



Product Data Sheet

Manufacturer Information:

Tulco Oils, Inc.
5240 E. Pine Street
Tulsa, Oklahoma 74115

SUPER HYDRAULIC A.W. OILS

LUBSOIL SUPER HYDRAULIC A.W. Oils are superior anti-wear hydraulic and circulating fluids specifically formulated with high quality base stocks and improved thermally stable additives. These oils offer outstanding resistance to sludge formation, are chemically stable, and exhibit excellent anti-wear protection.

Qualities:

- **LUBSOIL SUPER HYDRAULIC A.W.** Oils are made from top quality base stocks and contain all the necessary additive components to offer trouble free service in high-pressure, high-output industrial hydraulic circuits. **LUBSOIL SUPER HYDRAULIC A.W.** Oils have these outstanding properties:
- **LUBSOIL SUPER HYDRAULIC A.W.** Oils utilize the latest in thermally stable zinc-type additives. This virtually eliminates the formation of heat-related sludging in sensitive electro-hydraulic servos associated with conventional zinc-type oils. These oils are wholly suitable for N/C machine tools and other high-output equipment where sustained heat is prevalent.
- These oils exhibit superior hydrolytic stability in the presence of water and will not contribute to either the formation of metal-etching acids or corrosive reactants.
- **LUBSOIL SUPER HYDRAULIC A.W.** Oils offer the optimum in anti-wear protection to pumps, motors, valves, and other hydraulic circuit components. They meet and exceed the most stringent testing requirements. These oils carry the official approval from Cincinnati Milacron for their P-68, P-69 and P-70 specifications. This is reflected in Cincinnati's test reference numbers 9801050, 9801051 and 9801052 respectively. These oils also meet and exceed the specifications for Denison HF-0, Vickers M-2950-S and I-286-S
- **LUBSOIL SUPER HYDRAULIC A.W.** Oils resist foaming and will not foster abnormal air entrapment in properly designed hydraulic circuits. The oils also readily and rapidly separate water permitting sump drain-off of the contaminating water.

Applications:

- **LUBSOIL SUPER HYDRAULIC A.W.** Oils are recommended for service in vane, piston, and gear pumps when used in accordance with the manufacturers' recommendations. The oils are designed to provide maximum service life to these pumps as well as to other circuit components such as motors and servos.
- **LUBSOIL SUPER HYDRAULIC A.W.** Oils are also recommended for use as gear and bearing lubricant in industrial applications where rust and oxidation inhibited oils are required.
- **LUBSOIL SUPER HYDRAULIC A.W.** Oils meet the general physical and performance requirements of the European classifications as follows:
DIN 51524 Part 2(HLP) ISO-VG Grades 22-220

TYPICAL SPECIFICATIONS

PROPERTIES	LUBSOIL SUPER HYDRAULIC A.W. ISO GRADES							
	15	22	32	46	68	100	150	220
PRODUCT CODES	(0485)	(0490)	(0492)	(0494)	(0496)	(0486)	(0488)	(0487)
GRAVITY	32.3	31.9	31.3	30.4	29.6	29.0	28.2	28.0
POUNDS PER GAL	7.16	7.21	7.24	7.28	7.31	7.34	7.40	7.40
FLASH POINT, °F (C)	405 (207)	433 (233)	414 (212)	468 (242)	464 (240)	475 (246)	471 (244)	471 (240)
VISCOSITY, cP @ 0°C (1)		-	-	-	-	-	-	-
VISCOSITY cSt @ 40°C	15.8	21.5	32	46	68	98	150	220
VISCOSITY cSt @ 100 °C	3.6	4.2	5.5	6.8	8.5	10.9	14	18
VISCOSITY SUS @ 100°F	86	113	171	237	352	514	781	999
VISCOSITY SUS @ 210°F	38	40.5	45	49	55	63	77	89
VISCOSITY INDEX	110	100	100	102	100	98	98	98
POUR POINT, °F (°C)	-45 (-43)	-45(-43)	-33(-34)	-27(-32)	-20(-29)	+5(-15)	+5(-15)	+5(-15)
COLOR, ASTM D-1500	L 1.0	L 1.0	L 1.0	L 1.0	L 1.5	L 3.0	L 4.0	L 4.0
EMULSION TEST D-1401 (2)	40/40/0	40/40/0	40/40/0	40/40/0	40/40/0	40/40/0	40/40/0	40/40/0
HYD. PUMP TEST (3) 2000 PSI, 100HR, 175°F MGS RING + VANE LOSS	18	22	25	25	28	28	28	28
OXIDATION TEST ASTM D-943 HRS.	5000+	5000+	5000+	5000+	5000+	3000+	2500+	2500+
RUST TEST, A, B (4)	PASS	PASS	PASS	PASS	PASS	PASS	PASS	PASS
MEETS VICKERS M-2950-S (5)	YES	YES	YES	YES	YES	--	--	--
MEETS VICKERS M-286-S (6)	YES	YES	YES	YES	YES	--	--	--
MEETS DENSON HF-O	YES	YES	YES	YES	YES	YES	YES	YES
MEETS CINCINNATI MILACRON REQ.		-	P- 68	P- 70	P- 69	-	-	-
DIN 51524 PART 2 GRADE	HLP 15	HLP 22	HLP 32	HLP 46	HLP 68	HLP 100	N/A	N/A
ISO VG NUMBER	15	22	32	46	68	100	150	220

Notes:

- (1) ASTM D-2893 BROOKFIELD VISCOSITY.
- (2) 30 MINUTES MAX. SEPERATION TIME.
- (3) TEST UTILIZES VICKERS 104c OR 105c VANE PUMP.
- (4) PASS-NO RUST.
- (5) THIS REQUIREMENT UTILIZES VICKERS 35VQ25A VANE PUMP TEST FOR MOBILE EQUIPMENT.
- (6) THIS REQUIREMENT UTILIZES VICKERS 104c OR 105c VANE PUMP TEST, ASTM D 2882 AND IS FOR INDUSTRIAL, STATIONARY SYSTEMS.

When in doubt about the appropriate product for a specific application, always contact your Tulco Oils Inc. company representative.

For safety information see the Lubsoil Material Safety Data Sheet and the product label. The values shown here are representative of typical values of current production. Some values are controlled by manufacturing specifications, while others are not. This product should only be used for its intended purposes. Due to continual product research and development, the information contained here is subject to change. Therefore, all values may vary within modest ranges.

For more information and availability call 1-800-375-2347.