl compounds
- Inhibited to prevent oxidation
- High viscosity index
- Extreme long life
- Non-gumming
- Fortified against corrosion and rust

Omnilube plastic compatible greases are also available.

TYPICAL PROPERTIES	TEST METHOD	Omnilube 180 AR
Viscosity @ 40°C,cSt	ASTM D445	36
Viscosity @ 100°C,cSt	ASTM D445	6.1
Viscosity Index	ASTM D2270	116
Flash Point, °C/°F	ASTM D92	238/460
Pour Point, °C/°F	ASTM D97	-65/-85
Evaporation Loss, %	ASTM D972	1.8
Lbs./Gal.	---	6.91
Specific Gravity	ASTM D1298	0.80

OMNILUBE® 300 and 350

SYNTHETIC PLASTICS COMPATIBLE IMPREGNATING LUBRICANTS

Applications:
Omnilube 300 & 350 were developed specifically for powder metal bearings in electric motors where compatibility with plastics such as polystyrene or other plastic material is required. These premium fluids are typical of all Ultrachem Impregnating Oils in their cleanliness, longevity, wide useful temperature range and low volatility.

Omnilube 300G and 350G are formulated with the addition of colloidal graphite, which has been milled to an average particle size of 0.5 micron. These versions help eliminate dry startups, chirping or squeaking at low temperatures, and reduce wear in high wear applications. The graphite addition does not change the typical properties listed below.

Typical Industrial Applications:
- Impregnating Lubricant
- Electric Motors

Performance Benefits:
- Compatible with many plastics we have tested, including several polystyrene and Noryl compounds
- Inhibited to prevent rust and oxidation
- High viscosity index
- Extreme long life
- Non-gumming
- Omnilube 300G & 350G: Containers should be mixed before opening or using for evenly dispersement

Omnilube plastic compatible greases are also available.

TYPICAL PROPERTIES	TEST METHOD	Omnilube 300	Omnilube 350
Viscosity @ 40°C,cSt	ASTM D445	64.7	65.4
Viscosity @ 100°C,cSt	ASTM D445	9.1	11.4
Flash Point, °C/°F	ASTM D92	238/460	238/460
Pour Point, °C/°F	ASTM D97	-54/-65	-51/-60
Evaporation Loss, %	ASTM D972	0.31	0.30
Lbs./Gal.	---	6.95	6.97
Graphite Particle Sizes, average micron	---	0.5-1.0	0.5-1.0
Graphitic Carbon Content, %	---	0.3-0.5	0.3-0.5
Specific Gravity	ASTM D1298	0.834	0.837

OMNILUBE® 550 and 850

SYNTHETIC PLASTICS COMPATIBLE IMPREGNATING LUBRICANTS

Applications:
Omnilube 550 and 850 are heavier versions of our other Omnilubes. Compatible with a wide variety of plastics, they are designed for use in powder metal sleeve bearings, felts, wicks, and gears that require a more viscous fluid than Omnilube 100, 300, or 350.

Omnilube 550G is formulated with the addition of colloidal graphite, which has been milled to an average particle size of .5 micron. This version helps eliminate dry start-ups, chirping or squeaking at low temperatures, and reduces wear in high wear applications. Omnilube 850 is not available with graphite.

Typical Industrial Applications:
- Impregnating Lubricant
- Refrigerator Frost Free Motors
- Electric Motors

Performance Benefits:
- Compatible with many plastics we have tested, including several polystyrene and Noryl compounds
- Inhibited to prevent rust and oxidation
- High viscosity index
- Extreme long life
- Non-gumming
- Omnilube 550G: Containers should be mixed before opening or using for even dispersement

Omnilube plastic compatible greases are also available.

TYPICAL PROPERTIES	TEST METHOD	Omnilube 550	Omnilube 850	Omnilube 550G
Viscosity @ 40°C,cSt	ASTM D445	112.0	185	106.5
Viscosity @ 100°C,cSt	ASTM D445	16.4	21.7	15.7
Viscosity Index	ASTM D2270	160	160	157
Flash Point, °C/°F	ASTM D92	243/470	243/470	243/470
Pour Point, °C/°F	ASTM D97	-48/-55	-48/-55	-48/-55
Evaporation Loss, %	ASTM D972	0.2	0.1	0.2
Lbs./Gal.	---	7.00	6.99	7.00
Graphite Particle Sizes, average micron	---	---	---	0.5-1.0
Graphitic Carbon Content, %	---	---	---	0.3-0.5
Specific Gravity	ASTM D1298	0.84	0.84	0.85

OMNILUBE® NON-TOX 280, 370, and 520

SYNTHETIC FOOD GRADE IMPREGNATING LUBRICANTS

Applications:
Omnilube Non-Tox 520, 280, and 370 were developed specifically for use on and/or in machinery and motors where incidental contact with food is a possibility. These food grade lubricants are made only with ingredients found to be suitable for such contact by the USDA. These oils, like our other Omnilubes, are compatible with most plastics. The Omnilube Non-Tox Oils were the first synthetic impregnating oils developed to meet the USDA H-1 rating.

Typical Industrial Applications:
- Impregnating Lubricant
- Refrigerator Frost Free Motors
- Electric Motors
- Food Processing Applications

Performance Benefits:
- Compatible with many plastics we have tested, including several polystyrene and Noryl compounds
- Inhibited to prevent rust and oxidation
- High viscosity index
- Extreme long life
- Non-toxic
- Low evaporation
- Low pour points
- Complies with FDA 21 CFR 178.3570 H-1

Omnilube plastic compatible greases are also available.

TYPICAL PROPERTIES	TEST METHOD	Omnilube 280	Omnilube 370	Omnilube 520
ISO Viscosity Grade	ASTM D2422	68	100	32
Viscosity @ 40°C,cSt	ASTM D445	60	74	30
Viscosity @ 100°C,cSt	ASTM D445	9.51	10.9	6.26
Viscosity Index	ASTM D2270	140	142	168
Flash Point, °C/°F	ASTM D92	240/465	232/450	232/450
Pour Point, °C/°F	ASTM D97	-68/-90	-40/-40	-40/-40
Specific Gravity	ASTM D1298	0.827	0.838	0.840

SYNGEL 217

SYNTHETIC POWDER METAL BEARING MICROGEL

Applications:
The MicroGels take impregnating oils to a higher level of performance. The MicroGels are intended for use in the oil reservoir surrounding the bearing, allowing the synthetic impregnating oil suspended in the gel to migrate into the bearing providing extended bearing life. MicroGels contain no soap grease thickeners. These products are a gel form of the impregnating oil.

The SynGel series are MicroGels based on our Syntroil® impregnating oils and are intended for use in conjunction with powder metal bearings that have been impregnated with these same oils. Other MicroGels are available based on our Omnilube® plastic compatible impregnating lubricants.

Typical Industrial Applications:
- Impregnating Applications

Performance Benefits:
- Increased bearing service life
- Excellent thermal and oxidative stability
- Low evaporation rate
- Non-melting dropping point over 500°F
- Contains no petroleum or silicone oils
- Useful temperature range -40°F to 450°F

TYPICAL PROPERTIES	TEST METHOD	SynGel 217-1	SynGel 217-2
NLGI Grade	---	1	2
Dropping Point, °F	ASTM D2265	>500	>500
Oil Separation, 24 hrs. at 400°F, %	ASTM D6184	3.0	2.9
Normal Hoffman Bomb Oxidation 100 hrs. PSI loss 500 hrs. PSI loss	---	 1 2	 1 2
Base Oil	---	Synthetic	Synthetic
Base Oil Viscosity @ 40°C, cSt	ASTM D445	56.9	56.9
Base Oil Viscosity @ 100°C, cSt	ASTM D445	9.3	9.3
Gel, %		~4	~6
Flash Point, °C/°F	ASTM D92	288/550	288/550

OMNIGEL 60 and 300

SYNTHETIC POWDER METAL BEARING MICROGELS

Applications:
The MicroGels take impregnating oils to a higher level of performance. The MicroGels are intended for use in the oil reservoir surrounding the bearing, allowing the synthetic impregnating oil suspended in the gel to migrate into the bearing providing extended bearing life. MicroGels contain no soap grease thickeners. These products are a gel form of the impregnating oil.

The OmniGel series are MicroGels based on our Omnilube® plastic compatible oils and are intended for use in conjunction with powder metal bearings that have been impregnated with these same oils. Other MicroGels are available based on our Syntroil® series of powder metal bearing lubricants.

Typical Industrial Applications:
- Impregnating Applications

Performance Benefits:
- May dispense in excess of 40%
- Increased bearing service life
- Plastic compatibility
- Thermal stability
- Excellent oxidation resistance
- Increase or decrease flow of oil into bearing with choice of gel

TYPICAL PROPERTIES	TEST METHOD	OmniGel 60-1 & 60-2	OmniGel 300-1 & 300-2
Base Oil	---	Synthetic	Synthetic
Viscosity @ 40°C,cSt	ASTM D445	5.8	65
Viscosity @ 100°C,cSt	ASTM D445	1.9	9.1
Viscosity Index	ASTM D2270	152	125
Flash Point, °F	ASTM D92	320	>450
Evaporation 22 hrs.@210°F, %	ASTM D972	4.6	<0.4
Water Washout	ASTM D1264	Nil	Nil

ULTRAGEL 300

SYNTHETIC POWDER METAL BEARING MICROGEL

Applications:
The MicroGels take impregnating oils to a higher level of performance. The MicroGels are intended for use in the oil reservoir surrounding the bearing, allowing the synthetic impregnating oil suspended in the gel to migrate into the bearing providing extended bearing life.

UltraGel 300 is a MicroGel based on our Omnilube® 300 impregnating oil and is intended for use in conjunction with powder metal bearings that have been impregnated with this same oil. Other MicroGels are available based on our Syntroil® impregnating lubricants.

UltraGel 300 is formulated with a special thickener to help hold the oil near the bearing. UltraGel 300 should not be filtered and should be stirred well before impregnation or use. Impregnation should be carried out under vacuum conditions and the oil should be heated to approximately 175°F (80°C). Remove the excess oil via drip drying or centrifuging.

Typical Industrial Applications:
- Impregnating Applications

Performance Benefits:
- Increased bearing service life
- Superior oxidation stability and rust prevention
- Excellent resistance to water wash out
- Compatible with most elastomers and plastics
- Wide useful temperature range -50°C to 150°C

TYPICAL PROPERTIES	TEST METHOD	UltraGel 300
NLGI Grade	---	00
Color	Visual	Light yellow/Opaque
Structure	Visual	Semi-fluid
Evaporation, 22 hrs. at 210°F, %	ASTM D6184	<0.4
Thickener	---	Aluminum Complex Soap
Base Oil	---	Synthetic Hydrocarbon (PAO)
Base Oil Viscosity @ 40°C, cSt	ASTM D445	65.4
Base Oil Viscosity @ 100°C, cSt	ASTM D445	11.2
Copper Corrosion	ASTM D130	1b
Rust Protection	ASTM D1743	#1 no rust
Flash Point, °F	ASTM D92	460
Specific Gravity	ASTM D1298	0.84

CHEMLUBE® PAG SERIES

SYNTHETIC IMPREGNATING LUBRICANTS

Applications:
The Chemlube PAG Series of synthetic lubricants are formulated from premium polyalkylene glycol (PAG) base oils. These impregnating fluids offer improved load carrying ability over petroleum, PAO and ester based fluids. The Chemlube PAG Series give a 12 stage load rating in the FZG gear test versus a 6 to 8 stage load rating for other synthetic fluids. They are compatible with most plastics and will break down cleanly at high temperatures. They do not leave gummy deposits that can affect performance.

Typical Industrial Applications:
- Impregnating Lubricant
- Appliances
- Automotive Parts
- Business Machines
- Electric Motors

Performance Benefits:
- Excellent oxidative and thermal stability
- Reduced sludge and deposit formation
- Good rust resistance
- Wide temperature range
- Good rubber compatibility

TYPICAL PROPERTIES	TEST METHOD	PAG 62	PAG 90	PAG 128	PAG 180	PAG 650
Viscosity @ 40°C,cSt	ASTM D445	62	90	128	180	130
Viscosity @ 100°C,cSt	ASTM D445	11	17.5	23.1	31	21.9
Viscosity Index	ASTM D2270	178	217	201	201	195
Flash Point, °C/°F	ASTM D92	288/550	290/555	293/560	293/560	293/560
Pour Point, °C/°F	ASTM D97	-44/-48	-42/-44	-39/-38	-39/-38	-39/-38
Specific Gravity	ASTM D1298	0.99	0.99	1.00	1.00	1.00

Caution: Not compatible with petroleum oils, synthetic hydrocarbons, and greases

PNEU MIST® 325 & PNEU MIST® 5075

SYNTHETIC LUBRICANTS FOR AIR LINE LUBRICATORS

Applications:
Pneu Mist 325 and 5075 are 100% premium synthetic air line lubricators. Pneu Mist 325 is FDA rated H-2 and designed for use at ambient and higher temperatures. Pneu Mist 5075 is designed for use in "cold room" applications. Pneu Mist 325 and 5075 are superior in eliminating downtime due to lubrication failure and sludge or varnish build-up when used in accordance with equipment manufacturers' recommendations.

Typical Industrial Applications:
- Pneumatic Equipment
- Pneumatic Systems
- Pneumatic Tools

Performance Benefits:
- Atomizes completely in all line lubricators
- Fully synthetic
- Prevents formation of gum, sludge, and varnish
- Dissolves oxidation products remaining from petroleum lubricants
- Prevents rust, prevents wear
- Minimizes downtime and saves maintenance dollars
- Compatible with plastics and synthetic rubber
- Keeps O-rings and seals soft
- Pneu Mist 325: USDA H-2 authorized

Pneu Mist is not compatible with petroleum-based lubricants and should not be mixed. All systems should be as free of petroleum as possible.

TYPICAL PROPERTIES	TEST METHOD	Pneu Mist 325	Pneu Mist 5075
ISO Grade	ASTM D2422	100	32
SAE Grade	SAE J-300	50	20
Viscosity @ 40°C,cSt	ASTM D445	87.3	32.9
Viscosity @ 100°C,cSt	ASTM D445	15.2	7.1
Viscosity Index	ASTM D2270	184	187
Flash Point, °C/°F	ASTM D92	232/450	213/415
Pour Point, °C/°F	ASTM D97	-37/-35	-48/-55
Lbs./Gal.	---	8.1	8.2
Specific Gravity	ASTM D1298	0.97	0.98

ASSEMBLY FLUID® #1

NATIONAL STOCK # 9150-00-159-5012

Applications:
Assembly Fluid #1 is designed to hold small parts in place during the assembly of complex mechanical assemblies. Assembly Fluid #1 is utilized for precision military applications as well as commercial applications. This fluid does not contain anti-wear additives and will completely dissolve in lubricants and hydraulic fluids leaving no residue. Using greases or materials not designed for this type of use will leave contaminants behind. Assembly Fluid #1 can be used in place of Mobil RT-403-C. Assembly Fluid #1 is an approved O-Ring lubricant.

Minimum Order:
Domestic 12 tubes
Export 24 tubes

Typical Industrial Applications:
- Military Precision Assemblies
- Engine Assemblies
- Turbine Assemblies
- Transmission Assemblies
- Pump Assemblies
- Complex Mechanical Assemblies
- Commercial Assemblies

Performance Benefits:
- Engineered tackiness provides best hold power
- Compatible with petroleum lubricants
- Compatible with synthetic lubricants, including MIL-L07808 and MIL-L-23699
- Compatible with hydraulic fluids
- Compatible with most elastomers and other seal materials, please test with seal material before use
- Nominal shelf life is 3 years from date of manufacture when stored in a dry, clean area in a sealed container

TYPICAL PROPERTIES	TEST METHOD	Assembly Fluid #1
Viscosity @ 100°C, cSt	ASTM D445	1300
Appearance	Visual	Honey colored, clear, tacky
Flash Point, °C/°F	ASTM D3278	120/248
Pour Point, °C/°F	ASTM D97	-7/25
Lbs./Gal.	---	7.6
Specific Gravity	ASTM D1298	0.91

CHEMLUBE® 5103

SYNTHETIC COMPRESSOR/AIR BRAKE LUBRICANT

Applications:
Chemlube 5103 is formulated from premium synthetic base oils and was developed for use in compressor / air brake systems. Chemlube 5103 has been tested and approved by Knorr-Bremse AG (Knorr Brake Corporation).

Typical Industrial Applications:
- Compressor / Air Brake Systems

Performance Benefits:
- Long life, low evaporation rate
- Excellent oxidation stability
- Fortified for anti-wear
- Minimal deposit formation
- Wide temperature range
- Approved by Knorr Brake

TYPICAL PROPERTIES	TEST METHOD	Chemlube 5103
ISO Grade	ASTM D2422	68
SAE Grade	SAE J300	10W-30
Viscosity @ 40°C,cSt	ASTM D445	57.2
Viscosity @ 100°C,cSt	ASTM D445	10.8
Viscosity Index	ASTM D2270	184
Flash Point, °C/°F	ASTM D92	193/380
Pour Point, °C/°F	ASTM D97	-10/14
Auto Ignition Temperature, °F	ASTM E659	407/765
Evaporation, %	ASTM D972	0.3
Total Acid Number, mg KOH/gm	ASTM D664	0.1

SYNTHOGRIND

SYNTHETIC GRINDING LUBRICANT

Applications:
Synthogrind is a grinding fluid made from an extremely pure synthetic polyalphaolefin (PAO). This fluid is designed to have excellent thermal stability and will yield a very long life when used in conjunction with well filtered grinding operations. A state of the art additive system allows Synthogrind to out-perform mineral oil-based and other polyalphaolefin (PAO)-based grinding fluids. A longer wheel life and better surface finish are obtained using Synthogrind versus using non-synthetic grinding fluids.

Typical Industrial Applications:
- Grinding Operations

Performance Benefits:
- Very low odor and very light color
- Excellent oxidative and thermal stability
- Compatible with hoses, seals, and plastic parts
- High lubricity leads to reduced burn marks
- Low toxicity

TYPICAL PROPERTIES	TEST METHOD	Synthogrind
Viscosity @ 40°C,cSt	ASTM D445	5.5
Viscosity @ 100°C,cSt	ASTM D445	1.8
Viscosity @ -40°C,cSt	ASTM D445	260
Flash Point, °C/°F	ASTM D92	155/311
Pour Point, °C/°F	ASTM D97	-65/-85
Specific Gravity	ASTM D1298	0.81

CHEMLUBE® 1102

SYNTHETIC PRECISION METAL LUBRICANT

Applications:
Chemlube 1102 is a fully synthetic lubricant for precision metals to give longer life to parts and assemblies. Chemlube 1102 will prevent the discoloration of brass.

Typical Industrial Applications:
- Electrical Contacts
- Stamping and Forming Precious Metals, i.e. copper, brass
- High Speed Spindles
- Slitting Knives
- Rolling Dies
- Small Assemblies

Performance Benefits:
- Excellent oxidation stability
- Non-gumming and non-staining
- Long life protection for dies, detail parts, and assemblies
- Excellent Lubricity
- Temperature range, -65 to 350°F

TYPICAL PROPERTIES	TEST METHOD	Chemlube 1102
Viscosity @ 40°C,cSt	ASTM D445	12.5
Viscosity @ 100°C,cSt	ASTM D445	3.4
Viscosity Index	ASTM D2270	151
Flash Point, °C/°F	ASTM D92	218/425
Pour Point, °C/°F	ASTM D97	-62/-80
Fire Point, °C/°F	ASTM D92	235/455
Evaporation, %	ASTM D972	0.03
Neutralization No.	---	0.2
Sediment	---	Nil
Lbs./Gal.	---	7.64
Specific Gravity	ASTM D1298	0.917

CHEMLUBE® 10, 22, & 46

HIGH SPEED SYNTHETIC LUBRICANTS

Applications:
Chemlube 10, 22, and 46 are 100% pure synthetic oils intended for use high speed machinery and as a textile ring lubricant in spinning, twisting and draw-twisting operations. These lubricants are also very effective in the lubrication of air tools. Chemlube 10, 22 and 46 are made from premium diester- based oils that will significantly reduce temperatures, noise, and energy usage.

Typical Industrial Applications:
- Spinning Frame Bolsters
- Sewing Machines
- Knitting Machines
- Textile Ring Lubricant
- Air Tools
- High Speed Machine Tools

Performance Benefits:
- Reduced KW pull means electric bill savings typically in the 4-6% range
- Significant temperature reductions
- Reduction in noise level typically between 2 and 6 dBA
- Extended drain intervals averaging a 6-8X increase
- Elimination of sludging and varnishing - natural detergency
- Low evaporation rates - lasts longer
- High degree of oxidation and thermal stability
- Reduced downtime and maintenance costs
- Wide temperature range, permits fast start-ups on cold days

TYPICAL PROPERTIES	TEST METHOD	Chemlube 10	Chemlube 22	Chemlube 46
ISO Grade	ASTM D2422	10	22	46
SAE Grade	SAE J-300	5W	10W	20W
Viscosity @ 40°C,cSt	ASTM D445	9.1	29.5	40.1
Viscosity @ 100°C,cSt	ASTM D445	2.7	4.3	7.8
Viscosity Index	ASTM D2270	147	131	169
Flash Point, °C/°F	ASTM D92	213/415	213/415	213/415
Pour Point, °C/°F	ASTM D97	-68/-90	-54/-65	-46/-50
Lbs./Gal.	---	7.7	7.3	7.3
Specific Gravity	ASTM D1298	0.926	0.872	0.873

CHEMLUBE® 10E, 22E, & 46E

HIGH SPEED SYNTHETIC LUBRICANTS

Applications:
Chemlube 10E, 22E, and 46E are pure synthetic diester oils intended for use high speed machinery and as a textile ring lubricant in spinning, twisting and draw-twisting operations. These lubricants are also very effective in the lubrication of air tools. Chemlube 10E, 22E and 46E are emulsifiable which makes them more easily cleaned from yarns, fabrics, etc. than non-emulsifiable oils.

Typical Industrial Applications:
- Spinning Frame Bolsters
- Sewing Machines
- Knitting Machines
- Textile Ring Lubricant
- Air Tools
- High Speed Machine Tools

Performance Benefits:
- Emulsifiable
- Reduced KW pull means electric bill savings typically in the 4-6% range.
- Significant temperature reductions
- Reduction in noise level typically between 2 and 6 dBA
- Extended drain intervals averaging a 6-8X increase
- Elimination of sludging and varnishing - natural detergency
- Low evaporation rates - lasts longer
- High degree of oxidation and thermal stability
- Reduced downtime and maintenance costs
- Wide temperature range, permits fast start-ups on cold days
- Caution: May affect some paint finishes, plastics and seals

TYPICAL PROPERTIES	TEST METHOD	Chemlube 10E	Chemlube 22E	Chemlube 46E
ISO Grade	ASTM D2422	10	22	46
SAE Grade	SAE J-300	5W	10W	20W
Viscosity @ 40°C,cSt	ASTM D445	9.1	29.5	40.1
Viscosity @ 100°C,cSt	ASTM D445	2.7	4.3	7.8
Viscosity Index	ASTM D2270	147	150	130
Flash Point, °C/°F	ASTM D92	204/400	210/410	249/480
Pour Point, °C/°F	ASTM D97	-62/-80	-54/-65	-46/-50
Fire Point, °C/°F	ASTM D92	229/445	227/440	268/515
Lbs./Gal.	---	7.7	7.3	7.3
Specific Gravity	ASTM D1298	0.926	0.872	0.873

CHEMLUBE® BF2 and BF6

SYNTHETIC BARRIER FLUIDS

Applications:
Chemlube BF2 and BF6 are formulated with premium polyalphaolefin (PAO) base oils to obtain fluidity at low temperatures and oxidative stability at high temperatures. These NSF approved barrier fluids will lubricate and cool the seal face of double and tandem mechanical seals. Chemlube BF2 and BF6 do not contain additives or impurities that may poison or negatively affect process fluids or catalysts. These barrier fluids are not for use with EPDM or EPR elastomers. They are compatible with most other commonly used seal materials.

Typical Industrial Applications:
- Barrier Fluid
- Food Processing (H-1)

Performance Benefits:
- Low pour point
- Excellent oxidation stability
- Complies with FDA 21 CFR 178.3570 H-1

TYPICAL PROPERTIES	TEST METHOD	Chemlube BF2	Chemlube BF6
Viscosity @ 40°C,cSt	ASTM D445	5	31
Viscosity @ 100°C,cSt	ASTM D445	1.7	5.9
Viscosity Index	ASTM D2270	---	138
Flash Point, °C/°F	ASTM D92	157/315	235/455
Pour Point, °C/°F	ASTM D97	-59/-74	-54/-65
Specific Gravity	ASTM D1298	0.80	0.82

ULTRACHEM® R-AB SERIES

REFRIGERATION LUBRICANTS

Applications:
Ultrachem R-AB Series are high performance fully synthetic refrigeration compressor oils specially designed to meet the stringent requirements of most modern refrigeration and air conditioning systems from major equipment manufacturers. These oils are formulated from the highest quality dialkyl benzene base fluids and provide excellent protection against oxidation degradation, wear and rust & corrosion. Ultrachem R-AB oils are specifically designed for refrigeration systems using non-hydroflurocarbon refrigerants such as R-11, R-12, R-13B1, R-22, R-113, R-500, R-501, R-502, R-717 (Ammonia – NH_3).

Typical Industrial Applications:
- Refrigeration Compressors
- Air Conditioning Compressors

Performance Benefits:
- Excellent wear and rust protection resulting in reduced maintenance costs and longer equipment life
- Low pour point
- Superior thermo-oxidative stability controls deposits in evaporator tubes, improves heat transfer and improves oil life resulting in improved equipment reliability, availability and efficiency
- Excellent high temperature and chemical stability
- Compatible with materials of construction and elastomers commonly used in the refrigeration system

TYPICAL PROPERTIES	TEST METHOD	R-AB 15	R-AB 32	R-AB 46	R-AB 68	R-AB 100
ISO Grade	ASTM D2422	22	32	46	68	100
Viscosity @ 40°C,cSt	ASTM D445	16	32	43	60	92
Floc Point, °C/°F	ASH-86	-65/-85	-65/-85	-60/-76	-55/-67	-55/-67
Flash Point, °C/°F	ASTM D92	130/266	175/347	185/365	185/365	170/338
Pour Point, °C/°F	ASTM D97	-40/-40	-40/-40	-35/-31	-30/-22	-30/-22
Total Acid Number, mg KOH/g	ASTM D974	0.01	0.02	0.02	0.02	0.02
Moisture, ppm (low temp. miscibility, 10% oil, °C)	ASTM D1533	30	30	30	30	30
Dielectric, KV - Min	ASTM D877	40	40	40	40	40
Specific Gravity	ASTM D1298	---	---	---	0.87	0.87

ULTRACHEM R-POE SERIES

POE REFRIGERATION LUBRICANTS

Applications:
Ultrachem R-POE Series are synthetic lubricants based on high performance polyol ester (POE) technology. This series has been designed specifically for use in demanding refrigeration systems and is compatible with both HCFC and HFC refrigerants including R-134a. These lubricants are available in a range of ISO 22 to ISO 220.

Typical Industrial Applications:
- Refrigeration Compressors
- Air Conditioning Compressors

Performance Benefits:
- Compatible with hydrochlorofluorocarbon (HCFC) & hydrofluorocarbon (HFC) refrigerants
- Suitable for use with R-134a, R-407C, and R-410A
- Greater biodegradability than mineral oils and alkyl benzene based oils

TYPICAL PROPERTIES	TEST METHOD	RPOE 22	RPOE 32	RPOE 46	RPOE 68	RPOE 100	RPOE 150	RPOE 220
ISO Grade	ASTM D2422	22	32	46	68	100	150	220
Viscosity @ 40°C,cSt	ASTM D445	23.5	31.6	47.1	64.9	95.7	148	221.3
Viscosity @ 100°C,cSt	ASTM D445	4.7	5.6	7.0	8.3	10.6	14.1	18.1
Viscosity Index	ASTM D2270	120	115	105	96	93	91	88
Flash Point, °C/°F	ASTM D92	252/486	250/482	258/496	256/493	271/520	279/534	254/489
Pour Point, °C/°F	ASTM D97	-59/-74	-55/-67	-43/-45	-39/-38	-34/-29	-27/-17	-28/-18
Total Acid Number, mg KOH/g	ASTM D974	0.02	0.02	0.03	0.02	0.02	0.01	0.03
Moisture, ppm (low temp. miscibility, 10% oil, °C)	ASTM D1533	32	22	33	18	20	25	27
R-134a		<-50	<-50	<-50	<-35	<-35	<-50	<-50
R-407C		<-35	<-35	<-35	<-35	<-18		
R-410A		<-40	<-45	<-40	<-30	<-15		
Refractive Index @ 20 °C	ASTM D1218	1.45	1.45	1.45	1.45	1.45	1.45	1.45
Density	ASTM D4052	8.35	8.21	8.14	8.07	8.07	8.06	8.02
Specific Gravity	ASTM D1298	1.00	0.99	0.97	0.97	0.97	0.96	0.96

ULTRA-ICE SERIES

SYNTHETIC REFRIGERATION LUBRICANTS

Applications:
The Ultra-Ice Series are synthetic refrigeration lubricants formulated with premium polyalkylene glycol (PAG) base oils. The Ultra-Ice Series are designed for a wide variety of automotive aftermarket air conditioning applications with R-134A. It is important in automotive air conditioning systems that the lubricant has adequate solubility in the refrigerant (R-134A). PAG lubricants were chosen for use in all new R-134A systems and are further recommended by all major car manufacturers for use when retrofitting R-12 vehicles with R-134A. Our state-of-the-art additive technology allows us to blend premium quality PAG refrigeration oils with outstanding solubility and stability.

Ultra-Ice 100 SS is formulated to provide enhanced seal swell performance.

Typical Industrial Applications:
- Automotive Air Conditioning Applications

Performance Benefits:
- Extremely low pour points
- High viscosity index
- Low evaporation rates
- Excellent anti-wear properties
- Good rubber compatibility
- Reduced sludge and deposit formation
- Exceptional oxidative and thermal stability

TYPICAL PROPERTIES	TEST METHOD	Ultra-Ice 46	Ultra-Ice 100	Ultra-Ice 150	Ultra-Ice 100 SS
ISO Grade	ASTM D2422	46	100	150	100
Viscosity @ 40°C,cSt	ASTM D445	47	100	154	97
Viscosity @ 100°C,cSt	ASTM D445	9.3	17.9	26.3	18.6
Viscosity Index	ASTM D2270	186	198	208	213
Flash Point, °C/°F	ASTM D92	227/440	227/440	227/440	227/440
Pour Point, °C/°F	ASTM D97	-37/-35	-37/-35	-37/-35	-37/-35
FZG, load stage	ASTM D5182	>12	>12	>12	>12
Copper Corrosion	ASTM D130	1b	1b	1b	1b
Turbine Oil Rust Test	ASTM D665	Pass	Pass	Pass	Pass
Specific Gravity	ASTM D1298	0.99	0.98	0.99	0.98

CHEMLUBE® SAE 30 and SAE 40

DIESTER-BASED MOTOR OIL

Applications:
Chemlube SAE 30 and Chemlube SAE 40 are premium synthetic motor oils formulated from premium diester base oils. These high quality motor oils have the ability to 'wet' metal surfaces because of the polar characteristics of the premium diester and has a natural detergency to eliminate varnishing and sludge build-up.

Performance Benefits:
- Longer engine life based on higher film strength when compared to conventional petroleum oil
- Easy starting at cold temperatures
- High viscosity index
- Low pour point
- High temperature range
- Reduced drain intervals including less disposal cost

TYPICAL PROPERTIES	TEST METHOD	Chemlube SAE 30	Chemlube SAE 40
SAE Grade	SAE J-300	30	40
Viscosity @ 210°F	ASTM D445	11.6	15.3
Viscosity @ 100°F	ASTM D445	67.7	108
Viscosity Index	ASTM D2270	167	149
Flash Point, °C/°F	ASTM D92	232/450	235/455
Pour Point, °C/°F	ASTM D97	-51/-60	-40/-40
Weight %			
Sulfur	---	0.90	0.90
Phosphorous		0.13	0.13
Zinc		0.14	0.14
Calcium		0.15	0.15
Nitrogen		0.04	0.04
Magnesium		0.04	0.04
Lbs./Gal.	---	7.76	7.65
Specific Gravity	ASTM D1298	0.92	0.92

CHEMLUBE® 10W-30, 10W-40, 10W-50 and 20W-50

SYNTHETIC BLEND DIESTER-BASED MOTOR OILS

Applications:
Chemlube 10W-30, 10W-40, 10W50 and 20W-50 are multi-grade premium motor oils formulated from a premium synthetic diester blend. These superior motor oils are recommended for light duty diesel (API CF) and gasoline engines wherever API SN and ILSAC GF-5 is required. Chemlube 20W-50 is recommended when a heavier synthetic motor oil is needed.

Performance Benefits:
- Low evaporation rate resulting in up to 50% reduction in oil consumption
- Great combination of sub-zero starting ease with a proven 30F cooling effect on the hottest days
- Film strength exceeds all premium mineral oil based lubricants resulting in minimal wear
- Full compatibility with mineral oil

TYPICAL PROPERTIES	TEST METHOD	Chemlube 10W-30	Chemlube 10W-40	Chemlube 10W-50	Chemlube 20W-50
SAE Grade	SAE J-300	10W-30	10W-40	10W-50	20W-50
Viscosity @ 40°C,cSt	ASTM D445	53.6	67.8	95.4	107.8
Viscosity @ 100°C,cSt	ASTM D445	9.8	12.5	16.63	17.9
Viscosity Index	ASTM D2270	180	193	189	185
Flash Point, °C/°F	ASTM D92	234/454	223/434	228/444	228/444
Pour Point, °C/°F	ASTM D97	-45/-49	-42/-43	-41/-42	-44/-43
Weight %					
Calcium		0.214	0.214	0.214	0.214
Nitrogen		0.102	0.102	0.102	0.102
Zinc		0.085	0.085	0.085	0.085
Phosphorus		0.077	0.077	0.077	0.077
Molybdenum, ppm		79	79	79	79
Specific Gravity	ASTM D1298	0.87	0.87	0.90	0.90

ULTRA DEGREASER

INDUSTRIAL DEGREASER

Applications:
Ultra Degreaser is an environmentally sound alternative to many industrial cleaner/degreasers. This water based liquid alkaline cleaner comes ready-to-use. Ultra Degreaser dries completely and residue free after rinsing, and is not hazardous, does not add to in-plant volatile organic compounds, is nonflammable, and does not emit fumes or objectionable odors. It passes the EPA's Chronic Toxicity Test and will not harm marine shrimp or fresh water tadpole eggs.

May be applied manually, by spray or pressure spray, or ultrasonics. Excellent for use on cleaning exterior grease and deposits from air compressors. May be used in parts washers, but will foam if agitated excessively.

Performance Benefits:
- Non-flammable
- Pleasant odor
- Superior in performance to citrus products
- More readily biodegradable than citrus
- Environmentally safe
- Excellent rinsability
- Phosphate free
- Biodegradable surfactants

Caution: ! Not for use inside compressors or coolers. !
! Do not use on aluminum at elevated temperatures.
– This product is alkaline and may harm non-ferrous metals. !

TYPICAL PROPERTIES	TEST METHOD	Ultra Degreaser
Flash Point, °F	ASTM D92	>190° (tag CC)
Foaming Tendency	---	High
Odor	---	Pleasant
Color	---	Clear with slight blue tint
Lbs./Gal.	---	8.6
Specific Gravity	ASTM D1298	1.03

ULTRA-DESCALER

BIODEGRADABLE WATER SCALE CLEANER

Applications:
An inhibited, low foaming mineral acid compound for removing hard water scale, lime, rust and other oxides. This product is designed to be used as a competitive product to Rydlyme®, Sublime® and other similar products.

Ultra-Descaler is designed to remove hard water scale from industrial equipment such as boilers, heat exchange units, water cooled compressors and connecting pipe lines. This version is more pleasant to handle because it fumes less and smells better than competitive products. Yet it can be diluted with water by as much as 50% for performance similar to competitive products above. Hard water scale is removed down to the base metal with no scraping or rodding needed. It also removes metal oxides, such as rust from ferrous metal equipment and ferrous stock metal. Ultra-Descaler is suitable for use in USDA federally inspected meat and poultry facilities for descaling heat exchangers.

Ultra-Descaler is compounded with inhibitors, surfactants, defoaming agents, various diluted acids, a pleasant cover scent and a dye to help differentiate it from other materials. It contains no toxic creosols or other tar oils that require SARA title III, Section 313 reporting.

Be certain to read and understand the application procedure on the reverse of this sheet prior to using Ultra-Descaler.

ULTRA-DESCALER

BIODEGRADABLE WATER SCALE CLEANER

Typical Properties:

Composition	Water based solvent containing wetting agents, corrosion inhibitors, and degreasing compounds.
Appearance	Brown in color
Odor	Scented—Fruity
Specific gravity	1.02—1.04
Bulk density	8.67 lbs./gal.
Viscosity	Water-like
Flash point	None
Hydroscopic Tendency	None
Foaming Tendency	Slight (controlled)
Solubility in Water	Complete
Hard Water Tolerance	Dissolves hard water salts
Rinsibility	Good (hot or cold, as long as surface is not allowed to dry first)
Phosphate free	Yes
Biodegradable Surfactants	Yes
Working Concentration	50% by volume with water to “as is”
Working Temperature	Ambient
Effect on metals	None on copper base metal, but removes oxide; deteriorates aluminum, zinc, and magnesium at various rates at full concentration.
pH	2.0

APPLICATION PROCEDURE:

For Descaling: Ultra-Descaler may be diluted as desired for use between by 50% volume with water to full strength for heavy accumulation of hard-water scale. It may be used at room temperature. Note that not all hard-water scale is identical in composition. If results attained using Ultra-Descaler are not as expected, submit a sample to our lab for testing and further recommendations.

When charging an enclosed system, Ultra-Descaler should be introduced gradually through a bottom inlet so that all cavities will be filled without forming gas pockets. Air pressure should be released until the system is full of the descaling solution. Provision must be made to vent gases formed during the descaling process. A vent hose or line should be attached to the top outlet of the equipment and led to a safe area where there are no open flames or sparks, or any possible contact with personnel.

Solution Control: Titrate solutions each half-hour to the point where two or more successive titrations show no further drop in solution strength. DO NOT mix or contact with chlorine release agents or anionic surfactants. Read MSDS before using. The simplest method is to use litmus paper.

ULTRA-DESCALER

BIODEGRADABLE WATER SCALE CLEANER

APPLICATION PROCEDURE:

Completion: Drain descaling solution and follow with a thorough water rinse and thorough neutralization.

Holding tanks of Ultra-Descaler solutions should be constructed of polyethylene, or other acid proof material.

RECIRCULATING: Use only acid resistant or expendable pumps. Recirculate intermittently (1 minute on and 10 minutes off) at a slow speed to avoid scouring the inhibitor film off the base metal.

SAFETY & HANDLING: Ultra-Descaler is corrosive when concentrated. Direct contact causes burns of skin and eyes. It is harmful if swallowed or inhaled. Use with adequate ventilation. Wear safety goggles, rubber gloves and other suitable protective clothing. Use of a respirator is recommended to avoid breathing vapor or mist.

FIRST AID: Eyes-flush with water for a minimum of 15 minutes (industry standard) separating eyelids with fingers. Get immediate medical attention. Skin-wash with soap and water. Ingestion- Do not induce vomiting. Drink water, Milk of Magnesia. Seek medical attention. Inhalation- Move to fresh air.

KEEP OUT OF REACH OF CHILDREN. PLEASE READ AND UNDERSTAND THE MATERIAL SAFETY DATA SHEET FOR THIS MATERIAL PRIOR TO USE.

PACKAGING: 5 gal. poly pail—Net Wt: 48# 330 gal. IBC tote – Net Wt: 3,000# 55 gal. poly drum – Net Wt: 500#

SHIPPING: Ultra-Descaler may be shipped under the following D.O.T. Classification: Class 65—Compounded cleaning liquid. Tariff Code—3402.90.50--30

HMIS INDEX: Health: 1 Flammability: 0 Reactivity: 1

STORAGE: Store container in a cool, dry location. Protect from possibility of physical damage from impact by fork trucks and other heavy equipment. To avoid injury, loosen bung slowly to relieve any pressure buildup. Keep container closed when not in use.

DISPOSAL: Neutralize solutions with spent alkaline material, lime or soda ash, dilute and discharge in accordance with federal, state and local regulations. Some regulations may allow disposal down drains once product is neutralized. However, some product may contain metal residues that may not be allowed down drains.

CHEMLUBE® 812 SERIES

WIRE ROPE LUBRICANTS

Applications:
The Chemlube 812 Wire Rope Series is a line of specially formulated synthetic lubricants enhanced with the latest in additive technology. They can "wet" metal surfaces easily and have outstanding penetration ability. This series meet the lubrication requirements for mine, marine, metallurgy and construction uses. Consistent application will greatly prolong the rope life. The lubricant's polar film will adhere to and protect the metal surfaces for an extended length of time.

Typical Industrial Applications:
- Marine and Offshore Wire Ropes
- Logging Wire Ropes
- Mining Wire Ropes
- Cranes & Hoists

Performance Benefits:
- Totally wets, penetrates, and covers the metal surfaces
- Superior corrosion protection
- Readily repels salt and water from the metal surfaces
- Excellent oxidation protection
- No deposits, making it easy to inspect the rope
- Wide operating range -15°C to 50°C
- High flash point
- Strong adhesive film
- Hard particles do not adhere to rope

TYPICAL PROPERTIES	TEST METHOD	Chemlube 812-68	Chemlube 812-150	Chemlube 812-460
ISO Grade	ASTM D2422	68	150	460
Viscosity @ 40°C,cSt	ASTM D445	69.6	152.9	463
Viscosity @ 100°C,cSt	ASTM D445	10.6	14.9	30.8
Viscosity Index	ASTM D2270	140	97	96
Flash Point, °C/°F	ASTM D92	224/435	227/440	233/450
Pour Point, °C/°F	ASTM D97	-42/-44	-36/-33	-21/-6
Rust Prevention	ASTM D665	Pass	Pass	Pass
Load Wear Index	ASTM D2783	---	---	56.5
Last Non-Seizure Load, kg (scar. mm)	---	---	---	63 (0.36)
Last Seizure Load, kg (scar, mm)	---	---	---	315 (1.92)
Weld Load, kg	---	---	---	400
Specific Gravity	ASTM D1298	0.88	0.89	0.88

CHEMLUBE® GUN, REEL & HOBBY OIL

SYNTHETIC MULTI-PURPOSE OIL

Applications:
This is an excellent all-purpose oil for use in a variety of hobby applications. Compatible with most plastics, this product is great for use on guns, fishing reels, model trains, and many other applications where a little drop of oil is necessary to keep those small motors functioning at optimum levels.

Typical Industrial Applications:
- Fishing Reels
- Model Trains
- Remote Control Vehicles
- Sewing Machines
- Guns
- Small Tools

Performance Benefits:
- Light viscosity for outstanding low temperature actuation
- High viscosity index, less change with temperature
- Low evaporation rate for long life
- Excellent oxidation stability – non-gumming
- Wide useful temperature range, -65°F to 300°F

TYPICAL PROPERTIES	TEST METHOD	Chemlube Gun, Reel & Hobby Oil
Viscosity @ 40°C,cSt	ASTM D445	31
Viscosity @ 100°C,cSt	ASTM D445	5.9
Viscosity Index	ASTM D2270	135
Flash Point, °C	ASTM D92	230
Pour Point, °C	ASTM D97	-65
Lbs./Gal.	---	6.92
Specific Gravity	ASTM D1298	0.83

ULTRACHEM AIR TOOL 22

AIR TOOL LUBRICANT

Applications:
Ultrachem Air Tool 22 lubricant is an air tool lubricant specifically designed to provide superior lubrication for rotary and reciprocating types of air tools. Application is done by feeding the lubricant directly through an air line lubricator or by applying oil directly into the air tool through quick-coupling air line connections.

Typical Industrial Applications:
- Air Motors
- Impact Wrenches
- Grinders
- Reamers
- Drills
- Chipping Hammers

Performance Benefits:
- Compatible with petroleum oils and PAO's
- Designed specifically for air tools
- Protects against rust
- Provides wear protection
- Formulated for improved stability

TYPICAL PROPERTIES	TEST METHOD	Ultrachem Air Tool 22
ISO Grade	ASTM D2422	22
Viscosity @ 40°C,cSt	ASTM D445	22.9
Viscosity @ 100°C,cSt	ASTM D445	4.1
Viscosity Index	ASTM D2270	77
Flash Point, °C/°F	ASTM D92	194/380
Pour Point, °C/°F	ASTM D97	-40/-40
Specific Gravity	ASTM D1298	0.86

ULTRACHEM INC
PREMIUM SYNTHETIC LUBRICANTS

ABSORBALL OIL/WATER CONDENSATE SEPARATORS

The reduction of pollution and effluent is of vital concern in today's industrial environment. The consequence of unlawful pollution or contamination affects us all in the future of our environment and the way we run our businesses. Ultrachem has helped develop the **absorbALL** family of oil/water condensate separators to help businesses meet local, state and federal regulations while profitably reducing the amount of effluent generated from their compressed air systems.

Ultrachem has five models of our successful oil/water separators that are useful as an add-on system to your current air compressor system. These **absorbALLs** will remove the excess oil from the large amount of water generated when air is compressed. In many cases, reducing the oil to levels below 100 ppm will allow the remaining water to be disposed of in a sanitary sewer. Your local sewer district can help supply guidelines on local regulations.

Our many years of manufacturing air compressor oils with a variety of petroleum and synthetic formulations gives Ultrachem unique experience in being able to separate the oils from the water. The **absorbALLs** may be successfully used with any oil currently used in an industrial air compressor application.

ABSORBALL FEATURES

Automatic–No electricity or heat required to work. Units should not be placed in an area where it is likely to freeze.

Energy Efficient–No moving parts.

No Bacteria–No stagnant water means no bacteria buildup. Avoid the use of oil/water separators that incorporate large settling tanks, as they can generate harmful bacteria or molds due to stagnate water.

Built-in Depressurization Chamber–Use with autodrains, timer controlled drains, intelligent drains or manual drains. Will accept blowdown pressures to 250 psi in most cases.

Safe–Thermal units heat condensate and release harmful vapors into the air, use energy, and cost many times more to purchase and maintain.

Easy Model Sizing–Sizing is based on the cfm output of the compressors. Selection of the appropriate poly-element bag is based on the chemistry of the oil. If the compressor is using a PAG (polyglcol type coolant) then there is an element bag specifically for that type of oil and the cfm rating for each unit is reduced. We have found that large reciprocating compressors, particularly double-acting recips., generally send more oil downstream which results in a shorter bag life; as the bags con only absorb so much oil. There is no need to worry about diminished capacity with humidity increases

System Expansion–In many cases the **Model 750** and **1250** allow for increases in capacity for the future. Adding on the **absorbALL Extender** can double the capacity. The **Extender** may be positioned to the front or side.

UPS & FedEx Shipping–The smaller **Enviro** and the **Model 520** easily ship by UPS or FedEx.

HOW ABSORBALLS WORK

The absorbALLs utilize a unique patented poly-element filter that acts as the primary filter to remove and absorb the bulk of the oil in the condensate. Different poly-elements treated with different proprietary chemicals are used for polyglycol (PAG) coolants.

The condensate then moves through a carbon filter media that acts as a polishing stage and removes all oil down to 20 ppm. The life of the filters is directly related to the amount of the oil in the condensate.

MODELS & PART NUMBERS

ENVIRO

Part #	Model	Description
9501	Enviro	65 cfm
95011		Charcoal Bag & Poly Bag

MODEL 520

Part #	Model	Description
9509	520	300 cfm
9509-P	520 w/PAG Bag	200 cfm
95092	Regular Poly Bag	White Kit
95045	Polyglycol (PAG) Bag	
95093	Charcoal Bag	Black Kit

MODEL 750

Part #	Model	Description
9512	750	750 cfm
9512-P	750 w/ PAG Bag	500 cfm
95122	Regular Poly Bag	White Kit
95125	Polyglycol (PAG) Bag	
95123	Charcoal Bag	Black Kit

MODEL 1250

Part #	Model	Description
9510	1250	1250 cfm
9510-P	1250 w/PAG Bag	1000 cfm
95102	Regular Poly Bag	White Kit
95105	Polyglycol (PAG) Bag	
95103	Charcoal Bag	Black Kit

EXTENDER

Part #	Model	Description
9511	Extender	Additional 1250 cfm
95113	Charcoal Bag	Black Kit

ULTRACHEM INC
PREMIUM SYNTHETIC LUBRICANTS

ULTRACHEM INC.

900 CENTERPOINT BLVD. PHONE: 302-325-9880
NEW CASTLE, DE 19720 FAX: 302-325-0335

6/23/2008 Rev. 10 3/11/11

Replacement Bags

Air Systems Products	Bag No.		Ult. Bag No.
Filter Bags			
AS15	ASP-CE15	1 Charcoal Bag	JASPCE15
AS30	ASP-CE30	1 Charcoal Bag	JASPCE30
AS60	ASP-CE60	2 Charcoal Bags	JASPCE60
AS120	ASP-CE120	4 Charcoal Bags	2 each JASPCE60
AS180	ASP-CE180	6 Charcoal Bags	3 each JASPCE60
AS240	ASP-CE240	8 Charcoal Bags	4 each JASPCE60
CE20	PS20/CE20	1 Charcoal Bag	JCE20
CE40	PS40/CE40	1 Charcoal Bag	JCE40
CE90		2 Charcoal Bags	2 each JCE40
Expansion Chamber Elements			
AS15	ASP-EC05	1 each	JC05
AS30	ASP-EC08	1 each	JC08
AS60	ASP-EC08	1 each	JC08
AS120	ASP-EC08	3 each	3 each JC08

Replacement Bags

	Bag No.		Ult. Bag No.
AS180	ASP-EC08	4 each	4 each JC08
AS240	ASP-EC08	5 each	5 each JC08
Separation Filters			
AS15	ASP-SF-1	1 each	JF1
AS30	ASP-SF2	1 each	JF2
AS60	ASP-SF2	1 each	JF2
AS120	ASP-SF2	2 each	2 each JF2
AS180	ASP-SF2	3 each	3 each JF2
AS240	ASP-SF2	4 each	4 each JF2
Airtek	Bag No.		Ult. Bag No.
OWS15	ASP-CE15	1 Charcoal Bag	JASPCE15
OWS30	ASP-CE30	1 Charcoal Bag	JASPCE30
OWS60	ASP-CE60	2 Charcoal Bags	JASPCE60
OWS120	ASP-CE120	4 Charcoal Bags	2 each ASPCE60
OWS180	ASP-CE180	6 Charcoal Bags	3 each JASPCE60
OWS240	ASP-CE240	8 Charcoal Bags	4 each JASPCE60
Beko	Bag No.		Ult. Bag No.
Owamat 1	XVKT02AF1	1 Pre-filter / Charcoal Bag	9201
Owamat 2	XVKT02AF1	1 Pre-filter / Charcoal Bag	9201
Owamat 4	XVKT04AF1	1 Pre-filter / Charcoal Bag	9203

Replacement Bags

	Bag No.			Ult. Bag No.
Owamat 5R	XVKT5RAF1	1 Pre-filter & 1 Charcoal Bag		9205
Owamat 6	XVKT06AF2	1 Pre-filter & 2 Charcoal Bags		9206
Owamat 8	XVKT08AF2	1 Pre-filter & 2 Charcoal Bags		9207
Owamat 9		1 Pre-filter & 2 Charcoal Bags		9208
Owamat 20		1 Charcoal Bag		9209
Champion				Ult. Bag No.
M3543		1 Charcoal Bag		JASPCE15
M3547		1 Charcoal Bag		JASPCE30
M3549		2 Charcoal Bags		JASPCE60
Domnick Hunter	New Style	Old Style		Ult. Bag No.
ES2100	ESMK1	ES10	1 Charcoal Bag & 1 pre-filter	9281
ES2150	ESMK1		1 Charcoal Bag & 1 pre-filter	9281
ES2200	ESMK1	ES20	1 Charcoal Bag & 1 pre-filter	9281
ES2300	ESMK2	ES30	1 Charcoal Bag & 1 pre-filter	9281
ES2400	ESMK2	ES40	2 Charcoal Bags & 2 pre-filters	2 each 9281
ES2500	ESMK3	ES50	1 Charcoal Bag & 1 pre-filter	9284
ES2600	ESMK3	ES60	2 Charcoal Bags & 2 pre-filters	2 each 9284
Vent Filter	ESV-F1			9299
Vent Filter	ESV-F2			9298
Flair	Bag No.			Ult. Bag No.
OWS150	15FCE	1 Charcoal Bag		JASPCE15

Replacement Bags

	Bag No.		Ult. Bag No.
OWS300	30FCE	1 Charcoal Bag	JASPCE30
OWS600	60FCE	2 Charcoal Bags	JASPCE60
OWS1200	120FCE	4 Charcoal Bags	2 each JASPCE60
OWS1800	180FCE	6 Charcoal Bags	3 each JASPCE60
OWS2400	240FCE	8 Charcoal Bags	4 each JASPCE60
Finite	Bag No.		Ult. Bag No.
Filter Bags			
OWS75	AC75	1 Charcoal Bag & 1 pre-filter	
OWS150	AC150	1 Charcoal Bag & 1 pre-filter	9231
OWS250	AC250	1 Charcoal Bag & 1 pre-filter	9233
OWS500	AC500	2 Charcoal Bags & 1 pre-filter	9234
OWS100	AC1000	2 Charcoal Bags & 1 pre-filter	9235
Foam Service Kits			
OWS75			UFSK5
OWS150/250			UFSK7.5/10/15
OWS500			UFSK30
OWS1000			UFSK60
Hankison			Ult. Bag No.
HSMK-1		1 Charcoal Bag	9260
HSMK-2		1 Charcoal Bag +1E********	9261

Replacement Bags

	Bag No.		Ult. Bag No.
HSMK-3		1 Charcoal Bag +1E********	9261
HSMK-4		1 Charcoal Bag +1E*********	9261
HSMK-5		1 Charcoal Bag & 1 pre-filter +1E*******	9262
HSMK-6		2 Charcoal Bags & 1 pre-filter +1E******	9263
HSMK-7		4 Charcoal Bags & 2 pre-filters +1E****	9264
		**********Exhaust Filter	
Gardner Denver	Bag No.		Ult. Bag No.
	7002506	1 Charcoal Bag	JASPCE15
	7024375	1 Charcoal Bag	JASPCE30
	7024377	2 Charcoal Bags	JASPCE60
	2X7024377	4 Charcoal Bags	2XJASPCE60
	3X7034377	6 Charcoal Bags	3XJASPCE60
	4X7024377	8 Charcoal Bags	4XJASPCE60
	7002506	1 Charcoal Bag	JCE20
	2116860	1 Charcoal Bag	JCE40
	2116861	2 Charcoal Bags	2 each JCE40
Model #CTS15	7024364	O/W Separator Maintenance Kit	9401
		Kit includes: (1) JASPCE15 JASP150 Carbon Element (1) J-ASP-SF1 AS15 Separation Filter (1) J-ASP-EC05 AS 15 Expansion Chamber Element (1) JCTS-15 Pre-Absorp JCTS-15 Pre-Absorption Pad	

Replacement Bags

	Bag No.		Ult. Bag No.
Model #CTS30	7024365	O/W Separator Maintenance Kit	9402
		Kit includes: (1) JASPCE30 = JAS 30 Carbon Element (1) J-ASP-EC08 = AS30/60 Exp Chamber Element (1) J-ASP-SF2 = AS30/60 Separation Filter (1) JCTS-30 Pre-Absorp	
Model #CTS60	7024366	O/W Separator Maintenance Kit	9403
		Kit includes: (2) JASPCE30 = JAS 30 Carbon Element (1) J-ASP-EC08 = AS30/60 Exp Chamber Element (1) J-ASP-SF2 = AS30/60 Separation Filter (1) JCTS-60 Pre-Absorp Pad	
Kaeser (Old)	Bag No.		Ult. Bag No.
Filter Bags			
MK-75			9230
MK-150	CMS-150	1 Charcoal Bag & 1 Pre-filter	9231
MK-260	CMS-260	1 Charcoal Bag & 1 Pre-filter	9233
MK-520	CMS-520	1 Charcoal Bag & 1 Pre-filter	9234
MK-2060	CMS-1060	2 Charcoal Bags & 1 pre-filter	9235
MK-2060D	CMS-1060D	4 Charcoal Bags & 2 pre-filters	9236
MK-2060Q	CMS-1060Q	8 Charcoal Bags & 4 pre-filters	9237
Kaeser (Current)	Bag No.		Ult. Bag No.
Aquamat 1	Aqua1fltr	1 Pre-filter / Charcoal Bag	9201
Aquamat 2	Aqua2fltr	1 Pre-filter / Charcoal Bag	9201

Replacement Bags

	Bag No.		Ult. Bag No.
Aquamat 3	Aqua4fltr	1 Pre-filter / Charcoal Bag	9203
Aquamat 5R	Aqua5Rfltr		9205
Aquamat 6	Aqua6fltr	1 Pre-filter & 2 Charcoal Bags	9206
Aquamat 8	Aqua8fltr	1 Pre-filter & 1 Charcoal Bag	9207
Foam Service Kits			
MK-75			UFSK5
MK-150/260			UFSK7.5/10/15
MK-520			UFSK30
MK-1060			UFSK60
OWS-500			9286 + 9292
OWS-1000			2 Ea. 9286 + 9292
Quincy	Bag No.		Ult. Bag No.
Filter Bags			
QIOW 0005	331154		9230
QIOW 0010	330821		9231
QIOW 0015	330831		9233
QIOW 0030	330841		9234
QIOW 0060	330851		9235
QIOW 0120	330861		9236
QIOW 0240			9237

Replacement Bags

	Bag No.		Ult. Bag No.
Foam Service Kits			
330876			UFSK5
330877/330878			UFSK7.5/10/15
330879			UFSK30
330880			UFSK60
Summit ConDePhase Plus Unit	Bag No.		Ult. Bag No.
CDP Plus 15	CDP Plus 15	1 Charcoal pail	CK-003
CDP Plus 30	CDP Plus 30	1 Charcoal pail	CK-005
Ultra Filter	Bag No.		Ult. Bag No.
Filter Bags			
Super Plus 5			9230
Super Plus 10	A-SP 10	1 Charcoal Bag & 1 pre-filter	9231
Super Plus 15	A-SP 15	1 Charcoal Bag & 1 pre-filter	9233
Super Plus 30	A-SP 30	2 Charcoal Bags & 1 pre-filter	9234
Super Plus 60	A-SP 60	2 Charcoal Bags & 1 pre-filter	9235
Super Plus 120	A-SP 120	4 Charcoal Bags & 2 pre-filters	9236
Super Plus 240	A-SP 240	8 Charcoal Bags & 4 pre-filters	9237
Foam Service Kits			
UFS 5			UFSK5
USF 10/15			UFSK7.5/10/15
UFS 30			UFSK30
USF 60			UFSK60

Replacement Bags

Wortman/Motivair	Bag No.	Kit Contents	Ult. Bag No.
Drukomat 1/ OSW 01	OSK-1	1 Charcoal Bag	9260
Drukomat 2-15/ OSW 02	OSK-2	1 Charcoal Bag + 1E*	9261
Drukomat 2-15/ OSW 03	OSK-2	1 Charcoal Bag +1E*	9261
Drukomat 2-15/ OSW 04	OSK-2	1 Charcoal Bag +1E*	9261
Drukomat 2-15/ OSW 05	OSK-5	1 Charcoal Bag & 1 pre-filter +1E*	9262
Drukomat 30/ OSW 06	OSK-6	2 Charcoal Bags & 1 pre-filter +1E*	9263
Drukomat 60/ OSW 07	OSK-7	4 Charcoal Bags & 2 pre-filters +1E*	9264
OSW 08	OSK-8	6 Charcoal Bags & 3 pre-filters +1E*	9265
		*Exhaust Filter	
Zander (Ecosep)			
New Style Units			
SL100		1 Charcoal Bag & 1 pre-filter	9281
SL150		1 Charcoal Bag & 1 pre-filter	9281
SL200		1 Charcoal Bag & 1 pre-filter	9281
SL300		1 Charcoal Bag & 1 pre-filter	9281
SL400		2 Charcoal Bags & 2 pre-filters	2 each 9281
SL500		1 Charcoal Bag & 1 pre-filter	9284
SL600		2 Charcoal Bags & 2 pre-filters	2 each 9284
SL100/SL150/SL200	ESK1	Oil/Water Separator Maintenance Kit	ZMK9421
		Kit includes: (1) Part # 9281 - (1) Charcoal Bag and (1) Pre-Filter (1) Part #9299 - (1) Vent Filter	

Replacement Bags

Zander (Ecosep)	Bag No.	Main Filter	Ult. Bag No.
Old Style Units			
WT5	WTCMF5	1 Charcoal Bag	9280
WT1	WTCMF10	1 Charcoal Bag	9287
WT10	WTCMF10	1 Charcoal Bag	9287
WT2	WTCMF	1 Charcoal Bag	9286
WT20	WTCMF20	2 Charcoal Bags	2 each 9288
WT3	WTCMF	2 Charcoal Bags	2 each 9286
WT30	WTCMF30	2 Charcoal Bags	2 each 9289
WT40	WTCMF20	1 Charcoal Bag	9288
WT50	WTCMF20	2 Charcoal Bags	2 each 9288

Zander (Ecosep)	Bag No.	Vent Filter	Ult. Bag No.
		MODEL	
	WTCVF5	WT5	9296
	WTCVF10	WT1	9291
	WTCVF10	WT10	9291
	WTCVF	WT2	9292
	WTCVF20	WT20	9292
	WTCVF	WT3	9292
	WTCVF30	WT30	9292
	WTCVF40	WT40	9294

Replacement Bags

	Bag No.		Ult. Bag No.
	WTCVF50	WT50	9294
	ZSLVF 2	SL300 to SL600	9298
	SLVF1	SL100, 150, 200	9299
	Bag No.	**Pre - Filter**	Ult. Bag No.
	WT-PFA		9297

ULTRACHEM INC

PREMIUM SYNTHETIC LUBRICANTS

CROSS-REFERENCE GUIDE

The Ultrachem, Inc. competitve cross-reference guide was developed to offer approximate product comparisons for competitve fluids in the market. This guide is intended to assist industry professionals in making a lubricant selection for a particular application. It is vital to machine performance and safety that the application be known and the OEM specification be investigated prior to making any lubricant recommendation. The information in this guide is, to the best of our knowledge, true and accurate. However, all recommendations are made without guarantee since the conditions of use are beyond our control.

It is never safe to assume that the product currently in use is the correct lubricant for the application. Please see OEM manuals for correct fluid recommendations and know the application prior to introducing Ultrachem products to your equipment.

Please contact your Ultrachem sales representative for more information.

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Addinol	Polygear PG 220	PAG / 220	**PGWS 220**
Addinol	Polygear PG 320	PAG / 320	**PGWS 320**
Addinol	Polygear PG 460	PAG / 460	**PGWS 460**
Addinol	Polygear PG 680	PAG / 680	**PGWS 680**
Amoco	972-0068-A000 /	Group II or III / 68	**NA**
Amoco	Amokon 32	Petroleum / 32	**32S**
Amoco	Amokon 68	Petroleum / 68	**68S**
Amoco	CD-50 Syn. Tran. Fluid	PAO /	**NA**
Amoco	FG 32	Mineral Oil (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Amoco	FG 68	Mineral Oil (H-1) / 68	**Omnilube 568, Omnilube 68***
Amoco	FG 100	Mineral Oil (H-1) / 100	**Omnilube 5131, Omnilube 455***
Amoco	Synthogear EP 220	PAO / 220	**Omnigear 220 EP**
Amoco	Synthogear EP 320	PAO / 320	**Omnigear 320 EP**
Amoco	Synthogear EP 460	PAO / 460	**Omnigear 460 EP**
Amoco	Sythnogear EP 680	PAO / 680	**Omnigear 680 EP**
Amoco	Syntholube SL 32	Diester / 32	**Chemlube 215**
Amoco	Syntholube SL 68	Diester / 68	**Chemlube 230**
Amoco	Syntholube SL 100	Diester / 100	**Chemlube 501**
Amoco	Syntholube SL 150	Diester / 150	**Chemlube 751**
Amoco	Ultimate Gear 75W-90	Synthetic Hydrocarbon / 75W-90	**Ultrachem 75W-90**
Anderol	Anderol 46 Supreme	PAO / 46	**Chemlube 228**
Anderol	Anderol 402	Diester /	**Chemlube 201**
Anderol	Anderol 456	Diester /	**Chemlube 207**
Anderol	Anderol 465	Diester / 68	**Chemlube 645**
Anderol	Anderol 495	Diester / 32	**Chemlube 215**
Anderol	Anderol 496	Diester / 46	**Chemlube 229**
Anderol	Anderol 497	Diester / 68	**Chemlube 230**
Anderol	Anderol 500	Diester / 100	**Chemlube 501**
Anderol	Anderol 555	Diester / 100	**Chemlube 501**
Anderol	Anderol 750	Diester / 150	**Chemlube 751**
Anderol	Anderol 755	Diester / 150	**Chemlube 751**
Anderol	Anderol 3032	PAO / 32	**Chemlube 221**
Anderol	Anderol 3046	PAO / 46	**Chemlube 228**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Anderol	Anderol 3068	PAO / 68	**Chemlube 268**
Anderol	Anderol 3100	PAO / 100	**Chemlube 627**
Anderol	Anderol 3150	PAO / 150	**Chemlube 629**
Anderol	Anderol 401D	Diester /	**Chemlube 201**
Anderol	Anderol 4032	PAO / 32	**Chemlube 624**
Anderol	Anderol 4046	PAO / 46	**Chemlube 625**
Anderol	Anderol 4068	PAO / 68	**Chemlube 626**
Anderol	Anderol 4100	PAO / 100	**Chemlube 627**
Anderol	Anderol 4150	PAO / 150	**Chemlube 629**
Anderol	Anderol 4220	PAO / 220	**Chemlube 630**
Anderol	Anderol 4320	PAO / 320	**Chemlube 320**
Anderol	Anderol 4460	PAO / 460	**Chemlube 634**
Anderol	Anderol 4680	PAO / 680	**Chemlube 636**
Anderol	Anderol 4999	PAO / 1000	**Chemlube 639**
Anderol	Anderol 5004	PAO / 100	**Omnigear 100 EP**
Anderol	Anderol 5005	PAO / 220	**Omnigear 220 EP**
Anderol	Anderol 5006	PAO / 460	**Omnigear 460 EP**
Anderol	Anderol 5150	PAO / 150	**Omnigear 150 EP**
Anderol	Anderol 5220	PAO / 220	**Omnigear 220 EP**
Anderol	Anderol 5320	PAO / 320	**Omnigear 320 EP**
Anderol	Anderol 5460	PAO / 460	**Omnigear 460 EP**
Anderol	Anderol 5680	PAO / 680	**Omnigear 680 EP**
Anderol	Anderol 6068	PAO (H-1) / 68	**Omnilube FGH 1068**
Anderol	Anderol 6100	PAO (H-1) / 100	**Omnilube FGG 1100**
Anderol	Anderol 6150	PAO (H-1) / 150	**Omnilube FGG 1150**
Anderol	Anderol 6220	PAO (H-1) / 220	**Omnilube FGG 1220**
Anderol	Anderol 6320	PAO (H-1) / 320	**Omnilube FGG 1320**
Anderol	Anderol 6460	PAO (H-1) / 460	**Omnilube FGG 1460**
Anderol	Anderol FGC-32 (was FGC – 10)	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Anderol	Anderol FGC-46 (was FGC – 20)	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Anderol	Anderol FGC-68 (was FGC – 30)	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Anderol	Anderol FGC-100 (was FGC – 40)	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Anderol	Anderol FGC–150	PAO (H-1) / 150	**Omnilube 640**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Anderol	Anderol FGH – 32	PAO (H-1) / 32	**Omnilube FGH 1032**
Anderol	Anderol FGH – 32	PAO (H-1) / 46	**Omnilube FGH 1046**
Anderol	Anderol FGH – 68	PAO (H-1) / 68	**Omnilube FGH 1068**
Anderol	Anderol FGH – 100	PAO (H-1) / 100	**Omnilube FGH 1100**
Anderol	Anderol PG Supreme 32	Polygylcol /	**Coolant 32 PE**
Anderol	Anderol PG Supreme 46	Polygylcol /	**Ultrachem Coolant PE**
Anderol	Anderol Premium Plus	Polyester / 46	**Chemlube 946**
Anderol	Anderol S 32	Semi-synthetic / 32	**32S**
Anderol	Anderol S 46	Semi-synthetic / 46	**46S**
Anderol	Anderol S 68	Semi-synthetic / 68	**68S**
Anderol	Anderol S 100	Semi-synthetic / 100	**100S**
Aral	Degol GS 220	PAG / 220	**PGWS 220**
Becker	FO-100	Flushing Oil - Ester / 100	**VPDE 100**
Becker	PS-100	PAO / 100	**VPSH 100**
Becker	SS-100	Semi-Synthetic / 100	**VPS3 100**
Behnke-Jax	Syncomp FG 32	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Behnke-Jax	Syncomp FG 46	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Behnke-Jax	Syncomp FG 68	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Behnke-Jax	Syncomp FG 100	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Bel Ray	No Tox Hy-Lo Grease	Calcium Sulfonate /	**Omnilube FGM 2**
Bel Ray	SC1 Syn Comp Lube 32	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Bel Ray	SC1 Syn Comp Lube 46	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Bel Ray	SC1 Syn Comp Lube 68	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Bel Ray	SC1 Syn Comp Lube 115	PAO (H-1) / 100/150	**Omnilube 640 or 5131**
Bel Ray	No-Tox Syntex 220	PAG / 220	**Omnilube PGG 220 FG**
Bel Ray	No-Tox Syntex 320	PAG / 320	**Omnilube PGG 320 FG**
Bel Ray	No-Tox Syntex 460	PAG / 460	**Omnilube PGG 460 FG**
BP	Energol SG-XP 220	PAO / 220	**PGWS 220**
Brehob	BC-4602	PAO / 46	**Chemlube 228**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Busch	R-530	Petroleum / SAE 30	**VP 100**
Busch	R-540	Petroleum / SAE 40	**VP 150**
Busch	R-580	Synthetic Hydrocarbon / SAE 20	**VPSH 46**
Busch	R-590	Hydrotreated Mineral Oil / SAE 30	**VPS3 100**
Camco	91-40 HT	46	**PS 46**
Camco	FMO 100	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Camco	FMO 150	PAO (H-1) / 150	**Omnilube 640**
Camco	FMO 32	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Camco	FMO 46	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Camco	FMO 68	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Champion	ChampLube	Petroleum / 100	**P-ACO 100**
Champion	ChampLube Synthetic	Diester / 100	**Chemlube 501**
Champion	Comp Clean II	Flush - Diester / 32	**Ultraclean**
Champion	RotorLub 4000	Semi-synthetic / 46	**46S**
Champion	RotorLub 4000 FG	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Champion	28H293 - 1 gal, 28H294 – 5 gal / RotorLub 8000	Semi-synthetic / 46	**Chemlube 228**
Chevron	GST 32	Petroleum / 32	**P-ACO 32**
Chevron	GST 46	Petroleum / 46	**P-ACO 46**
Chevron	GST 68	Petroleum / 68	**P-ACO 68**
Chevron	GST 100	Petroleum / 100	**P-ACO 100**
Chevron	Synthetic Compressor FM	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Chevron	Syntholube 32	Diester / 32	**Chemlube 215**
Chevron	Syntholube 68	Diester / 68	**Chemlube 230**
Chevron	Syntholube 100	Diester / 100	**Chemlube 501**
Chevron	Syntholube 150	Diester / 150	**Chemlube 751**
Chevron	Tegra Fluid C 32	PAO / 32	**Chemlube 221**
Chevron	Tegra Fluid C 68	PAO / 68	**Chemlube 268**
Chevron	Tegra Fluid C 100	PAO / 100	**Chemlube 627**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Citgo	632571001 / CITGear HT 68	PAO / 68	**Chemlube 626**
Citgo	632572001 / CITGear HT 100	PAO / 100	**Chemlube 627**
Citgo	632573001 / CITGear HT 150	PAO / 150	**Chemlube 629**
Citgo	632574001 / CITGear HT 220	PAO / 220	**Chemlube 630**
Citgo	632575001 / CITGear HT 320	PAO / 320	**Chemlube 632**
Citgo	632577001 / CITGear HT 460	PAO / 460	**Chemlube 634**
Citgo	632579001 / CITGear HT 680	PAO / 680	**Chemlube 636**
Citgo	632543001 / CITGear Syn. PAG 100	Polyglycol / 100	**PGWS 100**
Citgo	632544001 / CITGear Syn. PAG 150	Polyglycol / 150	**PGWS 150**
Citgo	632547001 / CITGear Syn. PAG 220	Polyglycol / 220	**PGWS 220**
Citgo	632548001 / CITGear Syn. PAG 320	Polyglycol / 320	**PGWS 320**
Citgo	632549001 / CITGear Syn. PAG 460	Polyglycol / 460	**PGWS 460**
Citgo	Clarion CG FG 32	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Citgo	Clarion CD FG 46	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Citgo	Clarion CG FG 68	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Citgo	CompKleen Synthetic Cleaner	Cleaner / 46	**Ultra-Solv**
Citgo	CompressorGard DE 32	Diester / 32	**Chemlube 215**
Citgo	CompressorGard DE 68	Diester / 68	**Chemlube 230**
Citgo	CompressorGard DE 100	Diester / 100	**Chemlube 501**
Citgo	CompressorGard GE 32	Glycol Ester / 32	**Coolant 32 PE**
Citgo	CompressorGard GE 46	Glycol Ester / 46	**Ultrachem Coolant PE**
Citgo	CompressorGard PAO 32	PAO / 32	**Chemlube 221**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Citgo	CompressorGard GE PAO 46	PAO / 46	**Chemlube 228**
Citgo	CompressorGard GE PAO 68	PAO / 68	**Chemlube 268**
CompAir	Air Lube 46	PAO / 46	**Chemlube 228**
CompAir	Air Lube DE 20	Diester / 68	**Chemlube 230**
CompAir	Air Lube DE 30	Diester / 100	**Chemlube 501**
CompAir	Air Lube DE 40	Diester / 150	**Chemlube 751**
CompAir	CN-300	Petroleum /	**P-ACO 68**
CompAir	Complube 10	46	**Chemlube Plus 10**
CompAir	159201, 159202 / CS-100	Diester / 32	**Chemlube 215**
CompAir	159204, 159205 / CS-200	Diester / 68	**Chemlube 230**
CompAir	74384, 74385 / CS-300	Diester / 100	**Chemlube 501**
CompAir	74387, 74388 / CS-400	Diester / 150	**Chemlube 751**
CompAir	CS-5000(XL)	Diester / 68	**Chemlube 230**
CompAir	CS-600 (RVL-5)	PAO/Ester Blend / 100	**Chemlube 501**
CompAir	CS-6000XLP	Diester / 68	**Chemlube 230**
CompAir	CSX-20 (Food)	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
CompAir	Hydrovane 2000 / Fluid Force Red	Diester / 100	**Chemlube 501**
CompAir	Fluid Force Red UK	Petroleum / 100	**P-ACO 100**
CompAir	Reavellite	Diester / 100	**Chemlube 501**
CompAir	Rosyn HE5000P	Diester / 68	**Chemlube 230**
Cognis	Emgard 2032	Diester / 32	**Chemlube 215**
Cognis	Emgard 2046	Diester / 46	**Chemlube 229**
Cognis	Emgard 2068	Diester / 68	**Chemlube 230**
Cognis	Emgard 2150	Diester / 150	**Chemlube 751**
Conoco	Syncon 32	PAO / 32	**Chemlube 221**
Conoco	Syncon 68	PAO / 68	**Chemlube 268**
Conoco	Syncon EP 68	PAO / 68	**Omnigear 68 EP**
Conoco	Syncon EP 220	PAO / 220	**Omnigear 220 EP**
Conoco	Syndustrial R&O 32	Diester / 32	**Chemlube 215**
Conoco	Syndustrial R&O 68	Diester / 68	**Chemlube 230**
Conoco	Syndustrial R&O 100	Diester / 100	**Chemlube 501**
Conoco	Syndustrial R&O 150	Diester / 150	**Chemlube 751**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Conoco	Syncon R&O Oil 32	PAO / 32	**Chemlube 624**
Conoco	Syncon R&O Oil 46	PAO / 46	**Chemlube 625**
Conoco	Syncon R&O Oil 68	PAO / 68	**Chemlube 626**
Conoco	Syncon R&O Oil 100	PAO / 100	**Chemlube 627**
Conoco	Syncon R&O Oil 150	PAO / 150	**Chemlube 629**
Conoco	Syncon R&O Oil 220	PAO / 220	**Chemlube 630**
Conoco	Syncon R&O Oil 320	PAO / 320	**Chemlube 632**
Conoco	Syncon R&O Oil 460	PAO / 460	**Chemlube 634**
Conoco	Syncon R&O Oil 680	PAO / 680	**Chemlube 636**
CPI	CP-1528-68	Polyglycol / 68	**PGWS 68**
CPI	CP-1528-100	Polyglycol / 100	**PGWS 100**
CPI	CP-1528-150	Polyglycol / 150	**PGWS 150**
CPI	CP-1528-220	Polyglycol / 220	**PGWS 220**
CPI	CP-4100-32	Diester / 32	**Chemlube 215**
CPI	CP-4100-68	Diester / 68	**Chemlube 230**
CPI	CP-4100-100	Diester / 100	**Chemlube 501**
CPI	CP-4100-150	Diester / 150	**Chemlube 751**
CPI	CP-4200-68	Diester / 68	**Chemlube 968**
CPI	CP-4201-46	Polyolester / 46	**Chemlube 946**
CPI	CP-4600-32F	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
CPI	CP-4600-46F	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
CPI	CP-4601-32	PAO / 32	**Chemlube 221**
CPI	CP-4601-46	PAO / 46	**Chemlube 228**
CPI	CP-4601-68	PAO / 68	**Chemlube 268**
CPI	CP-4601-100	PAO / 100	**Chemlube 627**
CPI	CP-4601-150	PAO / 150	**Chemlube 629**
CPI	CP-4624-68F	PAO(H-1) / 68	**Omnilube 568, Omnilube 68***
Curtis Toledo	VO 411 / RC 1000	Petroleum / 68	**P-ACO 68**
Curtis Toledo	VO 421 / RC 1000 A	Petroleum / 100	**P-ACO 100**
Curtis Toledo	VO 413 / RS 2000	Petroleum / 46	**P-ACO 46**
Curtis Toledo	VO 416 / RS 4000 FG	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Curtis Toledo	VO 414 / RS 8000	PAO / 46	**Chemlube 228**
Curtis Toledo	VO 422 / RS 12000	Polyol Ester / 46	**Chemlube 946**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
(Dekker Vacuum Technologies)	5220-0050-000 / Vmaxol	Petroleum / 22	**VP 22**
(Dekker Vacuum Technologies)	Duratex Synthetic Rotary Vane	PAO / 32	**Chemlube 221**
(Dekker Vacuum Technologies)	Duratex Synthetic Rotary Vane	PAO / 68	**Chemlube 268**
(Dekker Vacuum Technologies)	Duratex Synthetic Rotary Vane	PAO / 100	**Chemlube 299**
Dow	G4500	Aluminum complex /	**Omnilube FGM2**
Dow	G4500 Spray	Aluminum complex /	**Omnilube FGM2 Spray**
Dow	G4501	Aluminum /	**Omnilube FGM 1**
Dow	Molykote L-1201 FG	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Dow	Molykote L-1215 FG	PAO (H-1) / 150	**Omnilube 640**
Dow	Molykote L-1232 FG	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Dow	Molykote L-1246 FG	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Dow	Molykote L-1268 FG	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Dow	Molykote L-0115 FG	Mineral Oil (H-1) / 150	**Omnilube WO 90**
Dow	Molykote L-0122 FG	Mineral Oil (H-1) / 220	**Omnilube WO 90**
Dow	Molykote L-0346 FG	Mineral Oil (H-1) / 46	**Omnilube WO 46**
Dow	Molykote L-0460 FG	Mineral Oil (H-1) / 68	**Omnilube WO 68**
Dow	Molykote L-0532 FG	Mineral Oil (H-1) / 32	**Omnilube Air Line FG**
Dow	Molykote L-1115 FG	PAO (H-1) / 150	**Omnilube FGG 1150**
Dow	Molykote L-1122 FG	PAO (H-1) / 220	**Omnilube FGG 1220**
Dow	Molykote L-1146 FG	PAO (H-1) / 460	**Omnilube FGG 1460**
Dow	Molykote L-1168 FG	PAO (H-1) / 680	**Omnilube FGG 1680**
Dow	Molykote L-1246	PAO / 46	**Chemlube 228**
Dow	Molykote L-1246 FG	PAO (H-1) / 46	**Omnilube 546**
Dow	Molykote L-1428	POE /	**Chemlube 5073**
Dow	Molykote L-1668 FG	PAO/Mineral Oil (H-1) / 68	**Omnilube 568**
Dow	Molykote L-3232	PAG/POE / 32	**Coolant 32 PE**
Dow	Molykote L-3246	PAG/POE / 46	**Ultrachem Coolant PE**
Dow	Molykote Syn FG	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Dow	Molykote L-0246	Mineral Oil / 46	**P-ACO 46**
Dow	Molykote L-4646	POE / 46	**Chemlube 946**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Dresser	13106008 / Vac Pump	220	**Chemlube 630**
DuBois	FG-10	Mineral Oil (H-1) / 32	**Omnilube WO 32**
DuBois	FG-20	Mineral Oil (H-1) / 68	**Omnilube WO 68**
DuBois	FG-30	Mineral Oil (H-1) / 100	**Omnilube WO 100**
DuBois	FGG Grease	Calcium Sulfonate /	**Omnilube FGM 2**
DuBois	FGG-XHT Hi-Temp Grease	Calcium Sulfonate /	**Omnilube FGM 2**
DuBois	MPO 10	Petroleum polymer-fortified / 32	**32S**
DuBois	MPO 20	Petroleum polymer-fortified / 68	**68S**
DuBois	MPO 30	Petroleum polymer-fortified / 100	**100S**
DuBois	Summa 20	Diester / 46	**Chemlube 229**
DuBois	Summa Recip	Diester / 100	**Chemlube 501**
DuBois	Summa Rotar	Diester / 32	**Chemlube 215**
DuBois	Ultragard 100	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
DuBois	Ultragard 300	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Eaton	Eaton ECO-8000	PAO / 46	**Chemlube 228**
Exxon	Carum 330	Calcium Complex /	**Omnilube FGM 2**
Exxon	Spartan Syn. EP 150	PAO / 100	**Omnigear 150 EP**
Exxon	Spartan Syn. EP 220	PAO / 220	**Omnigear 220 EP**
Exxon	Spartan Syn. EP 460	PAO / 460	**Omnigear 460 EP**
Exxon	Spartan Syn. EP 680	PAO / 680	**Omnigear 680 EP**
Exxon	Synesstic 32	Diester / 32	**Chemlube 215**
Exxon	Synesstic 68	Diester / 68	**Chemlube 230**
Exxon	Synesstic 100	Diester / 100	**Chemlube 501**
Exxon	Synesstic 150	Diester / 150	**Chemlube 751**
Exxon	Terresstic SHP 32	PAO / 32	**Chemlube 624**
Exxon	Terresstic SHP 46	PAO / 46	**Chemlube 625**
Exxon	Terresstic SHP 68	PAO / 68	**Chemlube 626**
Exxon	Terresstic SHP 100	PAO / 100	**Chemlube 627**
Exxon	Terresstic SHP 220	PAO / 220	**Chemlube 630**
Exxon	Terresstic SHP 320	PAO / 320	**Chemlube 632**
Exxon	Terresstic SHP 460	PAO / 460	**Chemlube 634**
Exxon	Terresstic SHP 1000	PAO / 1000	**Chemlube 639**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Fuchs	Geralyn SF 100	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Fuchs	Geralyn SF 150	PAO (H-1) / 150	**Omnilube 640**
Fuchs	Geralyn SF 32	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Fuchs	Geralyn SF 46	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Fuchs	Geralyn SF 68	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Gardner Denver	28G19, 28G13 / Aeon 500	Petroleum / 100	**P-ACO 100**
Gardner Denver	28G7, 28G8 / Aeon 800	Petroleum / 32/46	**P-ACO 32 or P-ACO 46**
Gardner Denver	28G36, 28G37 / Aeon 2000	Semi-Synthetic / 32/46	**32S or 46S**
Gardner Denver	28H36, 28H57 / Aeon 4000	Semi-Synthetic / 46	**46S**
Gardner Denver	28G14, 28G15 / Aeon 5000	Diester / 100	**Chemlube 501**
Gardner Denver	28H39, 28H35 / Aeon 6000FG-46	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Gardner Denver	28H314,28H315 / Aeon 6000FG-68	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Gardner Denver	Aeon 8000	Diester / 68	**Chemlube 230**
Gardner Denver	28H109, 28H110 / Aeon 9000 SP	PAO / 46	**Chemlube 228**
Gardner Denver	28H270, 28H286 / Aeon 9000TH	PAO/Ester blend / 68	**Chemlube Plus 68**
Gardner Denver	28H217, 28H219 / Aeon AC-FG	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Gardner Denver	28H210, 28H211, 28H212, 28H213 / Aeon AC-HC	Petroleum / 100	**P-ACO 100**
Gardner Denver	28H214, 28H216 / Aeon AC-SY	Diester / 100	**Chemlube 501**
Gardner Denver	28H326, 28H327 / Aeon B30	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Gardner Denver	28H328, 28H329 / Aeon B40	PAO (H-1) / 150	**Omnilube 640**
Gardner Denver	28H102, 28H103 / Aeon Bio	POE / 46	**Chemlube 946**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Gardner Denver	28H287, 28H288 / Aeon CL	PAO / 46	**Chemlube 228**
Gardner Denver	28G23, 28G24, 28G25, 28G28 / Aeon PD	PAO / 220	**Synthetic PD Blower Oil**
Gardner Denver	Aeon PD-FG	PAO (H-1) / 220	**Omnilube FGG 1220**
Gardner Denver	Aeon PD-XD	PAO / 220	**Chemlube 632**
Gardner Denver	Aeon PG	Polyglycol/Ester / 46	**Ultrachem Coolant PE**
Gardner Denver	Aeon NG H10		**Chemlube NG Plus 100**
Gardner Denver	Comp Clean II	Flush - Diester / 32	**Ultraclean**
Grimmer Schmidt	GSL 8	PAO / 32	**Chemlube 221**
Ingersoll-Rand	39433719, 39433883 / FG Coolant	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Ingersoll-Rand	G-Cool	Polyglycol/Polyol Ester /	**Ultrachem Coolant PE**
Ingersoll-Rand	ISPS 46	PAO / 46	**Chemlube 228**
Ingersoll-Rand	OCV-Zero	Polyolester / 10	**Chemluve CV**
Ingersoll-Rand	36899698 / Pro-Tec	Severe Hydrotreated / 32	**Ultra-Tec**
Ingersoll-Rand	39236328 / Rotalube 1000	Petroleum / 46	**P-ACO 46**
Ingersoll-Rand	38245494, 38245502 / Silicone	Silicone /	**Platinum BTG**
Ingersoll-Rand	SL-200 (For oil free Sierra)	Petroleum / 46	**NA**
Ingersoll-Rand	39118294, 39118286 / SSR Coolant	Diester / 68	**Chemlube 230**
Ingersoll-Rand	39433735, 39433743, new 38459582 (replaces 39433735) / SSR Ultra Coolant	Polygylcol /	**Ultrachem Coolant PE**
Ingersoll-Rand	54772603, 54772611 / SSR Ultra Plus Coolant	Polyolester / 32	**Chemlube 932**
Ingersoll-Rand	39433883, 39433719 / SSR-H-1-F	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Ingersoll-Rand	32318875, 32318883 / T-30 Select	Diester / 100	**Chemlube 501**
Ingersoll-Rand	Centac Compressor / Techtrol Gold III	PAG/PE / 32	**Ultra Gold**
Ingersoll-Rand	38433116 / X-Tend FG Coolant	PAO (H-1) / 41	**Omnilube 32/46**
Ingersoll-Rand	22252050 / XHP-605	PAO-Ester / 68	**Chemlube Plus 68**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Ingersoll-Rand	XHP-505	PAO / 68	**Chemlube 626**
Ingersoll-Rand	XL-300	Petroleum / 100	**P-ACO 100**
Ingersoll-Rand	39161534, 39164526 / XL-700	Diester / 100	**Chemlube 501**
Ingersoll-Rand	39163266, 39163274 / XL-740HT	Diester / 150	**Chemlube 751**
JAX	Perma-Gear FG Fluids 220	PAG / 220	**Omnilube PGG 220 FG**
JAX	Perma-Gear FG Fluids 320	PAG / 320	**Omnilube PGG 320 FG**
JAX	Perma-Gear FG Fluids 460	PAG / 460	**Omnilube PGG 460 FG**
Inland	INL-45	Semi-Synthetic / 20	**VPSH 46**
Kaeser	325R	Diester / 32	**Chemlube 215**
Kaeser	466R	Diester / 46	**Chemlube 229**
Kaeser	687R	Diester / 68	**Chemlube 230**
Kaeser	Omega SB-320 Blower Lubricant	Grp III/PAO / 320	**Chemlube 632 or 732**
Kaeser	Omega 220B Blower Lubricant	Polyol Ester/PAO / 220	**Synthetic PD Blower Oil**
Kaeser	46-05, 46-55 / Sigma 8000 FG-460	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Kaeser	Sigma M-100	Petroleum / 100	**P-ACO 100**
Kaeser	Sigma M-150	Petroleum / 150	**P-ACO 150**
Kaeser	Sigma 8000 M-460	Group III w/ester / 46	**46S**
Kaeser	Sigma 8000 S-100	Diester / 100	**Chemlube 501**
Kaeser	150-S, 150-55 / Sigma S-150	Diester / 150	**Chemlube 751**
Kaeser	32-05, 32-55 / Sigma 8000 S-320	PAO / 32	**Chemlube 221**
Kaeser	46-05, 46-55 / Sigma 8000 S-460	PAO / 46	**Chemlube 228**
Kaeser	68-05, 68-55 / Sigma 8000 S-680	PAO / 68	**Chemlube 268**
Keystone	KSL 719	PAO / 68	**Chemlube 268**
Keystone	KSL 720	PAO / 46	**Chemlube 228**
Keystone	KSL 800	PAO / 46	**Chemlube 228**
Keystone	KSL Compressor 32	Diester / 32	**Chemlube 215**
Keystone	KSL Compressor 46	Diester / 46	**Chemlube 229**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Keystone	KSL Compressor 68	Diester / 68	**Chemlube 230**
Keystone	KSL Compressor 100	Diester / 100	**Chemlube 501**
Keystone	KSL Compressor 150	Diester / 150	**Chemlube 751**
Keystone	Nevastane SL 100	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Keystone	Nevastane SL 150	PAO (H-1) / 150	**Omnilube 640**
Keystone	Nevastane SL 32	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Keystone	Nevastane SL 46	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Keystone	Nevastane SL 68	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Kinney Vacuum Division	LR	Petroleum / 32	**VP 32**
Kinney Vacuum Division	Kinney AX Oil	Petroleum / 68	**VP-68**
Kluber	Alltime J 652	Ester / 60	**Chemlube 645**
Kluber	Constant Gly 2100	PAO /	**UltraGel 300-00**
Kluber	Hotemp Super N	PAO/Ester Blend / 260	**Chemlube FB**
Kluber	Kluberfood NH1 CHT 6-220	PAG / 220	**Omnilube PG 220 FG**
Kluber	Klubersynth GH 6-460	PAG / 460	**PGWS 460**
Kluber	Klubersynth HM 2-220	PAO/Ester Blend /	**N/A**
Kluber	Mikrozella G8 0Y	PAO /	**Omnigel 300**
Kluber	Mikrozella IP	Ester /	**Syngel 217-1 or Syngel 217-2**
Kluber	PARALIQ P 68 or P 100	Mineral Oil (H-1) / 68 - 100	**Omnilube WO 80**
Kluber	PARALIQ P 150	Mineral Oil (H-1) / 150	**Omnilube WO 90**
Kluber	PARALIQ P 460	Mineral Oil (H-1) / 460	**Omnilube WO 460**
Kluber	Klubersynth UH1 6 Oils 220	PAG / 220	**Omnilube PGG 220 FG**
Kluber	Klubersynth UH1 6 Oils 320	PAG / 320	**Omnilube PGG 320 FG**
Kluber	Klubersynth UH1 6 Oils 460	PAG / 460	**Omnilube PGG 460 FG**
Kluber	Synthesso HT	PAG / 220	**PGWS 220**
LeRoi	204-1461-5, 204-1461-55 / Cleaner	Flush - Diester / 32	**Ultraclean**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
LeRoi	204-1924-5, 204-1924-55 / CompLube10	PAO/Ester / 46	**Chemlube Plus 10**
LeRoi	SSL-32	Petroleum / 32	**P-ACO 32**
LeRoi	204-1368-5,204-1368-55 / SSL-35 F	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
LeRoi	SSL-38	Petroleum / 46	**PS 46**
LeRoi	204-1092-5 204-1092-55 / SSL-46	PAO / 46	**Chemlube 228**
LeRoi	SSL-46 Plus	PAO / 46	**Chemlube 228**
LeRoi	204-1584-5 204-1584-55 / SSL-50	Partial Synthetic / 46	**46S or PS46**
Lubricants USA (FINA)	Vestan Syn. C.O. 100	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Lubricants USA (FINA)	Vestan Syn. C.O. 150	PAO (H-1) / 150	**Omnilube 640**
Lubricants USA (FINA)	Vestan Syn. C.O. 32	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Lubricants USA (FINA)	Vestan Syn. C.O.46	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Lubricating Specialties	Syncom FG 32	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Lubricating Specialties	Syncom FG 46	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Lubricating Specialties	Syncom FG 68	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Lubrication Engineers	4046	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Lubrication Engineers	9032	PAO / 32	**Chemlube 221**
Lubrication Engineers	9068	PAO / 68	**Chemlube 268**
Lubrication Engineers	9100	PAO / 100	**Chemlube 627**
Lubrication Engineers	9150	PAO / 150	**Chemlube 629**
Lubriplate	L0704 / AC-0 (was AC-32)	Petroleum / 32	**PACO 32**
Lubriplate	L0705 / AC-1 (was AC-46)	Petroleum / 46	**PACO 46**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Lubriplate	L0706 / AC-2 (was AC-68)	Petroleum / 68	**PACO 68**
Lubriplate	L0915 / SFGO Ultra-32	PAO (H-1) / 32	**Omnilube FGH 1032**
Lubriplate	L0916 / SFGO Ultra-46	PAO (H-1) / 46	**Omnilube FGH 1046**
Lubriplate	L0917 / SFGO Ultra-68	PAO (H-1) / 68	**Omnilube FGH 1068**
Lubriplate	L0983 / SFGO Ultra-100	PAO (H-1) / 100	**Omnilube FGG 1100**
Lubriplate	L0984 / SFGO Ultra-150	PAO (H-1) / 150	**Omnilube FGG 1150**
Lubriplate	L0985 / SFGO Ultra-220	PAO (H-1) / 220	**Omnilube FGG 1220**
Lubriplate	L0986 / SFGO Ultra-320	PAO (H-1) / 320	**Omnilube FGG 1320**
Lubriplate	L0987 / SFGO Ultra-460	PAO (H-1) / 460	**Omnilube FGG 1460**
Lubriplate	SFL-2	Calcium Sulfonate /	**Omnilube FGM 2**
Lubriplate	PGO-FGL 220	PAG / 220	**Omnilube PGG 220 FG**
Lubriplate	PGO-FGL 320	PAG / 320	**Omnilube PGG 320 FG**
Lubriplate	PGO-FGL 460	PAG / 460	**Omnilube PGG 460 FG**
Lubriplate	L0970 / Syn Lube 32	PAO / 32	**Chemlube 624**
Lubriplate	L0971 / Syn Lube 46	PAO / 46	**Chemlube 625**
Lubriplate	L0972 / Syn Lube 68	PAO / 68	**Chemlube 626**
Lubriplate	L0973 / Syn Lube 100	PAO / 100	**Chemlube 627**
Lubriplate	L0932 / Synac 32	Diester / 32	**Chemlube 215**
Lubriplate	L0933 / Synac 46	Diester / 46	**Chemlube 229**
Lubriplate	L0934 / Synac 68	Diester / 68	**Chemlube 230**
Lubriplate	L0935 / Synac 100	Diester / 100	**Chemlube 501**
Lubriplate	Synac 150	Diester / 150	**Chemlube 751**
Lubriplate	Synac 220	Diester / 220	**Chemlube 822**
Lubriplate	Syncool 32	Polygylcol/Ester / 32	**Coolant 32 PE**
Lubriplate	Syncool 46	Polygylcol/Ester / 46	**Ultrachem Coolant PE**
Lubriplate	L0939 / SynXtreme AC-32	POE / 32	**Chemlube 932**
Lubriplate	L0940 / SynXtreme AC-46	POE / 46	**Chemlube 946**
Lubriplate	L0941 / SynXtreme AC-68	POE / 68	**Chemlube 968**
Lubriplate	Synflush	Flush - Diester / 32	**Ultraclean**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Mattei	Rotoroil 8000 A	Synthetic Blend / 100	**Chemlube 501**
Mattei	RotorOil 8000 F2	Diester / 100	**Chemlube 501**
Mobil	60262-3 / Mobil DTE Light	Petroleum / 32	**P-ACO 32**
Mobil	60263-1 / Mobil DTE Medium	Petroleum / 46	**P-ACO 46**
Mobil	60264-9 / Mobil DTE Heavy Medium	Petroleum / 68	**P-ACO 68**
Mobil	Mobil DTE Heavy	Petroleum / 100	**P-ACO 100**
Mobil	Mobil DTE Extra Heavy	Petroleum / 150	**P-ACO 150**
Mobil	Glygoyle 30 Gear Lube	PAG / 220	**PGWS 220**
Mobil	Mobilgear SHC 150	PAO / 150	**Omnigear 150 EP**
Mobil	Mobilgear SHC 220	PAO / 220	**Omnigear 220 EP**
Mobil	Mobilgear SHC 320	PAO / 320	**Omnigear 320 EP**
Mobil	Mobilgear SHC 460	PAO / 460	**Omnigear 460 EP**
Mobil	Mobilgear SHC 680	PAO / 680	**Omnigear 680 EP**
Mobil	Rarus 424	Petroleum / 32	**P-ACO 32**
Mobil	Rarus 425	Petroleum / 46	**P-ACO 46**
Mobil	Rarus 426	Petroleum / 68	**P-ACO 68**
Mobil	Rarus 427	Petroleum / 100	**P-ACO 100**
Mobil	Rarus 429	Petroleum / 150	**P-ACO 150**
Mobil	Rarus 824	Diester / 32	**Chemlube 215**
Mobil	Rarus 826	Diester / 68	**Chemlube 230**
Mobil	Rarus 827	Diester / 100	**Chemlube 501**
Mobil	Rarus 829	Diester / 150	**Chemlube 751**
Mobil	Rarus SHC 1024	PAO / 32	**Chemlube 221**
Mobil	Rarus SHC 1025	PAO / 46	**Chemlube 228**
Mobil	Rarus SHC 1026	PAO / 68	**Chemlube 268**
Mobil	SHC 624	PAO / 32	**Chemlube 624**
Mobil	SHC 625	PAO / 46	**Chemlube 625**
Mobil	SHC 626	PAO / 68	**Chemlube 626**
Mobil	SHC 627	PAO / 100	**Chemlube 627**
Mobil	SHC 629	PAO / 150	**Chemlube 629**
Mobil	SHC 630	PAO / 220	**Chemlube 630**
Mobil	SHC 632	PAO / 320	**Chemlube 632**
Mobil	SHC 634	PAO / 460	**Chemlube 634**
Mobil	SHC 636	PAO / 680	**Chemlube 636**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Mobil	SHC 639	PAO / 1000	**Chemlube 639**
Mobil	Glygoyle 220	PAG / 220	**Omnilube PGG 220 FG**
Mobil	Glygoyle 320	PAG / 320	**Omnilube PGG 320 FG**
Mobil	Glygoyle 460	PAG / 460	**Omnilube PGG 460 FG**
Nash	Liquid Ring Vacuum Pump Oil		**Chemlube 315, 215, 201**
Pennzoil	Pennzbell 32	Petroleum Hydraulic / 32	**Chemlube 221**
Pennzoil	Pennzbell 32	Petroleum Hydraulic / 32	**32S**
Pennzoil	Pennzbell 32	Petroleum Hydraulic / 32	**P-ACO 32**
Pennzoil	Pennzbell 32	Petroleum Hydraulic / 32	**PS 46**
Pennzoil	Pennzcom PAO 32	PAO / 32	**Chemlube 221**
Pennzoil	Pennzcom PAO 46	PAO / 46	**Chemlube 228**
Pennzoil	Pennzcom PAO 68	PAO / 68	**Chemlube 268**
Pennzoil	Pennzcom S-32	Diester / 32	**Chemlube 215**
Pennzoil	Pennzcom S-46	Diester / 46	**Chemlube 229**
Pennzoil	Pennzcom S-68	Diester / 68	**Chemlube 230**
Pennzoil	Pennzcom S-100	Diester / 100	**Chemlube 501**
Pennzoil	Pennzcom S-150	Diester / 150	**Chemlube 751**
Pennzoil	Therma-Solve	Cleaner / 46	**Ultra-Solv**
Petro-Canada	SPX 5000	Polyglycol / 150	**PGWS 150**
Petro-Canada	COMPRO XL-S 32	Semi-Synthetic / 32	**32S**
Petro-Canada	COMPRO XL-S 46	Semi-Synthetic / 46	**46S**
Petro-Canada	COMPRO XL-S 68	Semi-Synthetic / 68	**68S**
Petro-Canada	COMPRO XL-S 100	Semi-Synthetic / 100	**100S**
Petro-Canada	COMPRO XL-S 150	Semi-Synthetic / 150	**150S**
Petro-Canada	SYNDURO SHB 32	PAO / 32	**Chemlube 624**
Petro-Canada	SYNDURO SHB 68	PAO / 68	**Chemlube 626**
Petro-Canada	SYNDURO SHB 150	PAO / 100	**Chemlube 627**
Petro-Canada	SYNDURO SHB 220	PAO / 220	**Chemlube 630**
Petro-Canada	SYNDURO SHB 460	PAO / 460	**Chemlube 634**
Petrochem	PR-500	Diester / 100	**Chemlube 501**
Petrochem	Foodsafe Gearsyn-FG 460	PAO (H-1) / 460	**Omnilube FGG 1460**
Petrochem	White graphite FG-220 AW	220	**Omnilube FGC 4220 AW**
Petrochem	Petro-syn FG 220	220	**Omnilube FGC 4220**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Petrochem	White Graphite PAG FG 220	220	**Omnilube PG 220 FG AW**
Petrochem	Foodsafe PMO FG-100	100	**Omnilube PC 100 FG**
Quincy	112541 / Quin-Cip ISO 32	Petroleum / 32	**P-ACO 32**
Quincy	112542-PO68 / Quin-Cip ISO 68	Petroleum / 68	**P-ACO 68**
Quincy	112543 / Quin-Cip ISO 100	Petroleum / 100	**P-ACO 100**
Quincy	127462-005, 127462-055 / Quin-Syn	PAO / 46	**Chemlube 228**
Quincy	Quin-Syn 2085	PAO/Mineral Di-ester / 46	**PS 46**
Quincy	Quin-Syn 2445	PAO/Ester / 46	**Chemlube Plus 10**
Quincy	110756-005, 110756-055 / Quin-Syn FG	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Quincy	128542-005 / Quin-Syn Flush	Flush - Diester / 32	**Ultraclean**
Quincy	Quin-Syn HP	Polyolester / 46	**Chemlube 946**
Quincy	141140-005, 141140-055 / Quin-Syn IV	Petroleum/PAO blend / 46	**46S**
Quincy	143808-005, 143808-055 / Quin-Syn PG	Polygylcol / 46	**Ultrachem Coolant PE**
Quincy	144046-005, 144046-055 / Quin-Syn Plus	PAO-Ester / 46	**Chemlube Plus 10**
Quincy	142784-005, 142784-055 / Quin-Syn XP	Polyolester / 68	**Chemlube 968**
Quincy	QuinSyn Edge	POE Blend / 46	**Chemlube Plus 10**
Quincy	QuinSyn Endura	POE / 46	**Chemlube 946**
Quincy	QuinSyn Flex	PAO / 46	**Chemlube 228**
Quincy	QuinSyn Prime	PAG / 46	**Coolant 32 PE**
Quincy	QuinSyn FG 46	PAO / 46	**Omnilube 546**
Rietschle	Pump = CG's & RG's	Synthetic / 32	**Chemlube 221 or 32S**
Rietschle	Pump = VG's & VCB20	Synthetic / 46	**VPSH 46**
Rietschle	Multi-Lube Pump = CLF's, VC, VF, VL & VW's	Petroleum / 100	**VP 100**
Rietschle	Pump = CL,CLFG, DCL & DCLF	Synthetic / 320	**Chemlube 632**
Roots	Syn Blower Oil	Synthetic / 220	**Chemlube 630**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Roots	813-106 / Syn Blower Oil >300°F	Synthetic / 320	**Chemlube 632**
Royal Lubricants	Recip 100	Diester / 100	**Chemlube 501**
Royal Lubricants	Royco 432	PAO / 32	**Chemlube 221**
Royal Lubricants	Royco 432 FG	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Royal Lubricants	Royco 446	PAO / 46	**Chemlube 228**
Royal Lubricants	Royco 446 FG	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46**
Royal Lubricants	Royco 468	PAO / 68	**Chemlube 268**
Royal Lubricants	Royco 486	PAO / 100	**Chemlube 627**
Royal Lubricants	Royco 486 FG	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Royal Lubricants	Royco 489 FG	PAO (H-1) / 150	**Omnilube 640**
Royal Lubricants	Royco 4032	Diester / 32	**Chemlube 215**
Royal Lubricants	Royco 4068	Diester / 68	**Chemlube 230**
Royal Lubricants	Royco 4100	Diester / 100	**Chemlube 501**
Royal Lubricants	Royco 4150	Diester / 150	**Chemlube 751**
Royal Lubricants	Royco 5032	PAO / 32	**Chemlube 624**
Royal Lubricants	Royco 5068	PAO / 68	**Chemlube 626**
Royal Lubricants	Royco 5100	PAO / 100	**Chemlube 627**
Royal Lubricants	Royco 5150	PAO / 150	**Chemlube 629**
Royal Lubricants	Royco 5220	PAO / 220	**Chemlube 630**
Royal Lubricants	Royco 5320	PAO / 320	**Chemlube 632**
Royal Lubricants	Royco 5460	PAO / 460	**Chemlube 634**
Royal Lubricants	Royco 5680	PAO / 680	**Chemlube 636**
Royal Lubricants	Royco 868	Polygylcol / 68	**PGWS 68**
Royal Lubricants	Royco 880	Polygylcol / 220	**PGWS 220**
Royal Lubricants	Royco 886	Polygylcol / 100	**PGWS 100**
Royal Lubricants	Royco 889	Polygylcol / 150	**PGWS 150**
Royal Purple	Crystal Clear FDA 32	PAO (H-1) / 32	**Omnilube FGH 1032**
Royal Purple	Crystal Clear FDA 46	PAO (H-1) / 46	**Omnilube FGH 1046**
Royal Purple	Crystal Clear FDA 68	PAO (H-1) / 68	**Omnilube FGH 1068**
Royal Purple	Crystal Clear FDA 100	PAO (H-1) / 100	**Omnilube FGG 1100**
Royal Purple	Crystal Clear FDA 150	PAO (H-1) / 150	**Omnilube FGG 1150**
Royal Purple	Crystal Clear FDA 220	PAO (H-1) / 220	**Omnilube FGG 1220**
Royal Purple	Crystal Clear FDA 320	PAO (H-1) / 320	**Omnilube FGG 1320**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Royal Purple	Crystal Pure FDA 1X	PAO (H-1) / 68	**Omnilube FGH 1068**
Royal Purple	Crystal Pure FDA 2X	PAO (H-1) / 100	**Omnilube FGH 1100**
Royal Purple	Crystal Pure FDA 40X	PAO (H-1) / 150	**Omnilube FGG 1150**
Royal Purple	Crystal Pure FDA 50X	PAO (H-1) / 220	**Omnilube FGG 1220**
Royal Purple	Crystal Pure FDA 60X	PAO (H-1) / 320	**Omnilube FGG 1320**
Royal Purple	Poly Guard FDA 32	PAO (H-1) / 32	**Omnilube FGH 1032**
Royal Purple	Poly Guard FDA 46	PAO (H-1) / 46	**Omnilube FGH 1046**
Royal Purple	Poly Guard FDA 68	PAO (H-1) / 68	**Omnilube FGH 1068**
Royal Purple	Poly Guard FDA 100	PAO (H-1) / 100	**Omnilube FGH 1100**
Royal Purple	Poly Guard FDA 150	PAO (H-1) / 150	**Omnilube FGG 1150**
Royal Purple	Poly Guard FDA 220	PAO (H-1) / 220	**Omnilube FGG 1220**
Royal Purple	Poly Guard FDA 320	PAO (H-1) / 320	**Omnilube FGG 1320**
Royal Purple	Poly Guard FDA 460	PAO (H-1) / 460	**Omnilube FGG 1460**
Royal Purple	Synfilm Recip. 68	Diester / 68	**Chemlube 230**
Royal Purple	Synfilm Recip. 100	Diester / 100	**Chemlube 501**
Royal Purple	Synfilm Recip. 150	Diester / 150	**Chemlube 751**
Royal Purple	Synfilm 32	PAO/II / 32	**Chemlube 221**
Royal Purple	Synfilm 46	PAO/II / 46	**Chemlube 228**
Royal Purple	Synfilm 68	PAO/II / 68	**Chemlube 268**
Royal Purple	Synfilm 100	PAO/II / 100	**Chemlube 299**
Royal Purple	Ultra Performance FDA Grease	Aluminum Complex /	**Omnilube FGM 2**
Schaeffer	# 269 Hydraulic Oil 32	PAO (H-1) / 32	**Omnilube FGH 1032**
Schaeffer	# 269 Hydraulic Oil 46	PAO (H-1) / 46	**Omnilube FGH 1046**
Schaeffer	# 269 Hydraulic Oil 68	PAO (H-1) / 68	**Omnilube FGH 1068**
Schaeffer	# 269 Hydraulic Oil 100	PAO (H-1) / 100	**Omnilube FGH 1100**
Schaeffer	# 276 Gear Lube H-1 100	PAO/Mineral Oil (H-1) / 100	**Omnilube FGG 1100**
Schaeffer	# 276 Gear Lube H-1 150	PAO/Mineral Oil (H-1) / 150	**Omnilube FGG 1150**
Schaeffer	# 276 Gear Lube H-1 220	PAO/Mineral Oil (H-1) / 220	**Omnilube FGG 1220**
Schaeffer	# 276 Gear Lube H-1 320	PAO/Mineral Oil (H-1) / 320	**Omnilube FGG 1320**
Schaeffer	# 276 Gear Lube H-1 460	PAO/Mineral Oil (H-1) / 460	**Omnilube FGG 1460**
Schaeffer	#280 Food Grade HTC 32	Mineral Oil (H-1) / 32	**Omnilube WO 32**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Schaeffer	#280 Food Grade HTC 46	Mineral Oil (H-1) / 46	**Omnilube WO 46**
Schaeffer	#280 Food Grade HTC 68	Mineral Oil (H-1) / 68	**Omnilube WO 68**
Schaeffer	#280 Food Grade HTC 100	Mineral Oil (H-1) / 100	**Omnilube WO 100**
Schaeffer	#280 Food Grade HTC 150	Mineral Oil (H-1) / 150	**Omnilube WO 150**
Shell	Corena AP 68	Diester / 68	**Chemlube 230**
Shell	Corena AP 100	Diester / 100	**Chemlube 501**
Shell	Corena AS 32	PAO / 10	**Chemlube 221**
Shell	Corena AS 46	PAO / 20	**Chemlube 228**
Shell	Corena AS 68	PAO / 30	**Chemlube 268**
Shell	Corena P 68 Recip Oil	Petroleum / 68	**P-ACO 68**
Shell	Corena P 100 Recip Oil	Petroleum / 100	**P-ACO 100**
Shell	Corena P 150 Recip Oil	Petroleum / 150	**P-ACO 150**
Shell	Corena S 32	Semi-Synthetic / 32	**32S**
Shell	Corena S 46	Semi-Synthetic / 46	**46S**
Shell	Corena S 68	Semi-Synthetic / 68	**68S**
Shell	Corena S 100	Semi-Synthetic / 100	**100S**
Shell	(Formerly Hyperia) / Omala HD 68	PAO / 68	**Omnigear 68 EP**
Shell	(Formerly Hyperia) / Omala HD 100	PAO / 100	**Omnigear 100 EP**
Shell	(Formerly Hyperia) / Omala HD 150	PAO / 150	**Omnigear 150 EP**
Shell	(Formerly Hyperia) / Omala HD 220	PAO / 220	**Omnigear 220 EP**
Shell	(Formerly Hyperia) / Omala HD 320	PAO / 320	**Omnigear 320 EP**
Shell	(Formerly Hyperia) / Omala HD 460	PAO / 460	**Omnigear 460 EP**
Shell	(Formerly Hyperia) / Omala HD 680	PAO / 680	**Omnigear 680 EP**
Shell	(Formerly Hyperia) / Omala RL 32	PAO / 32	**Chemlube 624**
Shell	(Formerly Hyperia) / Omala RL 68	PAO / 68	**Chemlube 626**
Shell	(Formerly Hyperia) / Omala RL 100	PAO / 100	**Chemlube 627**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Shell	(Formerly Hyperia) / Omala RL 150	PAO / 150	**Chemlube 629**
Shell	(Formerly Hyperia) / Omala RL 220	PAO / 220	**Chemlube 630**
Shell	(Formerly Hyperia) / Omala RL 320	PAO / 320	**Chemlube 632**
Shell	(Formerly Hyperia) / Omala RL 460	PAO / 460	**Chemlube 634**
Shell	(Formerly Hyperia) / Omala RL 680	PAO / 680	**Chemlube 636**
Shell	Tivela WB	PAG / 220	**PGWS 220**
Squire-Cogswell	Rotary Vane Vacuum Pump Oil	100	**Chemlube 501**
Sullair	02250051-153, 02250051-150 / 24KT	Silicone /	**Platinum BTG**
Sullair	241443-001, 241443-002 / LLL-4-32	PAO / 32	**Chemlube 221**
Sullair	249775-001, 249775-002 / LLL-4-46	PAO / 46	**Chemlube 228**
Sullair	250029-012, 250029-013, 248697 / LLL-4-100	PAO / 100	**Chemlube 299**
Sullair	250019-662, 250019-663 / SRF I/4000	Synthetic Petroleum / 32	**32S**
Sullair	SRF II/8000	Synthetic Petroleum(w/ more anti oxidants than SRF I/4000) / 32	**32S**
Sullair	250030-757, 250030-758, 250030-782 / Sullair AWF	H.R. Petroleum / 32	**32S**
Sullair	250022-669, 250022-670 / Sullube 32	Polygylcol/ Ester / 32	**Coolant 32 PE**
Sullair	Sullube 60	Polygylcol/ Ester / 68	**NA**
Summit	DSL-32	Diester / 32	**Chemlube 215**
Summit	DSL-46	Diester / 46	**Chemlube 229**
Summit	DSL-68	Diester / 68	**Chemlube 230**
Summit	DSL-100	Diester / 100	**Chemlube 501**
Summit	DSL-125	Diester /	**Chemlube 751**
Summit	DSL-150	Diester / 150	**Chemlube 751**
Summit	FG-100	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Summit	FG-200	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Summit	FG-250	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Summit	FG-300	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Summit	FG-500	PAO (H-1) / 150	**Omnilube 640**
Summit	Hysyn BD-32	Polyolester / 32	**Chemlube 5126**
Summit	Hysyn BD-46	Polyolester / 46	**Chemlube 5132**
Summit	NGSH 100	PAO / 100	**CHEMLUBE NGC 100**
Summit	PGI-68	Polyalkylene Glycol / 68	**PGWI 68**
Summit	PGI-100	Polyalkylene Glycol / 100	**PGWI 100**
Summit	PGI-150	Polyalkylene Glycol / 150	**PGWI 150**
Summit	PGS-220	Polyalkylene Glycol / 220	**PGWS 220**
Summit	PS-100	Partial / 32	**PS 32**
Summit	PS-150	Partial / 46	**PS 46**
Summit	PS-200	Partial / 68	**PS 68**
Summit	PS-300	Partial / 100	**PS 100**
Summit	PS400	Petroleum / 150	**P-ACO 150**
Summit	SH-32	PAO / 32	**Chemlube 221**
Summit	SH-46	PAO / 46	**Chemlube 228**
Summit	SH-68	PAO / 68	**Chemlube 268**
Summit	SH-100	PAO / 100	**Chemlube 627**
Summit	SHV-32	PAO/ESTER / 32	**Chemlube 221**
Summit	SHV-68	PAO/ESTER / 68	**Chemlube 268**
Summit	SHV-100	PAO/ESTER / 100	**Chemlube 299**
Summit	Sierra 32	Synthetic / 32	**Ulterra 32**
Summit	Sierra 46	Synthetic / 46	**Ulterra 46**
Summit	Sierra 68	Synthetic / 68	**Ulterra 68**
Summit	Supra 32	Polygylcol/Ester / 32	**Coolant 32 PE**
Summit	Supra Coolant	Polygylcol/Ester / 46	**Ultrachem Coolant PE**
Summit	Syngear FG 150	PAO (H-1) / 150	**Omnilube FGG 1150**
Summit	Syngear FG 220	PAO (H-1) / 220	**Omnilube FGG 1220**
Summit	Syngear FG 320	PAO (H-1) / 320	**Omnilube FGG 1320**
Summit	Syngear FG 460	PAO (H-1) / 460	**Omnilube FGG 1460**
Summit	Syngear Foodgrade PG 220	PAG / 220	**Omnilube PGG 220 FG**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Summit	Syngear Foodgrade PG 320	PAG / 320	**Omnilube PGG 320 FG**
Summit	Syngear Foodgrade PG 460	PAG / 460	**Omnilube PGG 460 FG**
Summit	SynGear 75W-90	Synthetic / 75W-90	**Ultrachem 75W-90**
Summit	SynGear 80W-140	Synthetic / 80W-140	**Ultrachem 80W-140**
Summit	SynGear SH-10068	PAO / 68	**Omnigear 68 EP**
Summit	SynGear SH-1010	PAO / 100	**Omnigear 100 EP**
Summit	SynGear SH-1015	PAO / 150	**Omnigear 150 EP**
Summit	SynGear SH-1022	PAO / 220	**Omnigear 220 EP**
Summit	SynGear SH-1032	PAO / 320	**Omnigear 320 EP**
Summit	SynGear SH-1046	PAO / 460	**Omnigear 460 EP**
Summit	SynGear SH-1068	PAO / 680	**Omnigear 680 EP**
Summit	SynGear SH-7032	PAO / 32	**Chemlube 624**
Summit	SynGear SH-7068	PAO / 68	**Chemlube 626**
Summit	SynGear SH-7100	PAO / 100	**Chemlube 627**
Summit	SynGear SH-7150	PAO / 150	**Chemlube 629**
Summit	SynGear SH-7220	PAO / 220	**Chemlube 630**
Summit	SynGear SH-7320	PAO / 320	**Chemlube 632**
Summit	SynGear SH-7460	PAO / 460	**Chemlube 634**
Summit	SynGear SH-7680	PAO / 680	**Chemlube 636**
Summit	Ultima	Polyolester / 46	**Chemlube Plus 10**
Summit	Varnasolv	Cleaner / 46	**Ultra-Solv**
Sunoco	AC 46	PAO / 46	**Chemlube 228**
Synflo	Synflo 70	Diester / 32	**Chemlube 215**
Synflo	Synflo 80 XP	PAO / 46	**Chemlube 228**
Synflo	Synflo 90	Diester / 100	**Chemlube 501**
Synflo	Synflo 100 XP	PAO / 46	**Chemlube 228**
Texaco	Cetus DE 32	Diester / 32	**Chemlube 215**
Texaco	Cetus DE 46	Diester / 46	**Chemlube 229**
Texaco	Cetus DE 68	Diester / 68	**Chemlube 230**
Texaco	Cetus DE 100	Diester / 100	**Chemlube 501**
Texaco	Cetus PAO 32	PAO / 32	**Chemlube 221**
Texaco	Cetus PAO 46	PAO / 46	**Chemlube 228**
Texaco	Cetus PAO 68	PAO / 68	**Chemlube 268**
Texaco	Cetus PAO 100	PAO / 100	**Chemlube 627**
Texaco	Pinnacle 32	PAO / 32	**Chemlube 624**

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Texaco	Pinnacle 68	PAO / 68	**Chemlube 626**
Texaco	Pinnacle 100	PAO / 100	**Chemlube 627**
Texaco	Pinnacle 150	PAO / 150	**Chemlube 629**
Texaco	Pinnacle 220	PAO / 220	**Chemlube 630**
Texaco	Pinnacle 320	PAO / 320	**Chemlube 632**
Texaco	Pinnacle 460	PAO / 460	**Chemlube 634**
Texaco	Pinnacle 680	PAO / 680	**Chemlube 636**
Texaco	Pinnacle 1000	PAO / 1000	**Chemlube 639**
Texaco	Pinnacle EP 150	PAO / 150	**Omnigear 150 EP**
Texaco	Pinnacle EP 220	PAO / 220	**Omnigear 220 EP**
Texaco	Pinnacle EP 320	PAO / 320	**Omnigear 320 EP**
Texaco	Pinnacle EP 460	PAO / 460	**Omnigear 460 EP**
Texaco	Pinnacle EP 680	PAO / 680	**Omnigear 680 EP**
Texaco	Rando Oil 32	Petroleum /	**P-ACO 32**
Texaco	Rando Oil 46	Petroleum /	**P-ACO 46**
Texaco	Rando Oil 68	Petroleum /	**P-ACO 68**
Texaco	Regal R&O 32	Petroleum /	**P-ACO 32**
Texaco	Regal R&O 46	Petroleum /	**P-ACO 46**
Texaco	Regal R&O 68	Petroleum /	**P-ACO 68**
Texaco	Regal R&O 100	Petroleum /	**P-ACO 100**
Texaco	Regal R&O 150	Petroleum /	**P-ACO 150**
Texaco	Syn Star DE 32	Diester / 32	**Chemlube 215**
Texaco	Syn Star DE 68	Diester / 68	**Chemlube 230**
Texaco	Syn Star DE 100	Diester / 100	**Chemlube 501**
TMI Compressed Air Systems	SYNHI-II	PAO /	**Chemlube 228**
Total	Nevastane SY 220	PAG / 220	**Omnilube PGG 220 FG**
Total	Nevastane SY 320	PAG / 320	**Omnilube PGG 320 FG**
Total	Nevastane SY 460	PAG / 460	**Omnilube PGG 460 FG**
Travaini	971-0022-A000 (Dyna Seal)	Partial Synthetic / 22	**VP 22**
Travaini	972-0068-A000	Group II or III / 68	**68S**
Travaini	972-0100-A000	Group II or III / 100	**100S**
Travaini	974-015F-A000	PAO /	**NA**
Travaini	974-068F-A000	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***

COMPANY	PART # / PRODUCT	BASE FLUID / ISO GRADE	UC EQUIVALENT
Travaini	974-100F-A000	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Travaini	974-0192-C000	PAG/Ester /	**Coolant 32 PE**
Travaini	Liquid Ring Vacuum Pump Oil		**Chemlube 315, 215, 201**
Travaini	974-006-A000	PAO / 68	**Chemlube 268 or 626**
Travaini	974-0100-A000	PAO / 100	**Chemlube 627**
Tribology Tech-Lube	TACO FG 32	PAO (H-1) / 32	**Omnilube 520, Omnilube 32/46***
Tribology Tech-Lube	TACO FG 46	PAO (H-1) / 46	**Omnilube 546, Omnilube 32/46***
Tribology Tech-Lube	TACO FG 68	PAO (H-1) / 68	**Omnilube 568, Omnilube 68***
Tribology Tech-Lube	TACO FG 100	PAO (H-1) / 100	**Omnilube 5131, Omnilube 455***
Tribology Tech-Lube	TTL Ultima Coolant	PAG / 46	**UC Coolant PE**
Tuthill	PneuLube	PAO / 100	**VPSH 100**
Tuthill	PneuLube	PAO / 150	**Chemlube 629**
US Industrial Lubricants	USL-600	Ester / 100-150	**Chemlube 5083**
US Industrial Lubricants	USL-650	Ester / 220	**Chemlube 5093**
Notes			*** Omnilube long life compressor fluids.**

ULTRACHEM INC
PREMIUM SYNTHETIC LUBRICANTS

FLUID CHANGEOUT GUIDE

ROTARY SCREW COMPRESSORS

PAOs, "S" SERIES & MINERAL OILS	***FLUSH*** →	POLYGLYCOL COOLANTS
PAOs & "S" SERIES*	NO FLUSH →	DIESTERS, POEs & "PLUS" FLUIDS
DIESTERS & POEs	NO FLUSH →	POLYGLYCOL COOLANTS
MINERAL OILS	***FLUSH*** →	ANY SYNTHETIC
PAOs & ESTERS	NO FLUSH →	MINERAL OIL

*These fluids can varnish at high temperatures. If this occurs, a diester flush (250 - 500 hours maximum depending on severity) should be included in the changeout procedure.

ULTRACHEM INC
PREMIUM SYNTHETIC LUBRICANTS

SERVICE HOURS vs. TEMPERATURE

Often the subject of how long compressor oil will last at a particular temperature is asked. This depends on several factors, including application, cleanliness of air, base fluid of the oil, etc.

We have predicted operating life of various compressor oils based on good operating conditions in our literature. Generally, they are:

1. **2-4000** hours for food grade **USDA H-1 PAO** oils
2. **6-8000** hours for **PAO**
3. **8000** hours for **diester** oils
4. **8000** hours for **polyglycol/ester base** oils
5. **8-10,000** hours for PAO/POE base oils
6. **10-12,000** hours for POE base oils.

As temperatures increase, the oil life is drastically decreased, especially above 210ºF.

Some typical numbers others and we have used are as follows:

TEMPERATURE	PAO	DIESTER	POE BLEND	PE COOLANTS	POE
180-190ºF	8000	8000	10000	11000	12000
190-200ºF	6000	8000	9000	10000	11000
200-210ºF	4000	6000	8000	9000	10000
210-220ºF	2000	4000	5000	7000	9000

Diester oils will take more abuse and provide superior detergency to PAO products.

These figures are non-specific and “Rule of Thumb”. Other factors to be considered (such as acids in the intake air) are outlined in our technical information letter, “Compressor Oil Service Life”.

ULTRACHEM INC
PREMIUM SYNTHETIC LUBRICANTS

Ester Compatibility Guide

The following guide is intended for use, only as a guide, regarding compatibility with Ultrachem's diester and polyol ester oils and greases. The information is, to the best of our knowledge, true and accurate, but all recommendations, or suggestions are made without guarantee, since the conditions of use are beyond our control.

A Seal Materials

Acceptable	Marginally Acceptable	Not Acceptable
Flurocarbon (Viton Telfon) Nitrile Rubber (Buna-N, NBR)* Flurosilicone Rubber Polysulfide (Thiokol) * High nitrile content (> 36% acrylonitrile)	Nitrile Rubber (Buna-N, NBR)* Polyurethane Ethylene-Propylene Terpolymer (EPDM) Epichlorohydrin Polyacrylate Rubber Silicone Rubber *Medium nitrile content (30-36% acrylonitrile)	Polychloroprene (Neoprene) Natural Rubber Styrene-Butadiene Rubber (SBR, Buna-S) Butyl Rubber Chlorosulfonated Polyethylene Nitrile Rubber (Buna-N, NBR)* *Low nitrile content (< 30% acrylonitrile)

B. Paints

Epoxy Baked Phenolic Two-Component Urethane Moisture-cured Urethane	Alkyds (Baked finish preferred) Phenolic Single Component Urethane Industrial Latex	Acrylic Latex (Household Type) Vinyl (PVC) Varnish Lacquer

C. Plastics

Nylon (including filled) Fluorocarbon (Teflon) Polyacetal (Delrin, Celcon)	Polyurethane Polyethylene Polypropylene Polycarbonate (Lexan) Acrylic (Lucite, Plexiglas) Polysulfone Phenylene Oxide (Noryl)	Polystyrene Polyvinyl Chloride ABS (acrylonitrile/ butadiene/ styrene)

D. Metals

Steel and Alloys Aluminum and Alloys Copper and Alloys* Tin Nickel Inconel, Monel * Chemlube® lubricants are formulated to inhibit copper corrosion; however, minimizing exposure to copper will extend the life of any oil.	Cadmium Zinc	Lead (Certain products contain lead corrosion inhibitors and are acceptable)

We recommend the use of our Omnilube® oils and greases where plastic, paint, or elastomer compatibility may be a problem.

ULTRACHEM INC
PREMIUM SYNTHETIC LUBRICANTS

BENEFITS OF NEW OMNILUBE® FOOD GRADE LUBRICANTS

Ultrachem offers a new series of H-1 food grade lubricants that significantly outperforms conventional PAO based competitive H-1 lubricants. These products have now been field tested for five years and are unmatched in performance.

Omnilube 32/46 is our new long life H-1 rotary screw compressor oil that gives twice the life of competitive products. Several customers have gone for over 7000 hours before needing to change oil. In addition to long life, this new product gives outstanding Falex fail load versus several commercial H-1 lubricants as shown in the chart below:

Falex PIN & "V" Block ASTM D-3233B

Product	Fail Load (lbs)
Omnilube 32/46	1000
Quinsyn® F	450
Aeon® 6000 FG	300
IR® SSR H-1 F	500
Anderol® FGC-20	450
Comp Air® SSL-35F	300

Omnilube 68 and Omnilube 455 are also included in this series. Omnilube 68 is an ISO 68 H-1 lubricant designed for vane compressors, and Omnilube 455 is an ISO-100 H-1 lubricant designed for reciprocating compressors. It uses the same novel Ultrachem additive chemistry to again give longer life and lower friction.

Omnilube 2000 Series H-1 food grade gear oils are an extension of this novel chemistry. These products offer improved wear protection, load carrying capability ability and useful life versus competitive H-1 food grade PAO based oils. Bench test data on our 2000 Series products and on our H-1 polyakylene glycol (Omnilube PG 220 FG) are shown below:

ASTM D-3233B (Falex)	Fail Load
Omnilube 1220 (a conventional PAO Food Grade Oil)	1250
Omnilube 2220 (new Ultrachem Chemistry)	2250

Four Ball	WearScar Diameter
Omnilube 2220, 2460	0.41
Omnilube PG 220 FG	.38

Timken Load

Omnilube 2220	Pass 27 lb.
Omnilube 1220	Fail 24 lb.
Anderol FGH 6460	Fail 24 lb.
Omnilube PG 220 FG	Pass 35 lb.

EP 4 Ball Weld Load (ASTM D-2783)	**Weld Load – lbs.**
Petro Canada Purity FG EP Gear Oil ISO 220	278
Omnilube 2220	352

ULTRACHEM INC
PREMIUM SYNTHETIC LUBRICANTS

NLGI LUBRICATING GREASES CLASSIFICATION

NLGI	PENETRATION
000	445 TO 475
00	400 TO 430
0	355 TO 385
1	310 TO 340
2	265 TO 295
3	220 TO 295
4	175 TO 205
5	130 TO 160
6	85 TO 115

VISCOSITY CLASSIFICATION FOR INDUSTRIAL LUBRICANTS

VISCOSITY CLASS	VISCOSITY LIMIT (cSt.)	
ISO	**40°C**	**100°C**
22	19.8-24.2	3.99-4.5
32	28.8-35.2	4.97-5.6
46	41.4-50.6	6.2-7.05
68	61.2-78.8	7.95-9.1
100	90.0-110.0	10.3-11.8
150	135-165	13.6-15.5
220	198-242	17.5-20.0
320	288-352	22.3-25.5
460	414-506	28.2-32.2
680	612-748	36.5-41.5
1000	900-1100	60.0-68.0

ULTRACHEM INC
PREMIUM SYNTHETIC LUBRICANTS

VISCOSITY CHART

Table 2. Comparative Viscosity Classifications