

**HYDROCARBON BASE OIL**

Company Name	Category	Brand Name	Grade/Callout	Color D-1500	Pour Point °F	Flash Point °F	Viscosity 100 °F	SUS 210 °F	ISO-VG Grade/Ident.	Visc. Index	Additives							V.I Improvers	Spec. Grav.	
											Anti- Corrosion	Anti- Foam	Anti- Oxidant	Anti- Rust	Anti- Wear	Demulsifier	Detergent			
American Oil Company	Anti-wear hydraulic oil	AMOVIS AW	32	2.5	-20	370	150/165	43.5	32	95	X	X	X	X	X	X			0.8719	
			46	2.5	-20	400	200/220	47.0	46	92	X	X	X	X	X	X			0.8746	
			68	3.0	-20	400	300/320	52.5	68	92	X	X	X	X	X	X			0.8805	
			100	3.5	-15	450	500/530	63.0	100	88.5	X	X	X	X	X	X			0.8855	
			150	3.5	-15	475	730/770	73.8	150	87	X	X	X	X	X	X			0.8893	
	Premium anti-wear hydraulic oil (resists seal shrinkage)	RYKON	MV	0.5	-65	355	178	52.5	32/46	205	X	X	X	X	X	X		X	0.8767	
			32	2.0	-30	380	158	45.1	32	125	X	X	X	X	X	X		X	0.8735	
			46	1.5	-35	380	212	49.3	46	125	X	X	X	X	X	X		X	0.8746	
			68	1.5	-35	380	303	56.9	68	132	X	X	X	X	X	X		X	0.8784	
			100	1.5	-25	395	517	72.1	100	125	X	X	X	X	X	X		X	0.8784	
			220	1.5	-10	445	954	95.7	220	115	X	X	X	X	X	X		X	0.8822	
			32	0.5	-	410	150/165	43.8	32	101	X	X	X	X	X	X			0.8740	
	General purpose hydraulic oil	AMOCO	46	0.5	-	425	195/215	47.2	46	104	X	X	X	X	X	X			0.8784	
			68	0.5	-	435	295/320	52.2	68	97	X	X	X	X	X	X			0.8816	
	Slide & way oil Hydraulic oil	WAY TAC	32	8	5	395	161.1	44.6	32	111	X	X	X	X					0.8773	
			68	8	5	430	327	55.6	68	111	X	X	X	X					0.8882	
			100	8	5	455	506	64.7	100	101	X	X	X	X					0.8921	
			220	8	5	495	967	86.8	220	96	X	X	X	X					0.8978	
	Premium turbine oil	AMERICAN INDUSTRIAL	32	1.0	-30	420	158.7	44.2	32	107	X	X	X	X		X	N		-	
			46	0.5	-25	440	212.3	47.7	46	103	X	X	X	X		X	N		-	
			68	1.0	-25	455	313	53.5	68	100	X	X	X	X		X	N		-	
			100	1.5	5	510	502	62.5	100	92	X	X	X	X		X	N		-	
			150	2.5	5	530	752	74.6	150	91	X	X	X	X		X	N		-	
			220	3.0	10	540	952	84	220	91	X	X	X	X		X	N		-	
			260	3.0	5	555	1,192	95	220/320	91	X	X	X	X		X	N		-	
			320	3.5	5	560	1,504	109	320	92	X	X	X	X		X	N		-	
			460	4.0	10	570	2,053	132	460	94	X	X	X	X		X	N		-	
			500	4.5	15	590	2,446	148	460	95	X	X	X	X		X	N		-	
	Turbine oil	INDOIL	32	1.0	0	385	158	43.6	32	96.7	X	X	X	X		X			-	
			46	0.5	0	420	207	46.6	46	93.7	X	X	X	X		X			-	
			68	1.0	0	430	309	52.5	68	94.2	X	X	X	X		X			-	
Atlantic Richfield	Heavy duty anti- wear mobile hydraulic oil Anti-wear hydraulic & machine oil Hydraulic system & machine oil Artic hydraulic oil multi-purpose hyd.clutch, transmission & wet brake oil Hydraulic, circulating crank case & gear case oil	ARCO AW DURO AW DURO ARCO TRACTOR FLUID RUBILENE	-	L1.0	-20	400	155	44	32	100	X	X	X	X	X	X			0.8681	
			S-150	2.0	-25	400	155	44	32	95	X	X	X	X	X	X			0.8681	
			S-215	2.0	-25	410	205	47	46	95	X	X	X	X	X	X			0.8708	
			S-315	2.5	-25	440	305	53	68	95	X	X	X	X	X	X			0.8762	
			S-465	3.0	-5	470	500	64	100	95	X	X	X	X	X	X			0.8844	
			55	L0.5	20	300	55	34	10	95	X	X	X	X	X	X			0.8324	
			S-105	1.0	10	370	105	39.5	22	95	X	X	X	X	X	X			0.8602	
			S-150	1.0	-25	400	155	44	32	95	X	X	X	X	X	X			0.8681	
			S-215	L1.0	10	420	205	47	46	95	X	X	X	X	X	X			0.8708	
			S-315	L1.5	-25	440	310	53	68	95	X	X	X	X	X	X			0.8762	
			S-465	L2.5	10	465	450	61	100	95	X	X	X	X	X	X			0.8789	
			600	L3.0	10	485	600	68	100/150	95	X	X	X	X	X	X			0.8844	
			S-700	3.0	15	495	650	71	150	95	X	X	X	X	X	X			0.8871	
			S-1000	L4.5	15	500	950	86	220	95	X	X	X	X	X	X			0.8899	
			S-1500	6.0	15	510	1,400	107	320/460	96	X	X	X	X	X	X			0.8927	
			-	Red	-75	200	73.5	42.7	15	300	X	X	X	X	X	X		X		0.8708
			-	5.0	-30	-	69.6	10.3	68	145	X	X	X	X	X	X		X		0.8871
			S-150	L1.0	10	400	160	43.5	32	95			X				X			0.8654
			S-215	L1.0	10	415	205	46	46	95			X				X			0.8708
S-315	L1.5	10	430	310	53	68	95			X				X			0.8762			
S-465	2.5	10	460	465	61	100	95			X				X			0.8816			
500	L2.0	10	475	515	64	100/150	95			X				X			0.8816			
S-700	L4.0	10	485	730	75	150	95			X				X			0.8844			
S-1000	L4.5	10	500	960	86	220	95			X				X			0.8871			
1200	4.5	10	510	1,260	100	220/320	95			X				X			0.8899			
1700	L5.0	15	535	1,730	120	320/460	95			X				X			0.8927			
S-2150	L5.5	15	550	2,100	135	460	95			X				X			0.8956			
2500	L6.0	15	570	2,650	155	680	95			X				X			0.8984			
S-150	8.0	-20	370	155	-	32	-	X					X	X			0.8735			
S-135	D8.0	-15	340	315	-	68	-	X					X	X			0.9249			
S-700	D8.0	-15	400	700	-	150	-	X					X	X			0.9310			
S-1000	D8.0	5	410	1,000	-	220	-	X					X	X			0.9371			

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											Anti- Corrosion	Anti- Foam	Anti- Oxidant	Anti- Rust	Anti- Wear	Demulsifier	Detergent	
	High temp gas turbine oil	IDEAL PLUS		L1.5	-25	430	162	44.7	32	110	X	X	X	X	X			0.8654
	Turbine, hydraulic & machine oil	IDEAL	S-150	L0.5	15	380	150	43	32	100	X	X	X	X	X			0.8576
			S-215	L0.5	15	410	210	47	46	100	X	X	X	X	X			0.8654
			S-315	L0.5	15	440	310	54	68	100	X	X	X	X	X			0.8681
			S-465	L0.5	15	460	450	62	100	100	X	X	X	X	X			0.8735
<b>Ashland Oil, Inc.</b>	Anti-wear		AW 15	3.0	-20	390	140/160	43	32	95	X	X	X	X	X		N	0.8789
<b>Valvoline Oil Div.</b>	hydraulic		AW 20	3.5	-10	400	195/225	47	46	95	X	X	X	X	X		N	0.8816
	lubricating oil		AW 30	4.0	-10	410	285/325	53	68	95	X	X	X	X	X		N	0.8844
<b>BP Oil, Inc.</b>	Premium anti-wear hydraulic & gear oil	ENERGOL HLP	22	1.5	-25	410	108	40	22	95	X	X	X	X	X		N	0.8612
			32	1.5	-20	425	153	43	32	95	X	X	X	X	X			0.8654
			46	1.5	-25	430	221	47	46	95	X	X	X	X	X			0.8703
			68	L2.0	-10	470	339	54	68	95	X	X	X	X	X		N	0.8751
			100	3.5	-5	500	540	66	100	95	X	X	X	X	X		N	0.8773
			150	6.0	0	485	774	78	150	95	X	X	X	X	X		N	0.8822
			220	6.0	5	515	1,155	95	220	95	X	X	X	X	X		N	0.8871
			460	7.0	10	530	2,375	145	460	90	X	X	X	X	X		N	0.8927
			680	7.5D	20	530	3,360	171	680	85	X	X	X	X	X		N	0.9159
	Multipurpose lubricating & hydraulic oil	ENERGOL HL	32	1.5	-25	410	165	44	32	95	X	X	X	X	X			0.8644
			46	1.5	-20	425	227	48	46	95	X	X	X	X	X			0.8692
			68	2.0	-5	450	340	55	68	95	X	X	X	X	X			0.8708
			100	2.5	0	475	490	63	100	95	X	X	X	X	X			0.8762
			150	4.0	5	500	733	75	150	95	X	X	X	X	X			0.8789
			220	5.5	10	505	1,160	96	220	95	X	X	X	X	X			0.8855
			320	6.0	10	535	1,647	117	320	95	X	X	X	X	X			0.8855
	Automatic transmission fluid	BP AUTRAN	-	Red	-40	390	185.4	49.1	32/46	150	X	X	X	X	X		X	0.871
		DEXRON II	-	5.5	-30	410	261	54.5	46/68	139	X	X	X	X	X		X	-
		BP HYD TF																
		J D 303																
	Multi-grade gear oil	GEAREP	80W-140	-	-20	395	1,321	142.8	220/320	152	X	X	X	X	X		X	0.9071
	Non-lead extreme pressure gear lubricant	ENERGOL GR-XP	68	L5	-25	440	329	56	68	95	X	X	X	X	X			0.8784
			150	L6	-15	450	647	73	150	95	X	X	X	X	X			0.8833
			220	L6	-5	455	973	91	150/220	95	X	X	X	X	X			0.8871
			320	L6	15	460	1,473	112	350	95	X	X	X	X	X			0.8899
			550	L6.5	15	425	2,475	152	460	95	X	X	X	X	X			0.8921
			680	D8	15	465	2,974	176	460/680	95	X	X	X	X	X			0.8961
			3200	D8	25	450	15,000	510	-	95	X	X	X	X	X			0.9230
<b>Bel-Ray Co., Inc.</b>	Premium Anti-wear hyd oil	RAYLENE	0.0	0.75	-25	395	110	-	22	100	X	X	X	X	X			0.8602
			0	1.25	-20	420	155	-	32	100	X	X	X	X	X			0.8633
			1	1.5	-20	440	210	-	46	100	X	X	X	X	X			0.8681
			2	2.0	-15	465	340	-	68	100	X	X	X	X	X			0.8708
			3	2.5	-15	495	500	-	100	100	X	X	X	X	X			0.8762
	Premium anti-wear hydraulic oil (same as Raylene with low pour point)		LT-56	Red	-75	220	98.7	45.8	22	292	X	X	X	X	X		X	0.8681
			LT-75	Blue	-70	295	58	33.9	10	40	X	X	X	X	X			0.8703
			LT-85	-	-65	320	78	36.8	15	75	X	X	X	X	X			0.8794
			LT-100	-	-55	320	103	41.8	22	163	X	X	X	X	X			0.8719
			LT-200	-	-40	365	200	51.3	46	163	X	X	X	X	X			0.8612
			LT-300	-	-40	420	310	61.6	68	160	X	X	X	X	X			0.8644
<b>Bray Oil Co.</b>	Hydraulic fluid	BRAYCO	756E	Red	-75	180	13.1	5.1	15	-	X	X	X	X	X		X	0.873
		MICRONIC	762E	Red	-75	180	13.1	5.1	15	-	X	X	X		X			0.855
			762	2.5	-90	200	3.4	-	3	-	X	X	X	X	X			0.855
			783E	Red	-75	200	14.1	-	15	-	X	X	X	X	X		X	0.874
			790/150AW	14.5	-35	400	154.2	43.8	150	32	X	X	X	X	X			0.8816
			1015	1.0	-20	390	32.8	5.27	32	100	X	X	X	X	X			0.8789
<b>Castrol</b>	High V.I. anti-wear hydraulic	HYSPIN AWH	15	-	-60	325	15.8	3.82	15	151	**							0.869
			32	-	-30	325	32	6.13	32	155	**							0.876
			46	-	-30	330	47.2	7.98	46	153	**							0.880
			68	-	-30	330	61.5	10.2	68	165	**							0.882
	Anti-wear hydraulic oil	HYSPIN AWS	10	-	-50	320	10.0	2.45	10	65	**							0.870
			15	-	-40	315	14.6	3.1	15	70	**							0.875
			22	-	-50	340	23.5	4.08	22	66	**							0.886
			32	-	-20	420	34.5	5.42	32	100	**							0.873
			46	-	-5	430	46	6.4	46	100	**							0.878
			68	-	-5	440	65	8.1	68	100	**							0.881
			100	-	0	430	100	10.8	100	100	**							0.885
			150	-	0	430	150	14	150	100	**							0.887

<sup>1</sup>CS @ 40° C and 100° C

\*\*Information on specific additives was not available at time of publication

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											Anti- Corrosion	Anti- Foam	Anti- Oxidant	Anti- Rust	Anti- Wear	Demulsifier	Detergent			
<b>Chevron Oil</b>	Premium	CHEVRON EP	32	1.0	-25	415	150	44	32	95	X	X	X	X	X	X			0.873	
	anti-wear		46	1.0	-20	425	215	48	46	95	X	X	X	X	X	X			0.8762	
	hydraulic oil		68	1.0	-20	455	315	54	68	95	X	X	X	X	X	X			0.8800	
				MV	0.5	-70	310	154	46	32	135	X	X	X	X	X	X	X		0.8905
<b>Cities Service Co.</b>	Premium anti-wear hydraulic & circulating oil	CITGO A/W	32	L1.0	-25	400	150/160	43.4	32	95	X	X	X	X	X	X			0.8676	
			46	L1.5	-20	410	215/225	47.5	46	95	X	X	X	X	X	X			0.8746	
			68	L3.0	5	420	320/335	53.6	68	95	X	X	X	X	X	X			0.8784	
	Anti-wear hydraulic oil (ashless/non-zinc)	CITGO	32	0.5	-25	425	150/160	43.4	32	95	X	X	X	X	X	X			0.866	
		PACEMAKER XD	46	1.0	-20	445	215/225	47.6	46	95	X	X	X	X	X	X			0.871	
			68	2.5	5	470	320/335	53.6	68	95	X	X	X	X	X	X			0.876	
	Gear & chain lubricant	CITGO	XD32	1.0	5	425	150/160	43.4	32	95	X	X	X	X	X	X			0.866	
		PACEMAKER	XD46	1.0	5	445	215/225	47.6	46	95	X	X	X	X	X	X			0.869	
			XD68	1.0	5	490	320/335	53.6	68	95	X	X	X	X	X	X			0.875	
				100	2.0	5	505	495	62	100	95	X	X	X	X	X			0.879	
<b>CONOCO</b>			150	3.5	5	525	760	75	150	95	X	X	X	X	X			0.881		
			320	5.0	10	555	1,600	115	320	95	X	X	X	X	X			0.885		
			460	6.0	10	575	2,600	154	460	95	X	X	X	X	X			0.894		
	Cold climate anti-wear hydraulic oil	DN-600	-	-	-70	300	13.8 <sup>1</sup>	3.5 <sup>1</sup>	15	160	X	X	X	X	X	X	X		0.8708	
	Industrial oil	REDIND	15	-	-10	375	160	45	32	100	X	X	X	X	X	X			0.8654	
			21	-	-10	400	205	46	46	100	X	X	X	X	X	X			0.8708	
			27	-	-10	410	270	50	68	98	X	X	X	X	X	X			0.8708	
			37	-	-10	420	375	57	100	98	X	X	X	X	X	X			0.8762	
			45	-	-10	425	445	61	100	98	X	X	X	X	X	X			0.8762	
			68	-	-10	430	550	68	150	100	X	X	X	X	X	X			0.8762	
		84	-	-10	440	860	84	150	99	X	X	X	X	X	X			0.8816		
	Premium grade hydraulic oil	SUPER HYDRAULIC OIL	5W-20	-	-30	375	165	47	32	141	X	X	X	X	X	X	X		0.8654	
			15	-	-20	380	155	44	32	100	X	X	X	X	X	X			0.8708	
			21	-	-20	390	215	48	46	100	X	X	X	X	X	X			0.8708	
			31	-	-20	400	305	54	68	100	X	X	X	X	X	X			0.8762	
			51	-	5	420	505	64	100	100	X	X	X	X	X	X			0.8816	
	Turbine oil (Recommended for other uses including hydraulic systems)	DECTROL R&O	15	-	-20	380	155	44	32	100	X	X	X	X	X	X			0.8654	
			21	-	-10	400	205	47	46	99	X	X	X	X	X	X			0.8708	
			33	-	0	440	330	54	68	98	X	X	X	X	X	X			0.8708	
			51	-	5	455	500	64	100	98	X	X	X	X	X	X			0.8762	
			76	-	5	470	732	76	150	98	X	X	X	X	X	X			0.8816	
			92	-	5	490	1,052	92	220	98	X	X	X	X	X	X			0.8816	
			116	-	5	520	1,557	115	320	98	X	X	X	X	X	X			0.8816	
			140	-	10	535	2,145	140	460	98	X	X	X	X	X	X			0.8871	
	Same as above but has "film strength additive"	G. P. DECTOL R & O	33	-	5	440	330	54	68	98	X	X	X	X	X	X			0.8708	
<b>Davis Howland Oil Co.</b>	Premium anti-wear hydraulic oil	DSL-40	44	-	5	405	150	44	32	100	X	X	X	X	X	X			0.8681	
			45	-	5	420	210	47	46	100	X	X	X	X	X	X			0.8735	
		additive		46	-	5	435	315	54	68	100	X	X	X	X	X			0.8773	
			47	-	5	465	505	64	100/150	95	X	X	X	X	X	X			0.8833	
			48	-	5	485	700	72	150	95	X	X	X	X	X	X			0.8860	
			49	-	10	520	985	86	220	95	X	X	X	X	X	X			0.8882	
		Lubricant & hydraulic oil	CONVIS - OC	150	-	5	405	150	44	32	100	X	X	X	X	X	X			0.8681
				200	-	5	420	210	47	46	100	X	X	X	X	X	X			0.8735
				300	-	5	435	315	54	68	100	X	X	X	X	X	X			0.8773
				500	-	5	465	505	64	100/150	95	X	X	X	X	X	X			0.8833
			700	-	5	485	700	72	150	95	X	X	X	X	X	X			0.8860	
			985	-	10	520	985	86	220	95	X	X	X	X	X	X			0.8882	
<b>Dryden Oil Co., Inc.</b>	Premium anti-wear hydraulic oil	DRYDENE BLUE	Light	Blue	-25	395	161.9	44.39	32	102.4	X	X	X	X	X	X			0.8592	
			10	Blue	-25	420	215	48	46	104	X	X	X	X	X	X			0.8708	
			20	Blue	-15	440	303	53	68	101	X	X	X	X	X	X			0.8713	
			30	Blue	-5	495	509	65	100/150	101	X	X	X	X	X	X			0.8762	
		Premium anti-wear hydraulic oil	PARADENE AW	22AW	-	-20	401	114	40.6	22	106	X	X	X	X	X	X			0.8592
			32AW	-	-20	411	160	44.1	32	102	X	X	X	X	X	X	X			0.8623
			46AW	-	-20	420	215	48	46	102	X	X	X	X	X	X	X			0.8659
			68AW	-	-15	440	319	54.1	68	101	X	X	X	X	X	X	X			0.8713
			100AW	-	-5	495	550	65.6	100	100	X	X	X	X	X	X	X			0.8762
			150AW	-	0	525	755	77.5	150	100	X	X	X	X	X	X	X			0.8794
		220AW	-	0	540	1,132	96	220	100	X	X	X	X	X	X	X			0.8871	
		320AW	-	0	560	1,670	120	320	100	X	X	X	X	X	X	X			0.8877	
		460AW	-	0	595	2,520	154.7	460	98	X	X	X	X	X	X	X			0.8916	

<sup>1</sup>CS @ 40° C and 100° C

**HYDROCARBON BASE OIL**

Company Name	Category	Brand Name	Grade/Callout	Color D-1500	Pour Point °F	Flash Point °F	Viscosity 100 °F	SUS 210 °F	ISO-VG Grade/Ident.	Visc. Index	Additives							Spec. Grav.	
											Anti- Corrosion	Anti- Foam	Anti- Oxidant	Anti- Rust	Anti- Wear	Demulsifier	Detergent		V.I Improvers
	Turbine oil (also steam & hydraulic turbines)	PARADENE R & O	2R & O 10R & O 22R & O 32R & O 46R & O 68R & O	0.25 0.5 0.75 1.0 1.0 1.0	5 5 -20 -20 -20 -20	270 345 401 411 420 440	34.4 65 114 160 215 319	- 35.7 40.6 44.5 48 54.1	- 2 10 22 32 46 68	100 100 106 102 102 101	X X X X X X	X X X X X X	X X X X X X	X X X X X X	X X X X X X			0.8373 0.8550 0.8592 0.8623 0.8659 0.8713	
	Extreme pressure worm gear lubricant	DRYDEN EP GEAR LUB.	1 2 3 4 5 6 7 8	- - - - - - - -	-25 -25 -25 -20 -15 -15 -5 0	445 460 495 515 545 555 575 595	208 302 445 750 1,300 1,425 2,020 2,967	47.4 53 90.5 78 101 112 137 165	46 68 100 150 220/320 320 460 680	103 100 98 100 99 101 102 96	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X			- - - - - - - -	
<b>Exxon Company</b>	Premium anti-wear hydraulic oil	NUTO H	32 46 68 100 High V.I. hydraulic oil	2.0 2.0 2.5 2.5 Red 0.5	-25 -20 -20 -10 -75 -75	410 420 440 460 200 215	155 220 329 495 75.33 132.3	43.7 48.0 54.5 63.1 43.36 59.71	32 46 68 100 15 22/32	103 102 101 96 378 395	X X X X X X	X X X X X X	X X X X X X	X X X X X X	X X X X X X			0.871 0.873 0.878 0.883 0.8607 0.8602	
	Circulating and hydraulic oil	NUTO	P32 32 46 68 100 150 220 320 460	3.5 - - - - - - - -	-50 -10 -10 -5 -5 0 0 25 20	310 405 420 435 465 510 530 550 585	164.6 158 223 329 494 763 1,093 1,579 2,284	49.71 43.8 48.1 54.4 63.9 78.3 95.4 118.3 148.6	32 46 68 100 150 220 320 460	189 101 101 100 100 100 100 100	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X	X X X X X X X X			0.8800 0.870 0.874 0.878 0.882 0.884 0.888 0.891 0.894	
	Premium anti-wear turbine oil	TERESSTIC EP	32 68	L1.0 1.0	15 15	430 475	155 329	44 56	32 68	109 109	X X	X X	X X	X X	X X	X X			0.8654 0.874
	Premium circulating & steam turbine oil	TERESSTIC	32 33 46 68 77 100 150 220 320 460	- - - - - - - - - -	-5 -5 -5 -5 -5 0 0 0 25 20	410 405 435 455 485 510 520 530 550 585	154.5 158 222 329 398 546 825 1,093 1,579 2,284	44.3 43.8 48.3 55.5 59.8 68.1 82.6 95.4 118.3 148.6	32 32 32 46 68 100 150 220 320 460	112 101 105 108 108 106 102 100 100 100	X X X X X X X X X X	X X X X X X X X X X	X X X X X X X X X X	X X X X X X X X X X	X X X X X X X X X X			0.859 0.870 0.872 0.874 0.876 0.879 0.884 0.888 0.891 0.894	
	Premium paper machine oil	TERESSTIC N	150 220	4.5 5.5	20 20	500 525	743 1,140	78.8 99.9	150 220	103 104	X X	X X	X X	X X	X X	X X			0.8866 0.8911
<b>Fiske Bros. Refining Co.</b>	Premium multi-use hydraulic & lubricating oil	LUBRIPLATE	H0-0 H0-1 H0-2 H0-2a H0-3 H0-4 H0-5	2- 2- 3- 3- 3- 5- 5	-30 -25 -20 -15 -10 0 10	415 420 430 445 460 470 480	160 213 309 518 690 840 1,510	46 49 54 66 75 83 111	32 46 68 100/150 150 150/220 320	136 120 106 104 102 101 96	X X X X X X X	X X X X X X X	X X X X X X X	X X X X X X X	X X X X X X X		X	0.8676 0.8708 0.8735 0.8789 0.8794 0.8800 0.8893	
<b>Gulf Oil Corp.</b>	Premium anti-wear hydraulic oil		32AW 46AW 68AW 100AW 150AW	L0.5 L0.5 L1.0 L1.5 L2.5	-25 -25 -20 -20 5	400 405 450 465 475	155 220 325 500 724	43.9 48.2 54.6 64 76	32 46 68 100 150	106 105 104 99 99	X X X X X	X X X X X	X X X X X	X X X X X	X X X X X			0.8703 0.8746 0.8789 0.8822 0.8860	
	Hydraulic & multi- purpose oil	HARMONY	22 32 46 68 90 115 150 220 320 460 680	L0.5 L0.5 L0.5 L1.0 L1.5 L2.0 L3.0 L4.0 L5.0 L6.0 L7.0	10 5 5 10 10 10 5 5 5 5 5	400 410 425 450 480 500 505 515 540 560 590	112 150.2 218 323 460 610 762 1,084 1,598 2,492 3,826	40.4 43.3 47.9 54.3 62 69.4 76.7 93.4 116.6 152.5 200	22 32 46 68 68/100 100/150 150 220 320 460 680	96 102 101 102 100 97 95 97 97 97 97	X X X X X X X X X X X	X X X X X X X X X X X	X X X X X X X X X X X	X X X X X X X X X X X	X X X X X X X X X X X			0.8638 0.8686 0.8730 0.8767 0.8816 0.8833 0.8855 0.8910 0.8950 0.8996 0.9025	
	Paper machine oil w/o detergent		150N	L2.0	5	505	813	75.3	150	84	X	X	X	X	X	N			0.8927
	Paper machine oil with detergent		78EP	L2.0	5	480	407	58.7	68/100	99	X	X	X	X	X	X			0.8822
	Marine turbine oil		150D	L3.0	5	505	728	75.8	150	97	X	X	X	X	X	X			0.8866









**HYDROCARBON BASE OIL**

Company Name	Category	Brand Name	Grade/Callout	Color D-1500	Pour Point °F	Flash Point °F	Viscosity 100 °F	SUS 210 °F	ISO-VG Grade/Ident.	Visc. Index	Additives							Spec. Grav.	
											Anti- Corrosion	Anti- Foam	Anti- Oxidant	Anti- Rust	Anti- Wear	Demulsifier	Detergent		V.I Improvers
	Combination transmission differential & hydraulic oil	HYDRAULIC/ TRACTOR FLUID		dk.brown	-45	380	253	55.7	46/68	156	X	X	X	X	X		X		0.8871
	Premium turbine oil	TURBINE XD	150	1.0	-20	425	150	43.2	32	100	X	X	X	X		X		0.8676	
	Turbine oil	UNAX RX	315	3.0	-10	465	315	53.5	68	100	X	X	X	X		X		0.8800	
			105	-	-15	405	105	40.1	22	96	X	X	X	X		X		0.8638	
			150	-	-15	420	150	43.1	32	97	X	X	X	X		X		0.8751	
			215	-	0	445	215	47.2	46	97	X	X	X	X		X		0.8805	
			315	-	10	450	315	53.2	68	98	X	X	X	X		X		0.8833	
			465	-	10	455	465	61.6	100	97	X	X	X	X		X		0.8860	
			700	-	10	470	700	73.7	150	96	X	X	X	X		X		0.8927	
			1000	-	10	480	1,000	88.8	220	96	X	X	X	X		X		0.8950	
	General purpose turbine oil (non-EP grade)	TURBINE OIL	105	1.0	-20	400	105	39.7	22	95	X	X	X	X		X		0.8762	
			150	1.0	-20	420	150	43.2	32	100	X	X	X	X		X		0.8794	
			215	1.0	-10	445	215	47	46	94	X	X	X	X		X		0.8866	
			315	1.0	0	455	315	52	68	87	X	X	X	X		X		0.8893	
			465	4.5	20	490	465	59.3	100	85	X	X	X	X		X		0.8944	
			700	6.0	20	500	700	70.3	150	85	X	X	X	X		X		0.8978	
			1000	6.5	20	500	1,000	83	220	84	X	X	X	X		X		0.9013	
			2150	7.5	20	530	2,150	126	460	84	X	X	X	X		X		0.9065	
<b>White &amp; Bagley</b>	Hydraulic oil	W & B SUPER	100	-	-	410	100	41	22	-	X	X	X	X				0.8612	
			150	-	-	430	150	44	32	-	X	X	X	X				0.8633	
			225	-	-	455	225	48	46	-	X	X	X	X				0.8686	
			300	-	-	475	300	54	68	-	X	X	X	X				0.8708	
			600	-	-	505	600	69	100/150	-	X	X	X	X				0.8773	
<b>Arthur C. Withrow Co.</b>	Anti-wear hydraulic oil	H-series	Light	2	-	385	157	43.9	32	-	X	X	X	X		X		0.8665	
			Medium	2	-	395	236	49	46	-	X	X	X	X		X		0.8729	
			Heavy medium	3	-	410	307	53.3	68	-	X	X	X	X		X		0.8756	
			Heavy	3.5	-	425	441	60.3	100	-	X	X	X	X		X		0.8811	
	Multi-viscosity anti-wear hydraulic oil	WITHROLUBE	624	2	-	420	300	56	46/68	-	X	X	X	X		X		0.874	
	Industrial oil	"S" SERIES	Light	2	-	405	155	44.1	32	105	X	X	X	X				0.8681	
			Medium heavy	2	-	425	235	48.9	46	95	X	X	X	X				0.8713	
			Medium	3	-	445	309	55.8	68	95	X	X	X	X				0.8772	
			Heavy	3.5	-	450	444	59.9	68/100	95	X	X	X	X				0.8783	
			Extra heavy	4	-	460	581	67	100	95	X	X	X	X				0.8822	
			900	4	-	460	950	84.7	150	95	X	X	X	X				0.8827	
	Industrial oil		560	1.5	-	355	71	36	10	-	X	X	X	X				0.8493	
	EP lubricant	AP GEAR LUBRICANT	90	-	10	-	1,380	90	220/320	92	X	X	X	X				-	
			140	-	20	-	2,500	150	460/680	91	X	X	X	X				-	
	Motor oil	TRIP-L-FILM	SAE20	3.5	-10	445	320	54.6	68	104	X	X	X	X		X		0.8816	
		CUSTOM	SAE30	4-4.5	5	465	580	66.6	100/150	104	X	X	X	X		X		0.8860	
			SAE40	4-4.5	10	480	830	82.1	150/220	98	X	X	X	X		X		0.8882	

## OIL IN WATER (EMULSION) HYDRAULIC FLUID

Company Name	Brand Name	Grade/Callout	Color D-1500	Pour Point °F	Flash Point °F	Viscosity 100 °F	SUS 210 °F	Visc. Index	Spec. Grav.
American Oil Co.	AMOCO FR FLUID	WG46	-	-20	-	209	102	160	1.060
Castrol	ANVOL	WG22	cl.yel.	-15	-	22 <sup>1</sup>	-	200	1.068
		WG46	cl.yel.	-40	-	46 <sup>1</sup>	-	200	1.081
Chem-Trend, Inc.		HF20	Red	-20	-	180	90	155	1.07
Cities Service	CITGO	Glycol FR-40XD	Red	-40	-	200	100	210	1.085
Continental Oil Co.	CONOCO	FC	Red	-30	-	200	94	150	1.09
Davis-Howland Oil	-	DSL-FR200	Red	-45	-	200	130	160	1.079
E.F. Houghton & Co.	HOUGHTO-SAFE	520	Red	-50	-	200	90	200	1.075
		620	Red	-65	-	200	89	201	1.074
A. Margolis & Sons	SILOGRAM FR-200		Red	-40	-	200	-	150	1.079
Stauffer Chemical Co.	FYRGUARD	150	Red	-45		150	-	160	1.076
		200	Red	-45		200	-	160	1.079
Sun Oil Co.	SUNSOL	AW	L4.5	-	-	62.8 <sup>1</sup>	-	-	0.8899
Texaco Oil Co.	SAFETY FLUID	200	-	-65	-	204	-	-	1.090

<sup>1</sup> CS @ 100 °F

## WATER IN OIL (INVERT EMULSION) HYDRAULIC FLUID

Company Name	Brand Name	Grade/Callout	Color D-1500	Pour Point °F	Flash Point °F	Viscosity 100 °F	SUS 210 °F	Visc. Index	Spec. Grav.
American Oil Co.	AMOCO FR FLUID	W0	milky white	0	-5	397	158	-	0.9254
Atlantic Richfield Co.	DURO FR HD	-	-	-25	-	472	-	-	0.935
Castrol	ANVOL	W068	white	-40	-	68 <sup>1</sup>	-	175	0.939
		W0100	white	-30	-	100 <sup>1</sup>	-	150	0.941
Continental Oil Co.	CONOCO	FR	milky	-	-2	500	175	-	0.9236
Exxon Company	-	3110FR	-	-35	-	438	-	-	0.933
E. F. Houghton & Co.	HOUGHTO-SAFE	5046W	milky white	-30	-	450	-	130	0.960
Mobil Oil	HYDRASOL	A	-		-10	340	250	-	0.9383
	PYROGUARD-D	-	off white	-20	-	550	-	-	0.925
Shell Oil Co.	IRUS	F	yellow	-	5	430	168	-	
		M	yellow	-	5	580	-	-	

<sup>1</sup> CS @ 100 °F

### WATER IN OIL (INVERT EMULSION)

Company Name	Brand Name	Grade/Callout	Color D-1500	Pour Point °F	Freeze Point °F	Viscosity 100 °F	SUS 210 °F	Visc. Index	Spec. Grav.
<b>Standard Oil of Ohio</b> (also marketed as Boron Oil - same name and grade)	STAYSOL FR	-	opaque white	0	-	440	165	139	0.9164
<b>Sun Oil Co.</b>	SUNSAFE	450 F	white white	-30 -20	- -	450 425	- -	- -	0.921 0.921
<b>Texaco Oil Co.</b>	HYDRAFLUID	-	-	15	-	350	-	-	0.9358
<b>Union Oil Co.</b>	UNION	FR	creamy white	-30	-	500	190	150	0.9522

### PHOSPHATE ESTER & PHOSPHATE ESTER BLEND HYDRAULIC FLUIDS

Company Name	Brand Name	Grade/Callout	Color D-1500	Pour Point °F	Flash Point °F	Viscosity 100 °F	SUS 210 °F	Visc. Index	Spec. Grav.
<b>American Oil Co.</b>	AMOCO FR	PE46 PE118	3 3	0 20	455 455	205-240 500-600	- -	- -	1.12-1.17 1.12-1.17
<b>Castrol</b>	ANVOL PE	22 32 46	- - -	-29 -15 -6	464 480 480	19 <sup>1</sup> 30.1 <sup>1</sup> 40.3 <sup>1</sup>	3.2 <sup>1</sup> 4.1 <sup>1</sup> 4.8 <sup>1</sup>	- - -	- - -
<b>Chevron International Oil Co.</b>	HYJET IV	-	-	-80	360	10.58 <sup>1</sup>	3.57 <sup>1</sup>	-	0.999
<b>E. F. Houghton &amp; Co.</b>	HOUGHTO- SAFE	1010 1115 1120 1130 1055	green green green green green	-30 -10 -5 5 25	455 475 475 475 475	90 150 230 290 600	38 40 43 46 52	- - - - -	1.20 1.17 1.13 1.12 1.15
	VITAL **	5310	-	-15	465	73.9	9.21	108	0.990
<b>Mobil</b>	PYROGUARD	53	blue	0	475	215	42	-	1.17
<b>Monsanto Company</b>	SKYDROL	LD-4 500B-4	purple purple	-80 -80	330 350	10.8-11.4 <sup>1</sup> 11.6-12.1 <sup>1</sup>	3.8-4 <sup>1</sup> 3.8-4 <sup>1</sup>	- -	.996-1.002 1.057-1.065
	PYDRAUL C **	230C 312C 68S	green green green	-20 0 -10	- - -	215 309 316	49 54 48.3	- - -	1.040-1.060 1.030-1.050 1.097
	PYDRAUL E	10-E 29ELT 50E 65E 90E 115E	blue blue bl-green bl-green bl-green bl-green	-70 -40 -5 0 10 -10	- - - - - -	60 145 231 312 415 565	35 52 46 50 52 56	- - - - - -	1.085-1.095 1.09-1.11 1.145-1.165 1.142-1.162 1.145-1.165 1.145-1.165
<b>Stauffer Chemical Co.</b>	FRYQUEL	90 150 220 300 550	clear grn clear grn clear grn clear grn clear grn	-30 -10 0 5 20	440 455 485 485 485	91 153 219 302 545	36.9 41 44.3 46.1 53.4	- - - - -	1.21 1.166 1.15 1.151 1.155
	FRYTEK**	295-E7468	-	-25	455	293	47	22	1.090
<b>Sun Oil Co.</b>	SUNGUARD**	350	2.5	-25	400	345	51.9	70	1.034

\*\*Blend of phosphate ester &  
petroleum stocks

<sup>1</sup>Viscosity shown in cSt

## SILICATE ESTER

Company Name	Brand Name	Grade/Callout	Color D-1500	Pour Point °F	Freeze Point °F	Viscosity 100 °F	SUS 210 °F	Visc. Index	Spec. Grav.
<b>Chevron</b>	CHEVRON	M2V		-110	420	16.9 <sup>1</sup>	5.25 <sup>1</sup>	-	0.946

## SYNTHETIC HYDRAULIC FLUID/OIL

Company Name	Brand Name	Grade/Callout	Color D-1500	Pour Point °F	Flash Point °F	Viscosity 100 °F	SUS 210 °F	Visc. Index	Spec. Grav.
<b>Bel-Ray Co.</b>	BEL-RAY	40	ylw-grn	-80	340	85	41	197	0.837
	SE-2	45	ylw-grn	-80	355	112	44.6	185	0.841
		50	ylw-grn	-80	355	200	54	183	0.879
		65	ylw-grn	-45	420	428	68	145	0.921
		75	ylw-grn	-40	425	555	80	145	0.923
		90	ylw-grn	-35	440	761	96	145	0.924
<b>Bray Oil Co.</b>	BRAYCO	882	straw	-65	400	14.0 <sup>1</sup>	3.5 <sup>1</sup>	129	0.8498
	MICRONIC	883	amber	-65	400	19.5 <sup>1</sup>	3.5 <sup>1</sup>	128	0.8576
<b>Mobil Oil Corp.</b>	SYNTHETIC GAS	SHC-		-65	395	487	76	149	0.904
	TURBINE	SHC-824	L4.5	-65	480	159	45.9	135	0.835
	LUBRICANT	SHC-825	L4.5	-65	480	225	52.5	148	0.835
		SHC-624	L1.0	-65	440	145/165	-	135	0.853
		SHC-626	L1.0	-65	450	290/340	-	135	0.853
		SHC-629	L1.0	-65	460	700/770	-	135	0.853
		SHC-630	L1.0	-50	460	1,100/1,230	-	145	0.853
		SHC-634	3.0	-40	500	1,950/2,150	-	145	0.853
	SHC-639	L3.0	-40	450	5000	460/490	180	0.862	
<b>Quaker Chemical Corp.</b>	QUINTO-	220	amber	-15	500	220	55	185	0.9088
	LUBRIC-822	300	amber	-15	500	300	60	160	0.9107
		450	amber	-15	500	450	70	140	0.922
<b>Stauffer Chemical Co.</b>	FRYLUBE	15	-	-30	485	155	41.5	35	1.13
		22	-	-25	490	231	44.4	19	1.11
		30	-	-20	485	292	46.6	17	1.102
<b>Texaco Oil Co.</b>	SAFETYTEX	215	-	-65	-	230	-	-	1.145

<sup>1</sup>CS at listed temperature