

Motor Oil Technical Specifications (Alphabetical)

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Legend:

P/S/B = Petroleum or Synthetic or Synthetic Blend

API = Most Current American Petroleum Institute Specification(s)

VI = Viscosity Index (ASTM D-2270)

PP = Pour Point (ASTM D-97)

FP = Flash Point (ASTM D-92)

FRP = Fire Point (ASTM D-92)

HT/HS = High Temperature High Shear Viscosity (ASTM D-4683)

Noack = Noack Volatility (DIN 51581) 250°C for 1 hour, % weight loss

TBN = Total Base Number (ASTM D-2896)

4 Ball = Four-Ball Wear Test (ASTM D 4172) Scar diameter, mm

Phos = Phosphorus ppm

Zinc = Zinc ppm

CCS = Cold Crank Simulator Apparent Visc. @ x°C, cP (ASTM D 5293)

Ash % = Sulfated ash percentage of motor oil volume (ASTM D-874)

Rev. = Last revision of the manufacturer's technical specification sheet

0w20																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Mobil 1	SuperSyn	S	SL/CF	165	-70	453	-	2.61	13.00	5.0	-	-	-	6200 @ -35	1.28	Mar-03	711
Mobil 1	SuperSyn	S	SL/CF	164	-65	450	-	2.60	13.00	5.0	-	-	-	5550 @ -35	-	Feb-03	702
Synergyn	Racing Oil	S	SJ/CG-4	165	-65	410	-	2.60	13.00	5.0	-	-	-	-	-	Feb-01	663
Valvoline	VR-1 Racing Syn	S	-	162	-58	420	-	2.60	13.00	5.0	-	-	-	3200 @ -30	-	Jul-98	663
Valvoline	SynPower Racing	S	-	162	-49	420	-	2.60	13.00	5.0	-	-	-	3200 @ -30	-	Oct-99	654
Torco	MPZ Racing	S	SL/SJ	-	-40	392	419	2.60	13.00	5.2	-	-	-	2150 @ -30	-	2001	455
5w20																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
AMSOIL	XL7500	S	SL/SJ	183	-51	444	468	2.90	8.20	10.2	0.38'	-	-	3670 @ -30	-	Apr-03	732
AMSOIL	XL7500	S	SL/SJ	183	-30	444	468	2.90	8.20	10.2	0.38'	-	-	3670 @ -30	~1.0	Jul-02	711
Red Line	20 Wt RACE ONLY	S	-	142	-58	455	-	2.60	6.00	5.0	-	-	-	3000 @ -25	-	Apr-99	699
Pennzoil	Multigrade	P	SL/SJ	158	-49	445	-	2.65	13.00	5.0	-	-	-	6600 @ -30	-	May-02	676
Pennzoil	Multigrade	P	SL/SJ	158	-49	445	-	2.65	13.00	5.0	-	-	-	6600 @ -30	-	Nov-02	676
Havoline	Petroleum	P	SL/SJ	148	-27	460	-	2.60	13.00	8.5	-	940	1120	5200 @ -30	0.90	Mar-03	665
Chevron	Supreme	P	SL/SJ	148	-27	460	-	2.60	13.00	8.3	-	940	1120	5200 @ -30	0.90	Mar-03	665
Havoline	Petroleum	P	SL/SJ	154	-45	435	-	2.60	13.00	7.8	-	980	1090	5300 @ -30	0.86	Jul-02	663
Chevron	Supreme	P	SL/SJ	154	-45	435	-	2.60	13.00	7.1	-	980	1090	5300 @ -30	0.86	Sep-02	661
TropArtic	Conventional	P	SL	156	-31	448	-	2.60	13.00	5.0	-	-	-	5800 @ -30	-	?	658
Conoco	Hydroclear	P	SL/SJ	147	-49	435	-	2.60	13.00	5.0	-	-	-	5900 @ -30	-	Nov-01	654
Valvoline	DuraBlend	B	SL/CF	154	-33	428	-	2.60	10.00	8.1	-	960	-	6600 @ -30	1.00	Apr-02	653

76 Lubricants	Super	P	SL	157	-33	430	-	2.70	13.00	8.0	-	-	1080	6000 @ -30	0.92	Jul-01	651
Kendall	GT-1	P	SL/SJ	150	-38	432	-	2.60	13.00	7.4	-	-	1100	6200 @ -30	0.90	Mar-02	648
Valvoline	All Climate	P	SL/SJ	157	-38	428	-	2.60	14.60	8.0	-	970	1080	6600 @ -30	0.92	Apr-02	647
Q. State	Multigrade	P	SL/SJ	151	-27	445	-	2.60	13.00	5.0	-	-	-	-	-	Oct-01	646
Q. State	Peak Performance	P	SL/SJ	151	-27	445	-	2.60	13.00	5.0	-	-	-	6600 @ -30	-	Jan-02	646
Petro Canada	Supreme MultiGrade	P	SL	157	-38	424	-	2.60	13.00	6.8	-	-	-	3270 @ -30	0.90	Mar-02	646
Shell	FormulaShell	P	SL/SJ	152	-44	421	-	2.60	13.00	7.8	-	-	1090	6070 @ -30	0.90	2001?	646
Shell	FormulaShell	P	SL/SJ	151	-44	421	-	2.60	13.00	7.8	-	-	1090	6070 @ -30	0.90	2001?	645
Royal Purple	Multi-Grade	S	SL	156	-	455	480	2.60	13.00	5.0	-	-	-	-	-	?	634
Exxon	Superflo	P	SL/SJ	153	-22	435	-	2.60	13.00	5.0	-	-	-	6600 @ -30	0.87	Mar-03	633
Castrol	GTX	P	SL/SJ	158	-22	400	430	2.80	13.00	5.0	-	1000	1100	6600 @ -30	-	Jun-02	607
Motorcraft	Prem. Syn. Blend	B	SJ	161	-49	365	-	2.65	13.00	7.5	-	-	-	-	0.94	?	604
Exxon	Superflo	P	SL/SJ	153	-33	392	-	2.60	13.00	5.0	-	-	-	4470 @ -30	-	Oct-01	601
Mobil	Drive Clean	P	SL/SJ	153	-33	392	-	2.60	13.00	5.0	-	-	-	2200 @ -25	-	May-02	601
Citgo	SuperGard	P	SL/SJ	154	-	421	-	2.60	13.00	5.0	-	-	-	4080 @ -30	-	Jul-01	598
Citgo	SuperGard	P	SL/SJ	154	-	421	-	2.60	13.00	5.0	-	-	-	4080 @ -30	-	Dec-02	598
Mobil	Drive Clean	P	SL	153	-26	392	-	2.60	13.00	5.0	-	-	-	5130 @ -30	-	Apr-03	594
SAE 30																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Neo	Neo	S	CE/SG	180	-50	470	520	2.90	13.00	8.0	-	-	-	n/a	1.03	?	735
Schaeffer	Moly Pure	S	SG/CE	132	-45	465	500	5.00	13.00	10.0	-	-	-	n/a	1.00	Oct-91	723
Precision	102P	P	SJ/CF-4	127	-25	514	-	2.90	13.00	12.0	-	-	-	n/a	-	Jan-03	709
76 Lubricants	ED Guardol 1500	P	CF	117	-40	455	-	3.60	13.00	15.2	-	-	1310	n/a	2.00	Jul-01	675
AMSOIL	SAE 30	S	CF/SH	124	-36	450	486	2.90	7.40	12.0	0.38"	-	-	n/a	~1.5	?	670
AMSOIL	SAE 30	S	CH-4/SJ	124	-36	450	486	2.90	7.40	12.0	0.38"	-	-	n/a	~1.5	Dec-01	670
76 Lubricants	T5X HD Mono.	P	CF/SJ	116	-29	470	-	3.60	13.00	8.1	-	-	1300	n/a	0.90	Jul-01	664
Mobil	Delvac 1330	P	CG-4	117	-22	482	-	2.90	13.00	12.0	-	-	-	n/a	1.40	Aug-02	664
Mobil	Delvac 1330	P	CF/SF	117	-22	482	-	2.90	13.00	12.0	-	-	-	n/a	1.40	Mar-03	664
Pennzoil	LongLife HD	P	CF-2/CF	105	-27	482	-	3.60	13.00	7.5	-	-	-	n/a	<1.0	May-01	662
Pennzoil	LongLife HD	P	CF/SL	107	-22	482	-	3.80	13.00	7.0	-	-	-	n/a	<1.0	Jul-02	662
Royal Purple	RP	S	SJ/CF	119	-33	460	515	2.90	13.00	13.5	-	-	-	n/a	-	?	658
Chevron	RPM Heavy Duty	P	SL/CF	101	-38	482	-	2.90	13.00	8.0	-	1000	1110	n/a	1.03	Sep-02	656
Texaco	Ursa Super Plus	P	SL/CF	101	-38	482	-	2.90	13.00	8.0	-	1000	1110	n/a	1.03	Jul-02	656
76 Lubricants	Super	P	SL	104	-33	470	-	3.70	13.00	6.2	-	-	990	n/a	0.80	Jul-01	654
76 Lubricants	Guardol QLT	P	SL/CF	114	-27	460	-	3.60	13.00	10.2	-	-	1270	n/a	1.35	Sep-02	654
Chevron	RPM Heavy Duty	P	SL/CF	101	-38	482	-	2.90	13.00	7.2	-	1000	1090	n/a	0.95	Jun-03	654
76 Lubricants	T5X HD Mono.	P	CF	116	-27	465	-	3.50	13.00	7.2	-	-	980	n/a	0.88	Sep-02	653
Kendall	Dual Action	P	SJ	112	-11	489	-	3.50	13.00	5.0	-	-	1000	n/a	0.60	Jun-00	653
Havoline	Petroleum	P	SL/SJ	108	-27	482	-	2.90	13.00	7.6	-	940	1030	n/a	0.90	Mar-03	651

Chevron	Supreme	P	SL/SJ	108	-27	482	-	2.90	13.00	7.4	-	940	1030	n/a	0.90	Mar-03	651
76 Lubricants	Guardol	P	CF-4/SJ	108	-29	460	-	3.60	13.00	9.2	-	-	1190	n/a	1.20	Jul-01	648
Citgo	Citgard 600	P	CF/SL	102	-6	482	-	3.70	13.00	11.0	-	-	1400	n/a	1.50	Sep-02	647
Citgo	Citgard 600	P	CF/SL	102	-6	482	-	3.70	13.00	11.0	-	-	-	n/a	1.50	Dec-02	647
Mystik	JT-8 Super HD	P	SL/CF	103	-11	489	-	2.90	13.00	12.0	-	-	-	n/a	1.60	Sep-02	646
Mystik	JT-8 Super HD	P	SL/CF	103	-11	489	-	2.90	13.00	12.0	-	-	-	n/a	1.60	Dec-02	646
TropArtic	Single Grade	P	SL/CD	103	-22	489	-	2.90	13.00	5.0	-	-	-	n/a	0.80	?	643
Havoline	Petroleum	P	SL/SJ	116	-27	455	-	3.50	13.00	5.0	-	-	-	n/a	0.86	Jul-01	639
Shell	FormulaShell	P	SL/SJ	116	-33	455	-	2.90	13.00	6.8	-	-	1110	n/a	0.91	2001 ?	637
Chevron	Delo 400	P	CF/SJ	104	-24	468	-	2.90	13.00	10.2	-	1160	1270	n/a	1.35	Jan-03	635
Shell	FormulaShell	P	SL/SJ	114	-33	455	-	2.90	13.00	6.8	-	-	1110	n/a	0.91	Dec-02	635
Texaco	Ursa Premium TDX	P	SL/CF	104	-24	468	-	2.90	13.00	9.2	-	1140	1270	n/a	1.18	Aug-02	633
Chevron	Supreme	P	SL/SJ	114	-22	464	-	2.90	13.00	7.1	-	980	1090	n/a	0.86	Sep-02	633
Conoco	HD Fleet	P	CF/CF-2	103	-27	470	-	2.90	13.00	7.1	-	-	-	n/a	1.00	Oct-02	633
Conoco	Hydroclear Power D	P	CF/SH	103	-27	470	-	2.90	13.00	7.1	-	-	-	n/a	1.00	Aug-02	633
Chevron	Delo 300	P	CF/SJ	100	-27	459	-	2.90	13.00	14.0	-	1190	1320	n/a	1.61	Sep-00	633
Citgo	Citgard 500	P	CF/SL	100	-11	471	-	3.70	13.00	8.0	-	-	1040	n/a	1.00	Sep-02	633
Citgo	Citgard 500	P	CF/SL	100	-11	471	-	3.70	13.00	8.0	-	-	-	n/a	1.00	Dec-02	633
Kendall	GT-1	P	SL/SJ	101	-29	471	-	2.90	13.00	6.2	-	-	1000	n/a	0.80	Mar-02	632
76 Lubricants	Firebird HD	P	CF-4/SJ	111	-24	445	-	3.60	13.00	9.2	-	-	1270	n/a	1.20	Jul-01	631
Chevron	Delo 400	P	CF/SJ	104	-22	468	-	2.90	13.00	8.7	-	1190	1320	n/a	0.96	Aug-00	630
Texaco	Ursa	P	CF/CD	99	-22	475	-	2.90	13.00	7.0	-	980	1080	n/a	0.76	Feb-02	629
Mobil	Delvac 1630	P	CF/SF	117	-22	446	-	2.90	13.00	12.0	-	-	-	n/a	1.40	May-03	628
Kendall	Super-D 3	P	SJ/CF	115	-17	453	-	2.90	13.00	11.0	-	-	-	n/a	1.30	Mar-00	626
Royal Purple	MonoGrade	S	SJ/CF	119	-	460	515	3.70	13.00	5.0	-	-	-	n/a	-	?	624
Phillips 66	Super HD II	P	SJ/CF	108	-22	457	-	2.90	13.00	8.0	-	-	-	n/a	0.85	?	622
Wolf's Head	Heavy Duty	P	SL/SJ	107	-6	465	-	3.65	13.00	5.0	-	-	-	n/a	<.9	Oct-01	622
Schaeffer	Supreme 7000	B	CF/SJ	105	-10	455	475	3.50	13.00	10.0	-	-	-	n/a	1.20	?	621
Mystik	Power Lubricants	P	SL/CF	100	-11	471	-	2.90	12.00	8.0	-	-	-	n/a	1.00	Sep-02	620
76 Lubricants	Triton QLT	P	CF/SJ	118	0.4	445	-	3.50	13.00	13.0	-	-	1300	n/a	1.65	Jul-01	620
Kendall	Super-D 3	P	SL/CF	101	-11	453	-	3.60	13.00	10.5	-	-	1400	n/a	1.40	Sep-02	619
Mobil	Delvac 1230	P	CF-2/SH	112	-17	442	-	3.50	13.00	7.8	-	-	-	n/a	0.83	Jan-97	618
Mystik	Power Lubricants	P	SL/CF	100	-11	471	-	2.90	13.00	8.0	-	-	-	n/a	1.00	Dec-02	617
Exxon	Superflo	P	SL/SJ	107	-6	453	-	3.70	13.00	5.0	-	-	-	n/a	-	Oct-01	611
Lubriplate	Super GPO	-	SJ/CF	100	-30	435	465	2.90	13.00	13.0	-	-	-	n/a	-	Mar-02	610
Citgo	SuperGard	P	SL	100	-	478	-	2.90	13.00	5.0	-	-	-	n/a	-	Jul-00	607
Citgo	SuperGard	P	SL	100	-	478	-	2.90	13.00	5.0	-	-	-	n/a	-	Dec-02	607
Pennzoil	HD	P	SL/SJ	105	-22	450	-	2.90	13.00	5.0	-	-	-	n/a	-	Jul-01	606
Phillips 66	HDS	P	SJ/CF	110	-22	435	-	2.90	13.00	10.0	-	-	-	n/a	1.00	?	606
Chevron	ECO	P	SJ/CF	104	-	450	-	3.70	13.00	8.0	-	1000	1100	n/a	1.20	Aug-00	605
Schaeffer	Moly Bond X-200	P	SJ/CF	106	-	460	500	2.90	13.00	10.0	-	-	-	n/a	1.20	Oct-00	605
Shell	Rimula	P	CF/CD	97	-10	455	-	2.90	13.00	12.0	-	-	-	n/a	1.65	Dec-02	605

Schaeffer	Micron Moly Racing	P	SJ	102	-	455	490	3.50	13.00	8.3	-	-	-	n/a	1.00	?	605
LE	Monolec Plus	P	CD	95	-22	460	-	2.90	13.00	4.2	-	-	-	n/a	0.35	?	604
Exxon	Superflo	P	SJ	110	-	453	-	3.25	13.00	5.0	-	-	-	n/a	-	Mar-00	599
Q. State	Universal HDX	P	CF/SL	105	-22	435	-	2.90	13.00	7.0	-	-	-	n/a	0.95	Aug-02	595
Mobil	Drive Clean	P	SL/SJ	105	-6	453	-	2.90	13.00	5.0	-	-	-	n/a	-	Apr-03	593
Q. State	FCI HDX	P	CF/SJ	106	-5	425	450	3.70	13.00	9.2	-	-	-	n/a	-	Sep-02	589
Wolf's Head	Special Duty	P	CH-4/SJ	109	-5	435	-	2.90	13.00	9.2	-	-	-	n/a	<1.0	Sep-01	586
Castrol	Heavy Duty	P	SH/SJ	107	-	450	470	2.90	13.00	5.0	-	1300	1400	n/a	1.00	2001 ?	586
Lubriplate	Super HDS	-	SJ/CF	106	-25	420	455	2.90	13.00	5.0	-	-	-	n/a	-	May-97	580
Conoco	Hydroclear Super	P	SL/SJ	110	-27	410	-	2.90	13.00	5.0	-	-	-	n/a	-	Nov-01	576
LE	Monolec GFS	P	CF/SJ	95	-17	425	-	2.90	13.00	10.0	-	-	-	n/a	1.00	?	576
Valvoline	VR-1 Racing	P	SJ/CD	111	-	415	-	2.90	13.00	12.0	-	1140	1200	n/a	1.50	Sep-99	569
Q. State	Single-Grade HD	P	SJ/SH	113	-	425	460	2.90	13.00	5.0	-	-	-	n/a	-	May-01	567
Lyondell	Fleet S3 Plus	P	CF/SJ	101	-	430	-	2.90	13.00	8.0	-	-	-	n/a	0.90	Dec-00	566
Q. State	HD 4-Cycle	P	SJ/SH	95	+14	455	-	2.90	13.00	5.0	-	-	-	n/a	-	Jun-00	565
Mobil	Drive Clean HD30	P	SJ	107	-	428	-	2.90	13.00	5.0	-	-	-	n/a	-	May-02	564
Castrol	Heavy Duty	P	SL/SJ	106	21	446	470	2.90	13.00	5.0	-	800	850	n/a	-	Jun-02	560
Q. State	Single-Grade	P	SL/SJ	101	-	425	460	2.90	13.00	5.0	-	-	-	n/a	-	Sep-01	555
Pennzoil	4-Cycle	P	SJ	105	-10	410	-	2.90	13.00	5.0	-	-	-	n/a	1.00	Apr-99	554
Superior Lub.	HD	P	SH/CF	95	-	420	-	2.90	13.00	8.0	-	-	-	n/a	0.95	?	550
Shell	Rotella T Mono	P	CF-4/SJ	-	-	450	-	2.90	13.00	7.3	-	-	-	n/a	1.00	Dec-02	484
Valvoline	Maxlife	P	SL/SJ	-	-6	430	-	2.90	13.00	8.0	-	950	1080	n/a	-	Oct-02	471
Lyondell	Supreme	P	SJ	-	-	428	-	2.90	13.00	5.0	-	-	-	n/a	-	Dec-00	457
Valvoline	All Fleet Extra	P	CI-4/SL	109	-17	-	-	3.70	13.00	11.0	-	-	1600	n/a	1.50	Jul-02	183
Valvoline	All Fleet Extra	P	SL/CF	109	-17	-	-	3.70	13.00	11.0	-	-	1600	n/a	1.50	Feb-03	183
Valvoline	All Fleet Plus	P	CF-4/SL	113	-11	-	-	3.71	13.00	8.0	-	-	1100	n/a	<1.0	Jul-02	175
Valvoline	All Fleet Plus	P	CF-4/SL	113	-11	-	-	3.71	13.00	8.0	-	-	1100	n/a	<1.0	Feb-03	175
Valvoline	All Fleet Super	P	CD	104	-11	-	-	2.90	13.00	14.0	-	-	1200	n/a	1.80	Sep-01	162
Exxon	XD3	P	CF	100	-6	-	-	3.70	13.00	7.3	-	-	-	n/a	0.80	Nov-02	156
0w30																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
AMSOIL	S2000	S	SL/CF	195	-65	439	477	3.40	8.60	11.0	0.39'	-	-	5520 @ -35	-	Mar-03	763
AMSOIL	S2000	S	SL/CF	196	-60	439	464	3.50	9.20	11.0	0.37'	-	-	2993 @ -30	~1.0	Sep-01	759
Mobil 1	Tri-Syn	S	SJ/CF	176	-65	460	-	2.90	13.00	5.0	0.61'	-	-	2900 @ -30	-	May-01	730
Petro Canada	Duron XL Blend	B	CH-4/SJ	176	-54	448	-	3.50	13.00	9.0	-	-	-	5249 @ -35	1.20	Aug-02	727
Chevron	Delo 400 Synth.	S	SJ/CG-4	190	-76	419	-	2.90	13.00	10.0	-	1140	1300	2780 @ -30	1.10	Sep-02	724
Mobil 1	SuperSyn	S	SL/CF	175	-65	453	-	2.99	13.00	5.0	-	-	-	6200 @ -35	1.20	Mar-03	724
Mobil 1	SuperSyn	S	SL/CF	176	-65	450	-	2.90	13.00	5.0	-	-	-	3800 @ -35	-	Feb-03	720
Petro Canada	Blend PCMO	B	SL	173	-54	459	-	2.90	13.00	7.1	-	800	-	5190 @ -35	0.90	Mar-02	719
Pennzoil	Long Life HD	B	CG-4/SJ	182	-60	428	-	3.45	13.00	9.0	-	-	-	6200 @ -35	1.20	Oct-98	718

Appendix A

Castrol	Syntec	S	SL/CF	175	-44	437	450	2.95	13.00	5.0	-	900	1100	6200 @ -35	-	Jun-02	686
BG	Hi-LOW30	S	-	162	-65	420	-	2.90	13.53	8.3	-	-	-	2775 @ -30	0.99	Dec-99	681
BG	Hi-Performance ATV	S	-	168	-65	413	-	2.90	13.00	7.7	-	-	-	3808 @ -35	0.91	Jun-03	680
Castrol	Syntec	S	SL/CF	181	-44	410	430	3.10	13.00	5.0	-	900	1000	2750 @ -30	0.90	2001 ?	668
76 Lubricants	Synthetic HD Arctic	S	CH-4/SJ	176	-49	370	-	3.30	13.00	9.7	-	-	1270	5500 @ -35	1.20	Aug-02	641
Shell	Rotella T Blend	B	CG-4/SJ	-	-45	410	-	2.90	13.00	9.0	-	-	-	6200 @ -35	1.20	Dec-02	492
5w30																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
AMSOIL	XL7500	S	SL/SJ	196	-60	453	482	3.10	8.80	10.1	0.38'	-	-	2320 @ -25	-	Apr-03	765
Schaeffer	Moly Pure	S	SJ	185	-60	465	500	3.80	13.00	8.0	-	-	-	2100 @ -25	0.90	?	763
AMSOIL	5w30	S	SL/CF	182	-60	446	-	3.50	6.90	11.0	0.35"	-	-	2555 @ -25	~1.0	Oct-01	759
AMSOIL	XL7500	S	SL/SJ	196	-60	444	468	3.10	8.80	10.1	0.38'	-	-	2320 @ -25	-	Jul-02	756
AMSOIL	S3000	S	CH-4/SL	175	-60	446	482	3.50	8.60	12.0	0.39'	-	-	6131 @ -30	~1.5	Jan-02	749
AMSOIL	S3000	S	CI-4/SJ	175	-60	446	482	3.50	8.60	12.0	0.39'	-	-	6131 @ -30	~1.5	Jan-02	749
Havoline	Synthetic	S	SL/CF	172	-44	471	-	2.90	10.00	8.6	-	980	1070	3700 @ -30	0.93	Sep-02	732
Havoline	Synthetic	S	SJ/CF	160	-65	468	-	3.07	13.00	5.0	-	-	-	2320 @ -25	1.10	May-00	725
Exxon	Superflo Syn.	S	SJ	159	-62	471	-	3.10	13.00	5.0	-	-	-	2200 @ -25	-	Oct-99	725
Valvoline	SynPower	S	SL/CF	173	-44	468	-	2.90	12.00	9.0	-	1000	-	4200 @ -30	1.10	Apr-02	725
Valvoline	SynPower	S	SL/CF	173	-44	468	-	2.90	12.00	9.0	-	1000	-	4200 @ -30	1.10	Mar-03	725
Chevron	Supreme Syn.	S	SL/CF	161	-62	464	-	2.90	13.00	9.0	-	920	1280	2400 @ -25	1.12	Oct-02	724
Havoline	Energy	P	SJ	188	-54	450	-	2.95	14.50	5.0	-	-	-	6600 @ -30	-	?	718
Kendall	Elite	S	SJ/CF	160	-54	468	-	3.10	13.00	5.0	-	-	-	3910 @ -30	-	Sep-98	715
Kendall	SHP	S	SJ/CF	160	-54	468	-	2.90	13.00	5.0	-	-	-	3820 @ -30	-	Jul-00	711
Mobil 1	Tri-Syn	S	SJ/CF	162	-65	455	-	2.90	13.00	5.0	0.59'	-	-	2100 @ -25	-	May-01	711
Valvoline	SynPower Racing	S	-	164	-49	468	-	2.90	13.00	5.0	-	-	-	2400 @ -25	-	Oct-99	710
Mobil 1	SuperSyn	S	SL/CF	169	-54	455	-	2.90	13.00	5.0	-	-	-	3600 @ -30	-	Feb-03	707
Red Line	Passenger	S	SJ/CF	153	-49	455	-	2.90	6.00	5.0	-	-	-	3300 @ -25	-	May-00	707
Valvoline	HP Syn	S	SH/CD	164	-40	460	-	3.50	13.00	5.0	-	1200	1200	3300 @ -25	-	Jul-98	705
Valvoline	VR-1 Racing Syn	S	SH/CD	164	-40	460	-	3.50	13.00	5.0	-	1200	1200	3300 @ -25	-	Jul-98	705
Petro Canada	Synthetic PCMO	S	SL	169	-44	455	-	2.90	13.00	6.5	-	800	-	3920 @ -30	0.90	May-02	700
Castrol	Syntec	S	SL/CF	172	-38	455	475	3.00	13.00	5.0	-	900	1000	2400 @ -25	0.90	2001 ?	696
Q. State	Synthetic	S	SL/CF	177	-49	440	482	2.90	13.00	5.0	-	-	-	6600 @ -30	-	Oct-02	695
Valvoline	Durablend	B	SL/CD	161	-38	460	-	2.90	13.00	8.1	-	960	-	5800 @ -30	1.00	Apr-02	694
Neo	Neo	S	SJ	170	-60	430	-	2.90	13.00	6.2	-	-	-	3000 @ -25	0.64	?	691
Kendall	GT-1 Synthetic	S	SL/CF	166	-38	446	-	3.10	13.00	7.9	-	-	1000	4150 @ -30	1.00	Mar-02	689
Kendall	SHP Syn	S	SL/CF	166	-38	446	-	3.10	13.00	7.9	-	-	1000	4150 @ -30	1.00	Mar-02	689
Valvoline	Special Syn. Racing	S	-	157	-40	460	-	2.90	13.00	5.0	-	1200	1200	5700 @ -30	-	Mar-03	686
Petro Canada	Blend PCMO	B	SL	162	-49	441	-	2.90	13.00	6.8	-	900	-	4130 @ -30	0.80	Mar-02	685
Conoco	Syncon	S	SL/SJ	170	-45	440	-	2.90	13.00	5.0	-	-	-	6600 @ -30	-	May-02	684
Mobil 1	SuperSyn	S	SL/CF	167	-49	435	-	3.08	13.00	5.0	-	-	-	6600 @ -30	1.20	Mar-03	684

Appendix A

Havoline	Petroleum	P	SL/SJ	159	-33	450	-	2.90	13.00	7.6	-	940	1030	5700 @ -30	0.90	Mar-03	676
Chevron	Supreme	P	SL/SJ	159	-33	450	-	2.90	13.00	7.4	-	940	1030	5700 @ -30	0.90	Mar-03	676
Castrol	Syntec	S	SL/CF	171	-38	437	450	2.92	13.00	5.0	-	900	1100	6600 @ -30	-	Jun-02	675
Chevron	Supreme Syn. Blend	B	SL	159	-31	450	-	2.90	13.00	7.5	-	940	1030	5700 @ -30	0.90	Jun-03	674
Schaeffer	Supreme 7000	B	SL	180	-	448	485	3.50	13.00	7.1	-	-	-	5073 @ -30	0.86	Jul-02	673
Chevron	Supreme	P	SL/SJ	159	-45	435	-	2.90	13.00	7.1	-	980	1090	6300 @ -30	0.86	Sep-02	672
Havoline	Petroleum	P	SL/SJ	159	-45	435	-	2.90	13.00	7.1	-	980	1090	5300 @ -30	0.86	Jul-02	672
TropArtic	Synthetic	S	SL	158	-60	425	-	2.90	13.00	5.0	-	-	-	3100 @ -25	0.93	?	672
Citgo	SuperGard Blend	B	-	154	-27	455	-	3.20	13.00	5.0	-	-	-	5360 @ -30	-	Dec-02	671
Q. State	Synthetic	S	SJ/CF	151	-49	440	482	2.90	13.00	5.0	-	-	-	6600 @ -30	-	May-01	669
Petro Canada	Max MultiGrade	P	SL	160	-44	430	-	2.90	13.00	6.6	-	-	-	5000 @ -30	0.80	Feb-02	666
Petro Canada	Supreme MultiGrade	P	SL	159	-44	430	-	2.90	13.00	6.8	-	-	-	4310 @ -30	0.80	Mar-02	666
Citgo	SuperGard Blend	B	-	144	-33	446	-	3.30	13.00	5.0	-	-	-	2760 @ -25	-	May-02	660
Q. State	Higher Mileage	P	SJ	176	-43	410	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Sep-00	658
Pennzoil	Multigrade	P	SL/SJ	160	-44	420	-	3.10	13.00	5.0	0.54'	-	-	6600 @ -30	-	May-02	657
Pennzoil	Multigrade	P	SL/SJ	160	-44	420	-	3.10	13.00	5.0	0.54'	-	-	6600 @ -30	-	Nov-02	657
Exxon	Superflo	P	SL/SJ	158	-22	442	-	3.10	13.00	5.0	-	-	-	6600 @ -30	0.74	Mar-03	655
Shell	FormulaShell	P	SL/SJ	159	-42	421	-	2.90	13.00	6.9	-	-	1110	6040 @ -30	0.91	Dec-02	655
Shell	FormulaShell	P	SL/SJ	156	-42	421	-	2.90	13.00	6.9	-	-	1110	6040 @ -30	0.91	2001 ?	652
Conoco	Hydroclear Super	P	SL/SJ	158	-40	424	-	2.90	13.00	5.0	-	-	-	6150 @ -30	-	Nov-01	651
76 Lubricants	Super	P	SL	154	-38	420	-	3.10	13.00	6.2	-	-	990	5450 @ -30	0.80	Jul-01	647
Motorcraft	Super Premium	P	SJ	159	-40	410	-	3.20	13.00	6.7	-	-	-	6600 @ -30	0.86	?	647
Kendall	GT-1	P	SL/SJ	152	-40	421	-	3.00	13.00	6.2	-	-	1000	6500 @ -30	0.80	Mar-02	646
Kendall	GT-1 Synthetic Blend	B	SL/SJ	157	-44	410	-	3.10	13.00	6.2	-	-	1000	5500 @ -30	0.80	Mar-02	646
Castrol	HIGH MILEAGE	P	SL/SJ	167	-27	415	415	3.30	13.00	5.0	-	1000	1100	6600 @ -30	-	Jun-02	646
Royal Purple	Multi-Grade	S	SL	161	-	455	480	2.90	13.00	5.0	-	-	-	6600 @ -30	-	?	645
Wolf's Head	Super Duty	P	SL/SJ	162	-33	420	-	2.90	13.00	5.0	-	-	-	6600 @ -30	<.9	Jul-02	644
Torco	MPZ Racing	S	SL/SJ	176	-40	397	430	2.90	13.00	5.2	-	-	-	2300 @ -25	-	2001	642
Mystik	JT-8 Premium	P	SL	162	-27	424	-	2.90	13.00	5.0	-	-	-	6480 @ -30	-	Dec-02	642
Q. State	HP Blend	B	SL/CF	165	-35	410	446	2.90	13.00	5.0	-	-	-	6600 @ -30	-	Jun-00	639
Q. State	Synthetic Blend	B	SL/CF	165	-35	410	446	2.90	13.00	5.0	-	-	-	6600 @ -30	-	May-02	639
Royal Purple	RP	S	SJ/CH-4	160	-44	395	435	2.90	13.00	10.5	-	-	-	6600 @ -30	-	?	639
Wolf's Head	Super Duty	P	SL/SJ	157	-33	420	-	2.90	13.00	5.0	-	-	-	3330 @ -30	<.9	Oct-01	639
Q. State	4x4 Blend	B	SL	164	-44	400	460	2.90	13.00	5.0	-	-	-	6600 @ -30	-	May-02	637
LE	8530 Monolec SPB	B	SJ	145	-40	420	-	2.90	13.00	6.2	-	-	-	6600 @ -30	0.64	?	636
Valvoline	All Climate	P	SL/SJ	162	-38	403	-	2.90	13.00	7.0	-	900	1050	6000 @ -30	0.80	Apr-02	636
Castrol	Syntec Blend	B	SL/SJ	160	-27	415	415	3.10	13.00	5.0	-	1000	1100	6600 @ -30	-	Jun-02	635
Exxon	Superflo	P	SL/SJ	157	-33	410	-	3.20	13.00	5.0	-	-	-	6029 @ -30	-	Oct-01	635
Kendall	Victory	B	SJ	157	-38	410	-	2.90	13.00	5.0	-	-	-	5510 @ -30	0.60	Aug-00	634
Mystik	JT-8 Premium	P	SJ/CF	162	-33	410	-	2.90	13.00	5.0	-	-	-	3400 @ -25	-	Oct-00	634
Castrol	Syntec Blend	B	SL/SJ	156	-36	410	430	3.00	13.00	5.0	-	900	900	3200 @ -25	1.00	2001 ?	633
Citgo	SuperGard	P	SL	154	-	442	-	3.20	13.00	5.0	-	-	-	5810 @ -30	-	Jul-00	631

Citgo	SuperGard	P	SL	154	-	442	-	3.20	13.00	5.0	-	-	-	5810 @ -30	-	Dec-02	631
Q. State	4x4 Blend	B	SJ/SH	158	-44	400	460	2.90	13.00	5.0	-	-	-	6600 @ -30	-	Feb-01	631
Castrol	GTX	P	SL/SJ	160	-27	410	430	3.00	13.00	5.0	-	900	1000	3100 @ -25	0.90	2001 ?	628
Q. State	HP Blend	B	SJ/CF	152	-35	410	446	2.90	13.00	5.0	-	-	-	6600 @ -30	-	Jun-00	626
Mobil	Drive Clean Plus	B	SL/CF	159	-44	392	-	2.90	13.00	5.0	-	-	-	5896 @ -30	-	Apr-03	624
TropArtic	Conventional	P	SL	155	-30	410	-	2.90	13.00	5.0	-	-	-	4688 @ -30	-	?	624
Superior Lub.	PCMO	P	SJ	154	-35	405	-	2.90	13.00	5.0	-	-	-	3300 @ -20	1.00	?	623
Schaeffer	Micron Moly	P	SL	159	-	424	455	3.20	13.00	7.1	-	-	-	6000 @ -30	0.86	Jun-02	622
Synergyn	Racing Oil	S	-	156	-30	406	-	2.90	13.00	5.0	-	-	-	6600 @ -30	-	?	621
Castrol	GTX	P	SL/SJ	160	-27	400	430	3.10	13.00	5.0	-	1000	1100	6600 @ -30	-	Jun-02	620
Q. State	Multigrade	P	SL/SJ	159	-27	405	430	2.90	13.00	5.0	-	-	-	6600 @ -30	-	Oct-01	620
Q. State	Peak Performance	P	SL/SJ	159	-27	405	430	2.90	13.00	5.0	-	-	-	6600 @ -30	-	Jan-02	620
Spectro	Spectro4	P	SH	151	-29	410	-	2.90	13.00	5.0	-	-	-	6600 @ -30	-	?	619
Kendall	Superb 100	P	SJ	155	-38	396	-	2.90	13.00	5.0	-	-	-	5900 @ -30	-	Jun-00	618
Mobil	Drive Clean	P	SL	159	-38	392	-	2.90	13.00	5.0	-	-	-	5500 @ -30	-	May-02	618
Mobil	Drive Clean	P	SL/SJ	159	-38	392	-	2.90	13.00	5.0	-	-	-	5500 @ -30	-	Apr-03	618
Kendall	GT-1	P	SJ	154	-38	396	-	2.90	13.00	5.0	-	-	-	5900 @ -30	-	Jul-00	617
Mobil	Drive Clean Blend	B	SL/CF	156	-39	392	-	2.90	13.00	5.0	-	-	-	5000 @ -30	-	May-02	616
Shell	FormulaShell Syn	S	SL/CF	-	-35	440	-	2.90	13.00	5.0	-	-	-	4300 @ -30	-	Dec-02	504
Valvoline	Maxlife	P	SL/SJ	-	-38	430	-	2.90	13.00	8.0	-	950	1080	6600 @ -30	-	Apr-02	503
Lyondell	Supreme	P	SJ	-	-40	396	-	2.90	13.00	5.0	-	-	-	3100 @ -25	-	Dec-00	465
Pennzoil	Synthetic	S	SJ	159	-54	-	-	3.05	6.90	5.0	-	-	-	2000 @ -25	-	May-00	263
Pennzoil	Synthetic	S	SL	176	-54	-	-	3.07	13.00	5.0	-	-	-	6600 @ -30	-	Jan-03	262
Pennzoil	Synthetic Blend	B	SJ	155	-49	-	-	3.00	13.00	5.0	-	-	-	3300 @ -25	-	Aug-00	235
Pennzoil	High Mileage	P	SL/SJ	165	-27	-	-	3.30	13.00	5.0	-	-	-	7000 @ -30	-	Dec-02	229
Pennzoil	Synthetic Blend	B	SL	158	-33	-	-	3.00	13.00	5.0	-	-	-	6600 @ -30	-	Jan-02	222
10w30																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Red Line	30 Wt Race ONLY	S	-	136	-58	518	-	2.90	6.00	5.0	-	-	-	3400 @ -20	-	Apr-99	762
AMSOIL	10w30	S	SL/CF	167	-54	446	-	3.50	6.60	12.2	0.35"	-	-	3444 @ -20	~1.0	Apr-01	742
AMSOIL	10w30	S	SL/CF	167	-54	446	-	3.50	6.60	12.2	0.35"	-	-	3444 @ -25	~1.0	Jun-01	742
Neo	Neo	S	SH	185	-49	470	-	2.90	13.00	8.0	-	-	-	3150 @ -20	1.03	?	739
AMSOIL	XL7500	S	SL/SJ	163	-45	453	482	3.20	4.70	10.2	0.38'	-	-	2300 @ -20	~1.0	Jul-02	731
Valvoline	SynPower	S	SL/CF	149	-44	482	-	2.90	8.00	9.0	-	1000	-	4400 @ -25	1.10	Apr-02	727
Valvoline	SynPower	S	SL/CF	149	-44	482	-	2.90	8.00	9.0	-	1000	-	4400 @ -25	1.10	Mar-03	727
Havoline	Synthetic	S	SJ/CF	148	-60	482	-	3.23	13.00	5.0	-	-	-	2300 @ -20	1.10	May-00	726
Chevron	Supreme Syn.	S	SJ	146	-60	480	-	2.90	13.00	9.2	-	920	1280	2100 @ -20	1.11	Aug-01	723
Chevron	Supreme Syn.	S	SL/CF	146	-60	480	-	2.90	13.00	9.2	-	920	1280	2100 @ -20	1.11	Oct-02	723
AMSOIL	XL7500	S	SL/SJ	163	-45	444	468	3.20	4.70	10.2	0.38'	-	-	2300 @ -20	-	Apr-03	722
Valvoline	HP Syn	S	SH/CD	155	-40	480	-	3.70	13.00	5.0	-	1200	1200	2700 @ -20	-	Jul-98	720

Appendix A

Valvoline	VR-1 Racing Syn	S	SH/CD	155	-40	480	-	3.70	13.00	5.0	-	1200	1200	2700 @ -20	-	Jul-98	720
Kendall	Elite	S	SJ/CF	146	-54	482	-	3.30	13.00	5.0	-	-	-	3910 @ -25	-	Oct-00	719
Exxon	Superflo Syn.	S	SJ	148	-54	482	-	3.10	13.00	5.0	-	-	-	2300 @ -20	-	Oct-99	717
Valvoline	SynPower Racing	S	-	155	-49	480	-	2.90	13.00	5.0	-	-	-	2720 @ -20	-	Oct-99	713
Mobil 1	Tri-Syn	S	SJ/CF	147	-65	470	-	2.90	13.00	5.0	-	-	-	2360 @ -20	-	May-01	711
Red Line	Passenger	S	SJ/CH-4	137	-45	475	-	2.90	5.00	5.0	-	-	-	3300 @ -20	-	May-00	710
Citgo	Citgard 600	P	CI-4/SL	140	-27	486	-	3.60	14.00	11.0	-	-	-	6500 @ -25	1.30	Sep-02	705
Citgo	Citgard 600	P	CI-4/SL	140	-27	486	-	3.60	14.00	11.0	-	-	-	6500 @ -25	1.30	Dec-02	705
Valvoline	Special Syn. Racing	S	-	156	-40	480	-	2.90	13.00	5.0	-	1200	1200	6200 @ -25	-	Mar-03	705
Precision	102P	P	CI-4/SL	130	-25	504	-	2.90	13.00	12.0	-	-	-	7000 @ -25	-	Jan-03	702
Mobil 1	SuperSyn	S	SL/CF	147	-49	471	-	3.17	13.00	5.0	-	-	-	7000 @ -25	1.20	Mar-03	701
Petro Canada	Synthetic PCMO	S	SL	154	-33	473	-	2.90	13.00	6.7	-	800	-	3625 @ -25	0.90	May-02	692
Castrol	Syntec	S	SL/CF	159	-27	455	475	3.50	13.00	5.0	-	900	1100	2500 @ -20	1.04	2001 ?	682
Kendall	GT-1 Synthetic	S	SL/CF	148	-38	455	-	3.20	13.00	7.9	-	-	1000	4050 @ -25	1.00	Mar-02	682
76 Lubricants	Nascar Synthetic	S	SL	148	-38	455	-	3.20	13.00	7.8	-	930	1020	4050 @ -25	0.97	Sep-02	682
Mobil	Delvac 1300 Super	P	CG-4/SH	147	-38	439	-	3.60	13.00	11.0	-	-	-	6000 @ -25	1.20	Feb-03	679
Mobil 1	SuperSyn	S	SL/CF	145	-49	455	-	2.90	13.00	5.0	-	-	-	3848 @ -25	-	Feb-03	678
Petro Canada	Duron HD	B	CI-4/SL	143	-44	441	-	3.50	13.00	9.1	-	-	-	5648 @ -25	1.20	Aug-02	677
76 Lubricants	Nascar HP	P	SJ	144	-45	450	-	3.30	13.00	5.5	-	-	1020	4700 @ -25	0.67	Jul-01	677
Castrol	Syntec	S	SL/CF	159	-33	450	450	3.10	13.00	5.0	-	900	1100	7000 @ -25	-	Jun-02	675
BG	Shear Power	B	-	145	-35	460	-	2.90	13.00	6.8	-	-	-	4993 @ -25	-	Jun-03	673
Chevron	Delo 400	P	CH-4	150	-44	439	-	2.90	13.00	10.1	-	1260	1400	3150 @ -20	1.34	Oct-01	672
Chevron	Delo 400	P	CI-4/SL	150	-44	439	-	2.90	13.00	10.1	-	1260	1400	3150 @ -20	1.34	Jan-03	672
Texaco	URSA Premium TDX	P	CI-4/SL	150	-44	439	-	2.90	13.00	10.1	-	1260	1400	6400 @ -25	1.30	Jan-03	672
Conoco	Syncon	S	SL/SJ	150	-33	460	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	May-02	672
Q. State	Synthetic	S	SL/CF	160	-40	440	482	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Oct-02	669
Havoline	Synthetic Blend	B	SL/SJ	134	-38	453	-	2.90	10.50	8.2	-	980	1090	6400 @ -25	0.90	Jul-02	668
Valvoline	Durablend	B	SL/CD	138	-38	448	-	2.90	10.32	8.1	-	960	-	5700 @ -25	1.00	Apr-02	667
Mobil	Delvac 1300 Super	P	CI-4/SL	145	-22	444	-	3.50	13.00	12.0	-	-	-	6500 @ -25	1.30	Mar-03	666
Pennzoil	LongLife HD	P	CI-4/SL	144	-38	425	-	3.50	13.00	12.0	-	-	-	6500 @ -25	1.50	Jul-02	662
Valvoline	Durablend	B	SL/CD	138	-38	448	-	2.90	13.00	8.1	-	960	-	5700 @ -25	1.00	Oct-01	659
Petro Canada	Blend PCMO	B	SL	145	-44	437	-	2.90	13.00	6.6	-	900	-	4360 @ -25	0.80	Mar-02	658
76 Lubricants	Guardol QLT	P	CH-4/SH	146	-45	415	-	3.50	13.00	10.1	-	-	1300	5600 @ -25	1.30	Jul-01	657
Chevron	Supreme	P	SL/SJ	135	-36	453	-	2.90	13.00	7.1	-	980	1090	6400 @ -25	0.86	Sep-02	657
Havoline	Petroleum	P	SL/SJ	135	-36	453	-	2.90	13.00	7.1	-	980	1090	6400 @ -25	0.86	Jul-02	657
Q. State	Synthetic	S	SJ/CF	148	-40	440	482	2.90	13.00	5.0	-	-	-	7000 @ -25	-	May-01	657
Chevron	RPM Heavy Duty	P	CI-4/SH	129	-44	446	-	2.90	13.00	9.2	-	1140	1270	5800 @ -25	1.18	Sep-02	656
Chevron	RPM Heavy Duty	P	CI-4/SH	129	-44	446	-	2.90	13.00	9.2	-	1140	1270	5800 @ -25	1.18	Jun-03	656
Texaco	URSA Super Plus	P	CI-4/SL	129	-44	446	-	2.90	13.00	9.2	-	1140	1270	6000 @ -25	1.18	Jan-03	656
Pure Power	Pure Power	P	CH-4/SJ	145	-33	430	-	2.90	13.00	13.4	0.44""	-	-	7000 @ -25	0.92	Nov-98	654
Havoline	Petroleum	P	SL/SJ	135	-31	453	-	2.90	13.00	7.6	-	940	1030	5800 @ -25	0.90	Mar-03	653
Pennzoil	LongLife HD	P	CH-4/SH	140	-27	445	-	2.90	13.00	11.0	-	-	-	7000 @ -25	1.35	May-01	653

Chevron	Supreme Blend	B	SL	139	-29	450	-	2.90	13.00	7.5	-	940	1030	5800 @ -25	0.90	Jun-03	652
Petro Canada	Max MultiGrade	P	SL	141	-33	444	-	2.90	13.00	6.6	-	-	-	4930 @ -25	0.80	Feb-02	650
Chevron	Supreme	P	SL/SJ	135	-31	450	-	2.90	13.00	7.4	-	940	1030	5800 @ -25	0.90	Mar-03	650
Chevron	ECO	P	SJ	156	-27	432	-	2.90	13.00	7.7	-	960	1010	2900 @ -20	0.67	Jul-00	649
Citgo	SuperGard Blend	B	-	133	-22	453	-	3.50	13.00	5.0	-	-	-	2720 @ -20	-	May-02	649
Kendall	Super-D 3	P	CI-4/SL	126	-33	430	-	3.70	13.00	12.0	-	-	1300	6900 @ -25	1.50	Sep-02	648
Kendall	GT-1 Synthetic Blend	B	SL/SJ	146	-38	428	-	3.10	13.00	6.2	-	-	1000	5350 @ -25	0.80	Mar-02	647
Motorcraft	Super Premium	P	SJ	139	-31	439	-	3.20	13.00	6.7	-	-	-	7000 @ -25	0.86	?	647
Shell	FormulaS Blend	B	SL/SJ	140	-44	428	-	2.90	13.00	7.0	-	-	1090	4750 @ -25	0.87	2001 ?	645
Petro Canada	Supreme MultiGrade	P	SL	144	-33	433	-	2.90	13.00	6.8	-	-	-	4320 @ -25	0.80	Mar-02	643
Schaeffer	Supreme 7000	B	SL	150	-	444	465	3.50	12.00	7.1	-	-	-	4500 @ -25	0.86	Jul-02	642
Citgo	SuperGard Blend	B	-	138	-22	441	-	3.50	13.00	5.0	-	-	-	5500 @ -25	-	Dec-02	642
LE	Monolec UltraBlend	B	CG-4/SH	145	-33	425	-	2.90	13.00	10.0	-	-	-	3500 @ -20	1.00	?	642
Kendall	Super-D 3	P	CH-4/SJ	144	-33	421	-	2.90	13.00	11.0	-	-	-	3100 @ -20	1.30	Mar-00	639
76 Lubricants	Guardol QLT	P	CI-4/SL	135	-33	415	-	3.50	13.00	12.0	-	-	1270	6650 @ -25	1.50	Sep-02	638
Pennzoil	Multigrade	P	SL/SJ	140	-33	430	-	3.20	13.00	5.0	-	-	-	7000 @ -25	-	May-02	638
Pennzoil	Multigrade	P	SL/SJ	140	-33	430	-	3.20	13.00	5.0	-	-	-	7000 @ -25	-	Nov-02	638
Shell	FormulaShell	P	SL/SJ	140	-36	430	-	2.90	13.00	6.2	-	-	1080	5620 @ -25	0.87	Dec-02	637
Exxon	Superflo	P	SL/SJ	135	-27	442	-	3.10	13.00	5.0	-	-	-	7000 @ -25	0.74	Mar-03	637
Royal Purple	RP	S	SJ/CH-4	148	-49	400	435	2.90	13.00	10.5	-	-	-	7000 @ -25	-	?	637
Chevron	Supreme Blend	B	SJ	130	-38	432	-	2.90	13.00	8.8	-	920	1120	3350 @ -20	1.12	Feb-01	637
Valvoline	VR-1 Racing	P	SH/CD	150	-27	415	-	2.90	13.00	12.0	-	1200	1140	7000 @ -25	1.50	Sep-99	635
Shell	FormulaShell	P	SL/SJ	137	-36	430	-	2.90	13.00	6.2	-	-	1080	5620 @ -25	0.87	2001 ?	634
Schaeffer	Micron Moly	P	SL	148	-	446	465	3.20	12.80	7.1	-	-	-	5800 @ -25	0.86	Aug-02	634
BG	Shear Power	B	-	148	-40	415	-	2.90	13.00	5.9	-	-	-	5253 @ -25	-	Dec-02	634
Phillips 66	Super HD II	P	CG-4	139	-49	410	-	2.90	13.00	8.0	-	-	-	2750 @ -20	0.85	?	633
TropArtic	Conventional	P	SL	139	-33	432	-	2.90	13.00	5.0	-	-	-	4936 @ -25	-	?	633
Torco	MPZ Racing	P	SL/SJ	160	-15	428	450	2.90	13.00	5.2	-	-	-	2400 @ -20	-	2001	632
Kendall	Victory	B	SJ	146	-29	428	-	2.90	13.00	5.0	-	-	-	4000 @ -25	0.60	Aug-00	632
Spectro	Golden Motor-Guard	B	SH	162	-31	410	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	?	632
Q. State	4x4 Blend	B	SL	140	-25	437	464	2.90	13.00	5.0	-	-	-	7000 @ -25	-	May-02	631
Q. State	HP Blend	B	SL/CF	143	-30	428	453	2.90	13.00	5.0	-	-	-	7000 @ -25	-	May-02	630
Q. State	Synthetic Blend	B	SL/CF	143	-30	428	453	2.90	13.00	5.0	-	-	-	7000 @ -25	-	May-02	630
Kendall	Superb 100	P	SJ	139	-29	432	-	2.90	13.00	5.0	-	-	-	5600 @ -25	-	Jun-00	629
Mystik	JT-8 Premium	P	SJ/CF	141	-28	430	-	2.90	13.00	5.0	-	-	-	3400 @ -20	-	Oct-00	628
Shell	FormulaS Blend	B	SL/SJ	140	-30	425	-	2.90	13.00	7.0	-	-	1090	4750 @ -25	0.87	Dec-02	628
Kendall	GT-1	P	SJ	137	-29	432	-	2.90	13.00	5.0	-	-	-	5600 @ -25	-	Jul-00	627
Shell	Rotella T MG	P	CI-4/SL	155	-20	410	-	2.90	13.00	11.5	-	-	-	7000 @ -25	1.47	Dec-02	627
Q. State	High Mileage	P	SJ/SH	150	-22	425	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Sep-01	626
Q. State	Higher Mileage	P	SJ	150	-22	425	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Sep-00	626
Q. State	Special Blend	B	SJ/CF	152	-35	410	446	2.90	13.00	5.0	-	-	-	3500 @ -25	-	Aug-01	626
Shell	Rotella T MG	P	CH-4/SL	155	-20	410	-	2.90	13.00	10.7	-	-	-	7000 @ -25	1.40	2001 ?	625

Lubriplate	Super GPO	-	CG-4/SH	140	-40	400	430	2.90	13.00	13.0	-	-	-	7000 @ -25	-	Mar-02	625
Q. State	4x4 Blend	B	SJ/SH	134	-25	437	464	2.90	13.00	5.0	0.60'	-	-	7000 @ -25	-	Feb-01	625
Q. State	HP Blend	B	SJ/CF	138	-30	428	453	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Jun-00	625
Royal Purple	Multi-Grade	S	SL	141	-	455	480	2.90	13.00	5.0	-	-	-	7000 @ -25	-	?	625
76 Lubricants	Super	P	SL	136	-33	420	-	3.10	13.00	6.2	-	-	990	5900 @ -25	0.80	Jul-01	624
76 Lubricants	Nascar HP	P	SL	135	-33	420	-	3.10	13.00	6.5	-	-	1060	5900 @ -25	0.84	Jul-02	624
Conoco	Hydroclear Super	P	SL/SJ	134	-40	421	-	2.90	13.00	5.0	-	-	-	6200 @ -25	-	Nov-01	624
Royal Purple	RP	S	CH-4/SJ	144	-40	400	445	2.90	13.00	10.5	-	-	-	7000 @ -25	-	?	624
Castrol	HIGH MILEAGE	P	SL/SJ	149	-22	415	415	3.30	13.00	5.0	-	1000	1100	7000 @ -25	-	Jun-02	623
Citgo	Citgard 500	P	CH-4/SH	136	-27	417	-	3.30	13.00	8.0	-	>1000	-	3090 @ -20	0.90	Jul-00	623
Superior Lub.	PCMO	P	SJ	155	-33	406	-	2.90	13.00	5.0	-	-	-	3200 @ -20	0.80	?	623
Mystik	JT-8 Premium	P	SL	136	-27	430	-	2.90	13.00	5.0	-	-	-	6570 @ -25	-	Dec-02	622
Kendall	GT-1	P	SL/SJ	135	-29	421	-	3.10	13.00	6.2	-	-	1000	6800 @ -25	0.80	Mar-02	620
Citgo	UltraLife	P	SL/SJ	144	-	435	-	3.50	13.00	5.0	-	-	-	6440 @ -25	-	Dec-02	620
Citgo	SuperGard	P	SL	137	-	451	-	3.00	13.00	5.0	-	-	-	6300 @ -25	-	Jul-00	619
Citgo	SuperGard	P	SL	137	-	451	-	3.00	13.00	5.0	-	-	-	6300 @ -25	-	Dec-02	619
Castrol	Syntec Blend	B	SL/SJ	138	-27	415	435	3.30	13.00	5.0	-	900	1000	3100 @ -20	0.90	2001 ?	617
Valvoline	All Climate	P	SL/SJ	135	-27	421	-	2.90	13.00	7.0	-	900	1050	6000 @ -25	0.80	Apr-02	616
76 Lubricants	Firebird LD	P	SJ	141	-35	405	-	3.10	13.00	5.5	-	-	1010	3060 @ -20	0.67	Jul-01	615
Wolf's Head	Super Duty	P	SL/SJ	139	-17	430	-	2.90	13.00	5.0	-	-	-	7000 @ -25	<.9	Jul-02	615
Lubriplate	Super Lo-Hi-Vis	-	SJ/CF	135	-40	410	435	2.90	13.00	5.0	-	-	-	2450 @ -20	-	May-97	614
Mystik	JT-8 Super HD	P	CI-4/SL	143	-27	406	-	2.90	14.00	11.0	-	-	-	6500 @ -25	1.30	Sep-02	614
Mystik	JT-8 Super HD	P	CI-4/SL	143	-27	406	-	2.90	14.00	11.0	-	-	-	6500 @ -25	1.30	Dec-02	614
Wolf's Head	Super Duty	P	SL/SJ	138	-17	430	-	2.90	13.00	5.0	-	-	-	3330 @ -25	<.9	Oct-01	614
Castrol	GTX	P	SL/SJ	143	-22	415	445	3.10	13.00	5.0	-	900	1000	3200 @ -20	0.80	2001 ?	613
Castrol	Syntec Blend	B	SL/SJ	138	-27	415	415	3.10	13.00	5.0	-	1000	1100	7000 @ -25	-	Jun-02	613
Castrol	GTX	P	SL/SJ	142	-22	415	445	3.10	13.00	5.0	-	1000	1100	7000 @ -25	-	Jun-02	612
Q. State	Universal HDX	P	CI-4/SL	138	-22	410	-	2.90	13.00	10.0	-	-	-	7000 @ -25	1.20	Aug-02	609
Exxon	Superflo	P	SL/SJ	132	-33	408	-	3.20	13.00	5.0	-	-	-	6100 @ -25	-	Oct-01	608
Q. State	FCI HDX	P	CH-4/SH	139	-25	405	430	2.90	13.00	9.2	-	-	-	3500 @ -20	-	Sep-02	606
Valvoline	Special Racing	P	-	133	-27	415	-	2.90	13.00	5.0	-	1200	1200	6800 @ -25	-	Dec-02	604
Q. State	Multigrade	P	SL/SJ	139	-22	410	441	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Oct-01	600
Q. State	Peak Performance	P	SL/SJ	139	-22	410	430	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Jan-02	600
Shell	Rimula Premium	P	CI-4/SL	131	-30	400	-	2.90	13.00	10.0	-	-	-	7000 @ -25	1.20	Dec-02	600
Mobil	Drive Clean Plus	B	SL/CF	145	-33	392	-	2.90	13.00	5.0	-	-	-	6290 @ -25	-	Apr-03	599
Mobil	Drive Clean Blend	B	SL/CF	140	-33	392	-	2.90	13.00	5.0	-	-	-	5500 @ -25	-	May-02	594
Mobil	Drive Clean	P	SL	134	-33	392	-	2.90	13.00	5.0	-	-	-	6200 @ -25	-	May-02	588
Mobil	Drive Clean	P	SL/SJ	134	-33	392	-	2.90	13.00	5.0	-	-	-	6200 @ -25	-	Apr-03	588
Conoco	Hydroclear Power D	P	CI-4/SL	133	-27	371	-	2.90	13.00	12.0	-	-	-	7000 @ -25	1.60	Aug-02	574
Conoco	HD Fleet Supreme	P	CI-4/SL	130	-27	371	-	2.90	13.00	11.0	-	-	-	7000 @ -25	1.60	Aug-02	569
Valvoline	Maxlife	P	SL/SJ	-	-33	446	-	2.90	13.00	8.0	-	950	1080	7000 @ -25	-	Apr-02	514
Shell	FormulaShell Syn	S	SL/CF	-	-30	445	-	2.90	13.00	5.0	-	-	-	4090 @ -25	-	Dec-02	504

Havoline	Synthetic Blend	B	SL/SJ	-	-42	425	-	2.90	13.00	5.0	-	-	-	4750 @ -25	-	May-00	496
Shell	Rotella T Blend	B	CH-4/SJ	-	-35	415	-	2.90	13.00	9.6	-	-	-	7000 @ -25	1.20	Dec-02	488
Klotz	MC Techniplate	S	SG	-	-30	425	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Dec-00	484
Klotz	MX4 Techniplate	S	SG	-	-30	425	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	May-02	484
Neo	Street	?	SH/CG-4	-	-35	410	-	2.90	13.00	8.5	-	-	1200	3500 @ -20	1.00	?	481
Shell	Rotella SB	B	CH-4/SJ	-	-35	405	-	2.90	13.00	10.7	-	-	-	7000 @ -25	1.40	?	480
Klotz	Race Techniplate	S	SH/CD	-	-30	415	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Dec-00	474
Lyondell	Supreme	P	SJ	-	-22	401	-	2.90	13.00	5.0	-	-	-	3300 @ -20	-	Dec-00	452
Pennzoil	Synthetic	S	SJ	150	-52	-	-	3.15	4.40	5.0	-	-	-	2230 @ -20	-	May-00	262
Pennzoil	Synthetic	S	SL	158	-49	-	-	3.20	13.00	5.0	-	-	-	7000 @ -25	-	Jan-03	242
Exxon	XD3	P	CI-4/SL	145	-27	-	-	3.50	13.00	10.0	-	-	-	7000 @ -25	1.20	Nov-02	223
Pennzoil	Synthetic Blend	B	SJ	136	-49	-	-	3.10	13.00	5.0	-	-	-	3300 @ -20	-	Aug-00	218
Valvoline	All Fleet Plus	P	CI-4/SL	141	-27	-	-	3.27	13.00	10.3	-	-	1600	6600 @ -25	1.40	Jul-02	215
Valvoline	All Fleet Plus	P	CI-4/SL	141	-27	-	-	3.27	13.00	10.3	-	-	1600	6600 @ -25	1.40	Jul-02	215
Pennzoil	High Mileage	P	SL/SJ	137	-22	-	-	3.40	13.00	5.0	-	-	-	7000 @ -25	-	Dec-02	198
Pennzoil	Synthetic Blend	B	SL	136	-27	-	-	3.10	13.00	5.0	-	-	-	7000 @ -25	-	Jan-02	196
SAE 40																	
																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Schaeffer	Moly Pure	S	SG/CE	142	-40	495	530	5.50	13.00	10.0	-	-	-	n/a	1.00	Oct-91	768
76 Lubricants	Triton QLT	P	CF/SJ	115	-35	485	-	4.40	13.00	13.0	-	-	1300	n/a	1.65	Jul-01	710
Conoco	HD Fleet	P	CF/CF-2	101	-26	531	-	3.70	13.00	7.1	-	-	-	n/a	1.00	Oct-02	707
Conoco	Hydroclear Power D	P	CF/SH	101	-26	531	-	3.70	13.00	7.1	-	-	-	n/a	1.00	Aug-02	707
Precision	102P	P	SJ/CF-4	113	-10	518	-	3.70	13.00	12.0	-	-	-	n/a	-	Jan-03	700
76 Lubricants	Guardol QLT	P	SL/CF	107	-27	485	-	4.50	13.00	10.2	-	-	1270	n/a	1.35	Sep-02	690
Pennzoil	LongLife HD	P	CF/SL	103	-11	509	-	4.60	13.00	7.0	-	-	-	n/a	<1.0	Jul-02	690
76 Lubricants	Guardol	P	CF/SJ	111	-26	485	-	4.40	13.00	9.2	-	-	1190	n/a	1.20	Jul-01	689
Havoline	Petroleum	P	SL/SJ	107	-22	509	-	3.70	13.00	7.6	-	940	1030	n/a	0.90	Mar-03	688
Chevron	Supreme	P	SL/SJ	107	-22	509	-	3.70	13.00	7.4	-	940	1030	n/a	0.90	Mar-03	688
Pennzoil	LongLife HD	P	CF-2/CF	99	-13	509	-	4.40	13.00	7.5	-	-	-	n/a	<1.0	May-01	685
76 Lubricants	T5X HD Mono.	P	CF/SJ	115	-29	475	-	4.40	13.00	8.1	-	-	1300	n/a	0.90	Jul-01	684
Chevron	RPM Heavy Duty	P	SL/CF	100	-27	498	-	3.70	13.00	7.6	-	1080	1200	n/a	0.85	Sep-02	675
Texaco	Ursa Super Plus	P	SL/CF	100	-27	498	-	3.70	13.00	7.6	-	1080	1200	n/a	0.85	Jul-02	675
Chevron	RPM Heavy Duty	P	SL/CF	100	-27	498	-	3.70	13.00	7.2	-	1000	1090	n/a	0.95	Jun-03	674
Mobil	Delvac 1340	P	CG-4	112	-6	493	-	3.70	13.00	12.0	-	-	-	n/a	1.40	Aug-02	670
Mobil	Delvac 1340	P	CF/SF	112	-6	493	-	3.70	13.00	12.0	-	-	-	n/a	1.40	Mar-03	670
Schaeffer	Supreme 7000	B	CF/SJ	105	-5	500	530	3.80	13.00	10.0	-	-	-	n/a	1.20	?	667
Chevron	Delo 400	P	CF/SJ	102	-27	482	-	3.70	13.00	10.2	-	1160	1270	n/a	1.35	Aug-00	666
Chevron	Delo 400	P	CF/SJ	102	-22	489	-	3.70	13.00	8.7	-	1190	1320	n/a	0.96	Aug-00	665
Texaco	Ursa Premium TDX	P	SL/CF	102	-27	482	-	3.70	13.00	9.2	-	1140	1270	n/a	1.18	Aug-02	664
Kendall	Dual Action	P	SJ	108	+1	498	-	4.40	13.00	5.0	-	-	1000	n/a	0.60	Jun-00	664

Appendix A

76 Lubricants	Super	P	SL	96	-22	490	-	4.10	13.00	6.2	-	-	990	n/a	0.80	Jul-01	663
76 Lubricants	T5X HD Mono.	P	CF	112	-27	465	-	4.20	13.00	7.2	-	-	980	n/a	0.88	Sep-02	663
Texaco	Ursa	P	CF/CD	99	-17	498	-	3.70	13.00	7.0	-	980	1080	n/a	0.76	Feb-02	663
Royal Purple	RP	S	SJ/CF	113	-33	460	515	3.70	13.00	10.5	-	-	-	n/a	-	?	662
Chevron	Delo 300	P	CF/SJ	99	-22	475	-	3.70	13.00	14.0	-	1190	1320	n/a	1.61	Sep-00	659
TropArtic	Single Grade	P	SL/CD	101	-15	498	-	3.70	13.00	5.0	-	-	-	n/a	0.80	?	659
76 Lubricants	Firebird HD	P	CF/SJ	109	-15	465	-	4.40	13.00	9.2	-	-	1270	n/a	1.20	Jul-01	656
Kendall	GT-1	P	SL/SJ	96	-22	489	-	3.70	13.00	6.2	-	-	1000	n/a	0.80	Mar-02	654
Chevron	Supreme	P	SL/SJ	112	-11	482	-	3.70	13.00	7.1	-	980	1090	n/a	0.86	Sep-02	654
Havoline	Petroleum	P	SL/SJ	112	-11	482	-	3.70	13.00	7.1	-	980	1090	n/a	0.86	Jul-02	654
Shell	FormulaShell	P	SL/SJ	113	-27	464	-	3.70	13.00	6.3	-	-	1110	n/a	0.90	2001 ?	652
Shell	FormulaShell	P	SL/SJ	112	-27	464	-	3.70	13.00	6.3	-	-	1110	n/a	0.90	Dec-02	651
LE	Monolec Plus	P	CD	95	-6	505	-	3.70	13.00	4.4	-	-	-	n/a	0.42	?	650
Citgo	SuperGard	P	SL	98	-	504	-	3.70	13.00	5.0	-	-	-	n/a	-	Jul-00	647
Citgo	SuperGard	P	SL	98	-	504	-	3.70	13.00	5.0	-	-	-	n/a	-	Dec-02	647
Citgo	Citgard 600	P	CF/SL	100	+10	482	-	4.50	13.00	11.0	-	-	1400	n/a	1.50	Sep-02	645
Citgo	Citgard 600	P	CF/SL	100	+10	482	-	4.50	13.00	11.0	-	-	-	n/a	1.50	Dec-02	645
Chevron	GEO 940	P	CF	100	+5	498	-	3.70	13.00	7.6	-	1080	1200	n/a	0.90	Sep-01	643
Kendall	Super-D 3	P	SJ/CF	108	-11	468	-	3.70	13.00	10.3	-	-	-	n/a	1.20	Mar-00	643
Kendall	Super-D 3	P	SL/CF	98	-6	468	-	4.40	13.00	10.5	-	-	1400	n/a	1.40	Sep-02	642
Wolf's Head	Heavy Duty	P	SL/SJ	102	-	475	-	4.60	13.00	5.0	-	-	-	n/a	<.9	Oct-01	640
Mobil	Delvac 1640	P	CF/SF	112	-6	462	-	3.70	13.00	12.0	-	-	-	n/a	1.40	May-03	639
Valvoline	VR-1 Racing	P	SJ/CD	105	+5	480	-	3.70	13.00	12.0	-	1140	1200	n/a	1.50	Sep-99	639
Exxon	Superflo	P	SL/SJ	105	-	473	-	4.40	13.00	5.0	-	-	-	n/a	-	Oct-01	637
Mystik	JT-8 Super HD	P	SL/CF	101	-6	471	-	3.70	13.00	12.0	-	-	-	n/a	1.60	Sep-02	637
Mystik	JT-8 Super HD	P	SL/CF	101	-6	471	-	3.70	13.00	12.0	-	-	-	n/a	1.60	Dec-02	637
Phillips 66	Super HD II	P	SJ/CF	105	-6	468	-	3.70	13.00	8.0	-	-	-	n/a	0.85	?	630
Citgo	Citgard 500	P	CF/SL	100	+10	471	-	4.40	13.00	8.0	-	-	1040	n/a	1.00	Sep-02	626
Citgo	Citgard 500	P	CF/SL	100	+10	471	-	4.40	13.00	8.0	-	-	-	n/a	1.00	Dec-02	626
Exxon	Superflo	P	SJ	103	+5	473	-	4.20	13.00	5.0	-	-	-	n/a	-	Mar-00	626
Lubriplate	Super GPO	-	SJ/CF	103	-15	445	480	3.70	13.00	13.0	-	-	-	n/a	-	Mar-02	624
Royal Purple	MonoGrade	S	SJ/CF	113	-	460	515	3.70	13.00	5.0	-	-	-	n/a	-	?	618
Pennzoil	HD	P	SL/SJ	100	-17	455	-	3.70	13.00	5.0	-	-	-	n/a	-	Jul-01	617
Mystik	Power Lubricants	P	SL/CF	100	+10	471	-	3.70	12.00	8.0	-	-	-	n/a	1.00	Sep-02	615
Phillips 66	HDS	P	SJ/CF	109	-22	428	-	3.70	13.00	10.0	-	-	-	n/a	1.00	?	614
Schaeffer	Micron Moly Racing	P	SJ	100	+10	465	500	4.00	13.00	8.3	-	-	-	n/a	1.00	?	613
Mystik	Power Lubricants	P	SL/CF	100	+10	471	-	3.70	13.00	8.0	-	-	-	n/a	1.00	Dec-02	612
Castrol	Heavy Duty	P	SH/SJ	106	+5	465	480	3.70	13.00	5.0	-	1300	1400	n/a	1.00	2001 ?	611
Chevron	ECO	P	SJ/CF	105	+5	460	-	3.70	13.00	8.0	-	1000	1100	n/a	1.20	Aug-00	611
Q. State	Universal HDX	P	CF/SL	103	-11	446	-	3.70	13.00	7.0	-	-	-	n/a	0.95	Aug-02	609
Shell	Rimula	P	CF/CD	95	-5	445	-	3.70	13.00	12.0	-	-	-	n/a	1.65	Dec-02	604
Torco	MPZ Super Diesel	P	CH-4/SJ	95	+5	459	514	3.70	13.00	9.0	-	-	-	n/a	-	2001	602

LE	Monolec GFS	P	CF/SJ	95	-	450	-	3.70	13.00	10.0	-	-	-	n/a	1.00	?	600
Wolf's Head	Special Duty	P	CH-4/SJ	104	+5	446	-	3.70	13.00	9.2	-	-	-	n/a	<1.0	Sep-01	598
Lubriplate	Super HDS	-	SJ/CF	108	-15	430	475	3.70	13.00	5.0	-	-	-	n/a	-	May-97	598
Conoco	Hydroclear Super	P	SL/SJ	102	-27	410	-	3.70	13.00	5.0	-	-	-	n/a	-	Nov-01	584
Q. State	FCI HDX	P	CF/SJ	104	+5	430	470	3.70	13.00	9.2	-	-	-	n/a	-	Sep-02	582
Lyondell	Fleet S3 Plus	P	CF/SJ	98	+10	440	-	3.70	13.00	8.0	-	-	-	n/a	0.90	Dec-00	579
Castrol	Heavy Duty	P	SL/SJ	106	21	446	470	3.70	13.00	5.0	-	800	850	n/a	-	Jun-02	576
Q. State	Single-Grade	P	SL/SJ	102	+10	435	470	3.70	13.00	5.0	-	-	-	n/a	-	Sep-01	572
Shell	Rotella T Mono	P	CF-4/SJ	-	+5	460	-	3.70	13.00	7.3	-	-	-	n/a	1.00	Dec-02	505
Mobil	Delvac 1240	P	CF-2/SH	-	+5	439	-	4.30	13.00	7.8	-	-	-	n/a	0.83	Jan-97	497
Lyondell	Supreme	P	SJ	-	+5	437	-	3.70	13.00	5.0	-	-	-	n/a	-	Dec-00	477
Exxon	XD3	P	CF	96	-6	-	-	4.40	13.00	7.3	-	-	-	n/a	0.80	Nov-02	166
Valvoline	All Fleet Plus	P	CF-4/SL	105	-6	-	-	3.70	13.00	8.0	-	-	1100	n/a	<1.0	Jul-02	162
Valvoline	All Fleet Plus	P	CF-4/SL	105	-6	-	-	3.70	13.00	8.0	-	-	1100	n/a	<1.0	Feb-03	162
Valvoline	All Fleet Plus DD	P	CF-2/CF	100	-	-	-	3.70	13.00	6.5	-	-	-	n/a	0.79	Jul-01	148
0w40																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Mobil 1	SuperSyn	S	SL/CF	187	-65	457	-	3.60	13.00	5.0	-	-	-	6200 @ -35	1.20	Mar-03	752
AMSOIL	4-Stroke	S	SJ/CF	201	-60	442	-	2.90	11.63	8.9	0.40'	-	-	-	-	Sep-01	744
AMSOIL	4-Stroke	S	SJ/CF	201	-60	442	-	2.90	11.63	8.9	0.40'	-	-	5691 @ -35	-	Jan-02	744
Mobil 1	SuperSyn	S	SL/CF	185	-65	450	-	2.90	13.00	5.0	-	-	-	4301 @ -35	-	Feb-03	729
Exxon	XD3 Elite	B	CH-4	210	-60	-	-	2.90	13.00	10.0	-	-	-	-	1.25	Oct-99	309
5w40																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Petro Canada	Duron Synthetic HD	S	CH-4/SL	172	-49	451	-	4.20	13.00	10.0	-	-	-	5598 @ -30	1.40	Aug-02	737
76 Lubricants	Pure Synthetic	S	SL/CF	175	-51	450	-	3.80	13.00	10.1	-	930	1050	6060 @ -30	1.10	Mar-02	733
Kendall	GT-1 Synthetic	S	SL/CF	175	-51	450	-	3.80	13.00	10.1	-	-	1100	6060 @ -30	1.10	Mar-02	733
Shell	Rotella T Syn	S	CH-4/SL	176	-40	475	-	2.90	13.00	10.0	-	-	-	6400 @ -30	1.30	Dec-02	730
76 Lubricants	Pure Synthetic	S	SJ/CF	164	-58	445	-	4.00	13.00	8.8	-	990	1090	5090 @ -30	1.10	Jul-01	726
Havoline	Synthetic	S	SJ/CF	161	-50	453	-	4.00	13.00	5.0	-	-	-	3260 @ -25	1.10	May-00	715
Chevron	Delo 400 Synth.	S	CI-4/SJ	175	-45	449	-	2.90	13.00	12.5	-	1360	1510	3150 @ -25	1.50	Sep-02	713
Chevron	Delo 400 Synth.	S	CH-4/SJ	175	-45	449	-	2.90	13.00	11.3	-	1360	1510	3150 @ -25	1.34	Sep-00	711
Citgo	Syndurance	B	CI-4/SL	151	-31	460	-	4.20	13.00	11.0	-	-	-	5500 @ -30	1.60	Sep-02	709
Havoline	Synthetic	S	SL/CF	158	-60	432	-	2.90	8.00	8.8	-	980	1030	5000 @ -30	1.20	Sep-02	702
Valvoline	SynPower	S	SJ/CF	159	-44	460	-	2.90	13.00	9.0	-	1100	-	3300 @ -25	1.10	Apr-02	700
Valvoline	SynPower	S	SJ/CF	159	-44	460	-	2.90	13.00	9.0	-	1100	-	3300 @ -25	1.10	Mar-03	700
Citgo	Syndurance	B	CI-4/SL	158	-33	435	-	4.20	13.00	11.5	-	-	-	6250 @ -30	-	Dec-02	694

Quaker State	European Synthetic	S	SL/CF	163	-38	440	-	3.90	13.00	5.0	-	-	-	6600 @ -30	-	Aug-02	690
Chevron	Supreme Syn.	S	SL/CF	158	-60	432	-	2.90	13.00	8.8	-	980	1030	5000 @ -30	1.20	Oct-02	687
Pennzoil	European Synthetic	S	SL/CF	163	-38	435	-	3.90	13.00	5.0	-	-	-	6600 @ -30	-	Apr-02	685
Mobil	Delvac 1	S	CI-4/SL	151	-49	439	-	2.90	13.00	12.0	-	-	-	6600 @ -30	1.35	Mar-03	682
Spectro	SPL Race	S	SH/CD	155	-40	457	-	2.90	13.00	5.0	0.65'	-	-	-	-	?	681
Spectro	Supreme Syn.	S	SH	155	-40	457	-	2.90	13.00	5.0	-	-	-	-	-	?	681
Castrol	Syntec	S	SL/CF	175	-27	405	430	4.50	13.00	5.0	-	900	1000	3300 @ -25	-	Jun-02	668
Spectro	Golden Motor-Guard	B	SH	188	-40	410	-	2.90	13.00	5.0	-	-	-	-	-	?	667
Shell	Helix Ultra	S	SL/CF	187	-44	403	-	2.90	13.00	5.0	-	-	-	-	-	Dec-02	663
Torco	MPZ Racing	S	SL/SJ	177	-40	412	435	2.90	13.00	5.2	-	-	-	3000 @ -25	-	2001	658
Spectro	Golden Spectro4	B	SH	155	-40	419	-	2.90	13.00	5.0	-	-	-	-	-	?	643
Mobil	Delvac 1	S	CI-4/SL	-	-49	439	-	2.90	13.00	12.0	-	-	-	6100 @ -30	1.35	Nov-02	531
Valvoline	Prem. Blue Extreme	S	CI-4/SL	169	-38	-	-	4.07	13.00	12.0	-	-	-	6300 @ -30	1.60	May-02	273
10w40																	
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	RANKING SCORE
AMSOIL	High Performance	S	SJ/CI-4	183	-54	450	-	3.93	7.00	12.0	0.40'	-	-	2614 @ -20	~1.0	Jan-02	769
AMSOIL	High Performance	S	SH/CF	173	-54	450	-	4.20	6.60	12.0	0.40'	1150	1270	4500 @ -25	~1.0	Aug-01	765
AMSOIL	Motorcycle	S	SH/CF	173	-54	450	-	4.20	6.60	12.0	0.40'	1150	1270	4500 @ -25	~1.0	Aug-01	765
AMSOIL	Motorcycle	S	SJ/CI-4	173	-54	450	-	4.20	6.60	12.0	0.40'	1150	1270	4500 @ -25	~1.0	Sep-02	765
AMSOIL	XL7500	S	SL	178	-44	450	478	3.80	5.60	10.2	0.38'	-	-	4951 @ -25	-	Apr-03	752
Red Line	Passenger	S	SJ/CF	159	-45	495	-	2.90	6.00	5.0	-	-	-	3300 @ -20	-	May-00	749
Mobil 1	MX4T Motorcycle	S	SH/CF	164	-65	487	-	2.90	13.00	5.0	-	-	-	2900 @ -20	-	May-02	745
Mobil 1	MX4T Motorcycle	S	SH/CF	164	-65	487	-	2.90	13.00	5.0	-	-	-	2900 @ -20	-	Apr-03	745
Neo	Neo	S	SJ	185	-49	470	-	2.90	13.00	8.0	-	-	-	2900 @ -20	0.64	?	739
76 Lubricants	Nascar Synthetic	S	SJ/CF	146	-58	480	-	3.20	13.00	9.0	-	900	1280	3720 @ -25	1.10	Jul-01	727
Valvoline	HP Syn	S	SH/CD	155	-40	480	-	4.00	13.00	5.0	-	1200	1200	3150 @ -20	-	Jul-98	726
Valvoline	VR-1 Racing Syn	S	SH/CD	155	-40	480	-	4.00	13.00	5.0	-	1200	1200	3150 @ -20	-	Jul-98	726
Petro Canada	Duron XL Blend	B	CH-4/SL	158	-44	459	-	4.10	13.00	9.1	-	-	-	4943 @ -25	1.20	Aug-02	722
Torco	MPZ Motorcycle	S	SG/SH	180	-40	446	491	2.90	13.00	5.2	-	-	-	1750 @ -20	-	2001	695
76 Lubricants	4T Motorcycle	P	SG/CD	157	-35	450	-	3.90	13.00	7.1	-	-	1380	5060 @ -25	0.98	Jul-01	695
76 Lubricants	Nascar HP	P	SJ	153	-40	440	-	3.90	13.00	5.5	-	-	1360	5400 @ -25	0.76	Jul-01	683
Valvoline	Durablend	B	SL/CD	155	-38	453	-	2.90	13.00	8.1	-	960	-	5700 @ -25	1.00	Apr-02	681
Havoline	Petroleum	P	SL/SJ	148	-36	458	-	2.90	13.00	7.1	-	980	1090	6400 @ -25	0.86	Jul-02	675
Castrol	Syntec	S	SL/CF	148	-27	450	450	3.80	13.00	5.0	-	900	1000	7000 @ -25	-	Jun-02	672
Chevron	Supreme	P	SL/SJ	148	-36	453	-	2.90	13.00	7.1	-	980	1090	6400 @ -25	0.86	Sep-02	670
Petro Canada	Blend PCMO	B	SL	155	-38	444	-	2.90	13.00	6.6	-	900	-	5000 @ -25	0.80	Mar-02	669
Havoline	Petroleum	P	SL/SJ	148	-29	453	-	2.90	13.00	7.6	-	940	1030	6400 @ -25	0.90	Mar-03	664
HD-Plus	Syn-Guard	S	CH-4/SJ	146	-36	439	495	2.90	13.00	12.0	-	-	-	7000 @ -25	1.00	Jul-00	664
Chevron	Supreme	P	SL/SJ	148	-29	453	-	2.90	13.00	7.4	-	940	1030	6400 @ -25	0.90	Mar-03	664
Exxon	Superflo	P	SL/SJ	147	-27	439	-	3.90	13.00	5.0	-	-	-	6400 @ -25	-	Oct-01	662

Exxon	Superflo	P	SL/SJ	147	-27	442	-	3.70	13.00	5.0	-	-	-	7000 @ -25	0.74	Mar-03	661
Q. State	4x4 Blend	B	SL	157	-25	450	478	2.90	13.00	5.0	-	-	-	7000 @ -25	-	May-02	661
Petro Canada	Max MultiGrade	P	SL	152	-27	444	-	2.90	13.00	6.6	-	-	-	5760 @ -25	0.80	Feb-02	655
Torco	T-4R Motorcycle	B	SG/SH	162	-22	437	471	2.90	13.00	5.2	-	-	-	2650 @ -20	-	2001	650
Petro Canada	Supreme MultiGrade	P	SL	154	-22	441	-	2.90	13.00	6.8	-	-	-	5330 @ -25	0.80	Mar-02	650
76 Lubricants	Super	P	SL	147	-33	420	-	3.80	13.00	6.2	-	-	990	5950 @ -25	0.80	Jul-01	649
Shell	FormulaShell	P	SL/SJ	152	-36	430	-	2.90	13.00	6.1	-	-	1110	6010 @ -25	0.96	2001 ?	649
Shell	FormulaShell	P	SL/SJ	151	-36	430	-	2.90	13.00	6.1	-	-	1110	6010 @ -25	0.96	Dec-02	648
BG	Shear Power	B	-	152	-30	432	-	2.90	13.00	6.6	-	-	-	5610 @ -25	-	Jun-03	646
Citgo	SuperGard	P	SL	148	-	455	-	3.60	13.00	5.0	-	-	-	6530 @ -25	-	Jul-00	646
Citgo	SuperGard	P	SL	148	-	455	-	3.60	13.00	5.0	-	-	-	6530 @ -25	-	Dec-02	646
Pennzoil	Multigrade	P	SL/SJ	153	-33	415	-	3.70	13.00	5.0	-	-	-	7000 @ -25	-	May-02	646
Pennzoil	Multigrade	P	SL/SJ	153	-33	415	-	3.70	13.00	5.0	-	-	-	7000 @ -25	-	Nov-02	646
Q. State	4x4 Blend	B	SJ/SH	142	-25	450	478	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Feb-01	646
Superior Lub.	PCMO	P	SJ	175	-33	407	-	2.90	13.00	5.0	-	-	-	3200 @ -20	0.80	?	644
Royal Purple	RP	S	CF/SJ	149	-49	400	435	2.90	13.00	13.0	-	-	-	7000 @ -25	-	?	643
Mobil	Drive Clean Plus	B	SL/CF	150	-22	440	-	2.90	13.00	5.0	-	-	-	6270 @ -25	-	Apr-03	641
Q. State	Motorcycle	P	SJ/SH	152	-30	430	450	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Jun-00	641
76 Lubricants	Nascar HP	P	SL	147	-27	420	-	3.60	13.00	6.8	-	-	1120	6000 @ -25	0.88	Jul-02	641
Conoco	Hydroclear Super	P	SL/SJ	150	-40	421	-	2.90	13.00	5.0	-	-	-	6200 @ -25	-	Nov-01	640
Q. State	High Mileage	P	SJ/SH	159	-22	430	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Sep-01	640
Valvoline	ATV 4-Stroke	P	SJ	160	-27	420	-	2.90	13.00	7.0	-	900	1050	6000 @ -25	0.80	Apr-02	640
Valvoline	4-Stroke Motorcycle	P	SJ	155	-27	421	-	2.90	13.00	7.9	-	1090	1200	6200 @ -25	0.70	Apr-03	638
Kendall	GT-1	P	SL/SJ	146	-26	419	-	3.60	13.00	6.2	-	-	1000	6700 @ -25	0.80	Mar-02	636
Castrol	Syntec Blend	B	SL/SJ	152	-22	415	415	3.80	13.00	5.0	-	1000	1100	7000 @ -25	-	Jun-02	636
Castrol	HIGH MILEAGE	P	SL/SJ	155	-22	415	415	3.50	13.00	5.0	-	1000	1100	7000 @ -25	-	Jun-02	633
Castrol	GTX	P	SL/SJ	150	-22	415	445	3.70	13.00	5.0	-	1000	1100	7000 @ -25	-	2001 ?	632
Castrol	GTX	P	SL/SJ	153	-22	405	430	4.00	13.00	5.0	-	1300	1400	3100 @ -20	1.06	2001 ?	631
TropArtic	Conventional	P	SL	145	-33	424	-	2.90	13.00	5.0	-	-	-	5566 @ -25	-	?	631
Torco	MPZ Racing	P	SL/SJ	152	-15	433	453	2.90	13.00	5.2	-	-	-	2550 @ -20	-	2001	629
Q. State	Multigrade	P	SL/SJ	148	-22	430	450	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Oct-01	629
Q. State	Peak Performance	P	SL/SJ	148	-22	430	450	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Jan-02	629
Valvoline	All Climate	P	SL/SJ	148	-27	421	-	2.90	13.00	7.0	-	900	1050	6200 @ -25	0.80	Apr-02	629
BG	Shear Power	B	-	156	-40	402	-	2.90	13.00	5.9	-	-	-	3992 @ -25	-	Dec-02	629
Wolf's Head	Super Duty	P	SL/SJ	152	-17	430	-	2.90	13.00	5.0	-	-	-	3300 @ -25	<.9	Oct-01	628
Spectro	Golden Motor-Guard	B	SH	161	-17	421	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	?	627
Spectro	Golden Spectro4	B	SH	161	-17	421	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	?	627
Kendall	Superb 100	P	SJ	145	-29	424	-	2.90	13.00	5.0	-	-	-	5900 @ -25	-	Jun-00	627
Mystik	JT-8 Super HD	P	SL/CF	153	-27	410	-	2.90	15.00	11.0	-	-	-	6500 @ -25	1.30	Sep-02	625
Mystik	JT-8 Super HD	P	SL/CF	153	-27	410	-	2.90	15.00	11.0	-	-	-	6500 @ -25	1.30	Dec-02	625
Spectro	Spectro4	P	SH	155	-20	421	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	?	625
Citgo	UltraLife	P	SL/SJ	148	-	435	-	3.50	13.00	5.0	-	-	-	6170 @ -25	-	Dec-02	624

Wolf's Head	Super Duty	P	SL/SJ	147	-17	430	-	2.90	13.00	5.0	-	-	-	7000 @ -25	<.9	Jul-02	623
Torco	T-4R Racing	B	SJ/SL	161	-22	410	444	2.90	13.00	5.2	-	-	-	3300 @ -20	-	2001	622
Torco	MPZ Motorcycle	P	SG/SH	135	-18	432	460	2.90	13.00	5.2	-	-	-	2850 @ -20	-	2001	614
Torco	MPZ Motorcycle	P	SG/SH	135	-18	432	460	2.90	13.00	5.2	-	-	-	2850 @ -20	-	2001	614
Schaeffer	Micron Moly	P	SL	150	-	417	445	3.46	11.00	5.5	-	-	-	6884 @ -25	0.86	Jun-02	614
Lubriplate	Super Lo-Hi-Vis	-	SJ/CF	142	-40	390	420	2.90	13.00	5.0	-	-	-	2040 @ -20	-	May-97	601
Mobil	Drive Clean	P	SL	147	-27	392	-	2.90	13.00	5.0	-	-	-	6100 @ -25	-	May-02	595
Mobil	Drive Clean	P	SL/SJ	147	-27	392	-	2.90	13.00	5.0	-	-	-	6100 @ -25	-	Apr-03	595
Royal Purple	Multi-Grade	S	SJ/CF	149	-	400	435	2.90	13.00	5.0	-	-	-	7000 @ -25	-	?	578
Spectro	Golden Spectro4	B	SH	161	-17	350	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	?	557
Valvoline	Maxlife	P	SL/SJ	-	-33	468	-	2.90	13.00	8.0	-	950	1080	7000 @ -25	-	Apr-02	536
Shell	Rotella T Blend	B	CH-4/SJ	-	-30	430	-	2.90	13.00	12.2	-	-	-	7000 @ -25	1.50	Dec-02	503
Klotz	MX4 Techniplate	S	SG	-	-30	425	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	May-02	484
Klotz	American V-Twin	S	SH/CG-4	-	-30	420	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	?	479
Klotz	Race Techniplate	S	SH/CD	-	-30	415	-	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Dec-00	474
Lyondell	Supreme	P	SJ	-	-26	419	-	2.90	13.00	5.0	-	-	-	3300 @ -20	-	Dec-00	474
Shell	Rotella SB	B	CH-4/SJ	-	-30	405	-	2.90	13.00	9.5	-	-	-	7000 @ -25	1.30	?	473
Pennzoil	Motorcycle	P	SH/SG	151	-31	-	-	3.65	13.00	5.0	-	-	-	3300 @ -20	-	Apr-99	226
Pennzoil	High Mileage	P	SL/SJ	149	-22	-	-	3.93	13.00	5.0	-	-	-	7000 @ -25	-	Dec-02	221
15w40																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Red Line	40 Wt Race ONLY	S	-	146	-49	527	-	3.70	6.00	5.0	-	-	-	3300 @ -15	-	Apr-99	788
Neo	Neo	S	CF-4/SG	180	-50	470	520	4.70	13.00	10.5	-	-	-	3300 @ -15	1.12	?	776
Red Line	Passenger	S	SJ/CH-4	155	-45	495	-	3.70	6.00	5.0	-	-	-	2500 @ -15	-	May-00	761
AMSOIL	Diesel/Marine	S	CI-4/SJ	164	-47	453	-	4.10	6.70	12.0	0.35"	-	-	3600 @ -20	~1.5	Oct-01	750
AMSOIL	Diesel/Marine	S	CI-4/SJ	164	-47	453	-	4.10	6.70	12.0	0.35"	-	-	3600 @ -20	-	Oct-02	750
Precision	102P	P	CI-4/SL	140	-20	525	-	3.70	13.00	12.0	-	-	-	7000 @ -20	-	Jan-03	744
76 Lubricants	Royal Triton QLT	B	CH-4	148	-38	445	-	4.40	13.00	11.8	-	-	1300	3850 @ -20	1.50	Jul-01	704
76 Lubricants	Royal Triton QLT	B	CI-4	146	-38	445	-	4.30	13.00	13.1	-	-	1270	4070 @ -20	1.65	Sep-02	702
Lubriplate	Super GPO	-	CG-4/SJ	141	-35	465	520	3.70	13.00	13.0	-	-	-	5122 @ -20	-	Mar-02	702
Petro Canada	Duron XL Blend	B	CI-4/SL	148	-38	448	-	4.20	13.00	10.0	-	-	-	4147 @ -20	1.40	Aug-02	699
76 Lubricants	Triton QLT	P	CH-4/SJ	137	-38	450	-	4.40	13.00	11.8	-	-	1300	6250 @ -20	1.50	Jul-01	698
Petro Canada	Duron HD	B	CI-4/SL	145	-38	448	-	4.30	13.00	9.1	-	-	-	4446 @ -20	1.20	Aug-02	696
Texaco	Ursa Premium TDX	P	CI-4/SL	138	-38	460	-	3.70	13.00	11.6	-	1390	1510	6400 @ -20	1.50	Oct-02	694
AMSOIL	Blend	B	CH-4/SJ	146	-32	446	-	3.70	9.30	12.0	0.38"	-	-	2560 @ -15	~1.5	Apr-01	694
AMSOIL	Blend	B	CI-4/SJ	146	-32	446	-	3.70	9.30	12.0	0.38"	-	-	2560 @ -15	~1.5	Apr-01	694
Chevron	RPM Heavy Duty	P	CI-4/SL	140	-38	460	-	3.70	13.00	10.5	-	1270	1370	6400 @ -20	1.37	Sep-02	694
Chevron	RPM Heavy Duty	P	CI-4/SL	140	-38	460	-	3.70	13.00	10.5	-	1270	1370	6400 @ -20	1.37	Jun-03	694
Texaco	Ursa Super Plus	P	CI-4/SL	140	-38	460	-	3.70	13.00	10.5	-	1270	1370	6400 @ -20	1.37	Jul-02	694
Texaco	Ursa Super Plus	P	CI-4/SL	140	-38	460	-	3.70	13.00	10.5	-	1270	1370	6400 @ -20	1.37	Jun-03	694

Pennzoil	LongLife HD	P	CH-4/SJ	145	-27	450	-	4.30	13.00	11.0	-	-	-	7000 @ -20	1.35	May-01	691
HD-Plus	Syn-Guard	S	CH-4/SJ	147	-32	450	478	3.70	13.00	12.0	-	-	-	7000 @ -20	1.00	Jul-00	688
76 Lubricants	T5X HD Multi.	P	CI-4/SL	136	-27	465	-	3.90	13.00	10.1	-	-	1330	6425 @ -20	1.10	Aug-02	687
Mobil	Delvac 1300 Super	P	CI-4/SL	140	-27	446	-	4.40	13.00	12.0	-	-	-	6000 @ -20	1.30	Feb-03	686
Exxon	XD3 Elite	B	CH-4/SJ	138	-38	441	-	4.34	13.00	10.0	-	-	-	7000 @ -20	1.00	Oct-99	685
Mobil	Delvac 1300 Super	P	CI-4/SL	140	-27	446	-	4.30	13.00	12.0	-	-	-	6000 @ -20	1.30	Mar-03	684
76 Lubricants	Guardol QLT	P	CH-4/SH	141	-33	440	-	4.40	13.00	10.1	-	-	1300	5250 @ -20	1.30	Jul-01	683
Chevron	Delo 400	P	CI-4/SL	134	-38	446	-	3.70	13.00	12.5	-	1360	1510	6400 @ -20	1.50	Nov-02	678
Citgo	Citgard 600	P	CI-4/SL	134	-17	449	-	4.30	11.00	12.0	-	-	-	6700 @ -20	1.60	Sep-02	677
Citgo	Citgard 600	P	CI-4/SL	134	-17	449	-	4.30	11.00	12.0	-	-	-	6700 @ -20	1.60	Dec-02	677
Phillips 66	Super HD 3000	B	CH-4/SJ	138	-38	446	-	3.70	13.00	10.0	-	-	-	3000 @ -15	1.00	?	677
Valvoline	Durablend	B	SL/CD	136	-27	450	-	3.70	8.92	8.1	-	960	-	5700 @ -20	1.00	Apr-02	676
Kendall	Super-D 3	P	CI-4/SL	139	-27	439	-	4.20	13.00	13.0	-	-	1300	6520 @ -20	1.50	Sep-02	676
Chevron	Delo 400	P	CH-4/SL	134	-38	446	-	3.70	13.00	11.3	-	1360	1510	3150 @ -15	1.34	Oct-01	676
Schaeffer	Supreme 7000	B	CI-4/SL	145	-	457	495	4.30	10.80	10.0	-	-	-	2804 @ -20	1.35	Jun-02	676
76 Lubricants	Firebird HD	P	CH-4/SJ	142	-31	435	-	4.40	13.00	9.2	-	-	1270	5850 @ -20	1.20	Jul-01	675
Pennzoil	LongLife HD	P	CI-4/SL	136	-33	435	-	4.30	13.00	12.0	-	-	-	6400 @ -20	1.50	Jul-02	675
76 Lubricants	Guardol QLT	P	CI-4/SL	137	-22	440	-	4.40	13.00	12.0	-	-	1270	6600 @ -20	1.50	Sep-02	672
Citgo	Citgard 500	P	CI-4/SL	132	-17	446	-	4.40	11.00	11.0	-	-	-	6600 @ -20	1.50	Sep-02	672
Citgo	Citgard 500	P	CI-4/SL	132	-17	446	-	4.40	11.00	11.0	-	-	-	6600 @ -20	1.50	Dec-02	672
Mystik	SX-8 Blend	B	CI-4/SL	138	-33	435	-	3.70	12.00	12.6	-	-	-	6550 @ -20	1.70	Sep-02	669
Mystik	SX-8 Blend	B	CI-4/SL	138	-33	435	-	3.70	12.00	12.6	-	-	-	6550 @ -20	1.70	Dec-02	669
Shell	Rimula Premium	P	CI-4/SL	139	-30	445	-	3.70	13.00	10.0	-	-	-	7000 @ -20	1.20	Dec-02	669
Pure Power	Pure Power	P	CH-4/SJ	140	-27	440	-	3.70	13.00	13.1	0.40""	-	-	7000 @ -20	0.92	Nov-98	668
Kendall	SHP Diesel	B	CI-4	132	-27	430	-	4.50	13.00	14.0	-	-	1300	6800 @ -20	1.65	Sep-02	668
TropArtic	Racing Blend	B	SJ/CD	138	-38	446	-	3.70	13.00	5.0	-	-	-	3000 @ -15	-	?	667
76 Lubricants	T5X HD Multi.	P	CI-4/SL	137	-24	440	-	4.10	13.00	9.3	-	-	1280	6400 @ -20	1.20	Aug-02	663
Phillips 66	HDS	P	CH-4/SJ	137	-38	432	-	3.70	13.00	10.0	-	-	-	2900 @ -15	1.00	?	662
Chevron	ECO	P	CH-4/SJ	151	-20	439	-	3.70	13.00	8.0	-	1000	1100	2800 @ -15	1.20	Aug-00	661
Phillips 66	Super HD II	P	CI-4/SL	136	-27	440	-	3.70	13.00	10.6	-	-	-	6750 @ -20	1.30	?	659
Kendall	Super-D 3	P	CH-4/SJ	140	-27	435	-	3.70	13.00	11.0	-	-	-	3100 @ -15	1.30	Mar-00	659
Kendall	SHP Diesel	B	CH-4/SJ	142	-33	421	-	3.70	13.00	13.0	-	-	-	3150 @ -15	1.50	Mar-00	657
Mystik	Power Lubricants	P	CI-4/SL	132	-17	446	-	3.70	12.00	11.0	-	-	-	6600 @ -20	1.50	Sep-02	655
Mystik	Power Lubricants	P	CI-4/SL	132	-17	446	-	3.70	12.00	11.0	-	-	-	6600 @ -20	1.50	Dec-02	655
Conoco	HD Fleet Supreme	P	CI-4/SL	125	-22	450	-	3.70	13.00	10.4	-	-	-	7000 @ -25	1.40	Aug-02	653
Mystik	JT-8 Super HD	P	CI-4/SL	136	-17	435	-	3.70	12.00	13.0	-	-	-	6550 @ -20	1.70	Sep-02	652
Mystik	JT-8 Super HD	P	CI-4/SL	136	-17	435	-	3.70	12.00	13.0	-	-	-	6550 @ -20	1.70	Dec-02	652
Q. State	FCI HDX Plus	P	CH-4/SJ	140	-25	410	-	4.50	13.00	12.0	-	-	-	3500 @ -15	1.20	Feb-01	650
BG	Extra Duty	P	CI-4/SL	138	-30	424	-	3.70	13.00	11.0	-	-	-	6392 @ -20	1.35	Jun-03	649
Kendall	GT-1	P	SJ	135	-20	446	-	3.70	13.00	5.0	-	-	-	5700 @ -20	-	Jul-00	646
Schaeffer	Moly Bond X-200	P	CI-4/SL	140	-	442	485	4.08	13.00	10.0	-	-	-	2791 @ -20	1.35	Jun-02	645
Q. State	4x4 Blend	B	SJ/CH-4	145	-25	428	464	3.70	13.00	5.0	-	-	-	7000 @ -20	-	Feb-01	643

Q. State	4x4 Blend	B	SL/CH-4	145	-25	428	464	3.70	13.00	5.0	-	-	-	7000 @ -20	-	May-02	643
Q. State	Special Blend	B	CG-4	138	-30	428	453	3.70	13.00	5.0	-	-	-	3500 @ -20	-	Aug-01	641
Castrol	RX SHD	P	CH-4/SJ	132	-17	446	470	3.70	13.00	5.0	-	1000	1100	7000 @ -20	1.00	2002 ?	640
Lyondell	Fleet S3 Plus	P	CH-4/SJ	134	-15	440	-	3.70	13.00	8.0	-	-	-	3100 @ -15	0.90	Dec-00	640
Torco	MPZ Super Diesel	P	CH-4/SJ	138	-9	439	484	3.70	13.00	9.0	-	-	-	3100 @ -15	-	2001	639
Wolf's Head	Special Duty	P	CH-4/SJ	140	-25	410	-	4.00	13.00	9.2	-	-	-	7000 @ -20	<1.0	Sep-01	634
BG	Shear Power HD	B	-	140	-31	406	-	3.70	13.00	10.3	-	-	-	4403 @ -10	-	Dec-02	633
BG	Shear Power HD	B	-	140	-31	406	-	3.70	13.00	10.3	-	-	-	4403 @ -10	1.25	Jun-03	633
Shell	Rotella T MG	P	CH-4/SL	146	-15	415	-	3.70	13.00	10.2	-	-	-	7000 @ -20	1.35	2001 ?	631
Shell	Rotella T MG	P	CI-4/SL	141	-15	415	-	3.70	13.00	11.5	-	-	-	7000 @ -20	1.47	Dec-02	629
Castrol	Syntec Blend Trk.	B	CH-4/SL	139	-27	410	430	4.00	13.00	5.0	-	1000	1100	3200 @ -15	1.00	2001 ?	627
LE	Monolec Ultra	P	CH-4/SJ	130	-27	415	-	3.70	13.00	10.0	-	-	-	3500 @ -15	1.00	?	627
BG	Extra Duty	P	-	140	-25	405	-	3.70	13.00	10.0	-	-	-	2725 @ -15	1.03	Dec-00	625
Exxon	Superflo Diesel	P	CH-4/SJ	139	-22	419	-	3.70	13.00	5.0	-	-	-	7000 @ -20	-	Oct-99	625
Q. State	Universal HDX	P	CI-4/SL	137	-22	410	-	3.70	13.00	10.0	-	-	-	7000 @ -20	1.20	Aug-02	624
Superior Lub.	HD	P	CG-4-SJ	137	-25	410	-	3.70	13.00	8.0	-	-	-	3300 @ -15	0.95	?	623
Q. State	FCI HDX	P	CH-4/SJ	137	-20	410	433	3.70	13.00	9.2	-	-	-	3500 @ -15	-	Sep-02	620
Royal Purple	Multi-Grade	S	SJ/CH-4	140	-	435	470	3.70	13.00	5.0	-	-	-	7000 @ -20	-	?	620
Conoco	Hydroclear Power D	P	CI-4/SL	126	-22	376	-	3.70	13.00	12.0	-	-	-	7000 @ -20	1.60	Aug-02	583
Mobil	Delvac 1200 Super	P	CH-4/SJ	-	-33	439	-	4.40	13.00	8.1	-	-	-	2200 @ -15	0.90	Apr-01	537
Torco	MPZ Syn. Diesel	S	CH-4/SJ	-	-15	428	446	3.70	13.00	9.0	-	-	-	3000 @ -15	-	2001	496
Neo	Street	?	SJ/CG-4	-	-20	420	-	3.70	13.00	8.5	-	-	1200	3500 @ -15	1.00	?	492
Spectro	Diesel Guard	P	CG-4/SH	-	-15	360	-	3.70	13.00	7.8	-	-	-	7000 @ -20	0.83	?	426
Valvoline	Prem. Blue 2000	B	CH-4/SJ	137	-27	-	-	4.30	13.00	12.0	-	-	-	6000 @ -20	1.60	Feb-02	235
Exxon	XD3 Extra	P	CI-4/SL	138	-27	-	-	4.30	13.00	11.0	-	-	-	7000 @ -20	1.60	Dec-02	234
Exxon	XD3	P	CI-4/SL	138	-27	-	-	4.30	13.00	10.0	-	-	-	7000 @ -20	1.20	Nov-02	232
Valvoline	Prem. Blue	P	CI-4/SL	135	-22	-	-	4.23	11.22	12.0	-	-	-	6600 @ -20	1.60	Aug-02	232
Valvoline	All Fleet Extra	P	CI-4/SL	133	-22	-	-	4.20	13.00	11.0	-	-	1600	6600 @ -20	1.50	Jul-02	222
Valvoline	All Fleet Extra	P	CI-4/SL	133	-22	-	-	4.20	13.00	11.0	-	-	1600	6600 @ -20	1.50	Feb-03	222
Valvoline	All Fleet Super	P	CD	135	-17	-	-	3.70	13.00	14.0	-	-	1200	6600 @ -20	1.80	Sep-01	215
Valvoline	All Climate	P	CH-4/SJ	136	-17	-	-	4.00	13.00	10.1	-	-	1600	7000 @ -20	1.30	Jul-01	214
Valvoline	All Fleet Plus	P	CI-4/SL	131	-17	-	-	4.10	13.00	10.3	-	-	1600	6600 @ -20	1.40	Jul-02	212
Valvoline	All Fleet Plus	P	CI-4/SL	131	-17	-	-	4.10	13.00	10.3	-	-	1600	6600 @ -20	1.40	Feb-03	212
Pennzoil	Synthetic Blend	B	CH-4/SJ	135	-17	-	-	4.10	13.00	5.0	-	-	-	7000 @ -20	-	Jan-02	205
20w40																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Spectro	Spectro4	P	SH	122	-9	428	-	3.70	13.00	5.0	-	-	-	-	-	?	604
SAE 50																	RANKING

Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Schaeffer	Moly Pure	S	SG/CE	144	-40	500	560	5.50	13.00	10.0	-	-	-	n/a	1.00	Oct-91	775
76 Lubricants	T5X HD Mono.	P	CF/SJ	112	-20	520	-	5.60	13.00	8.1	-	-	1300	n/a	0.90	Jul-01	741
76 Lubricants	Guardol QLT	P	SL/CF	107	-22	500	-	5.70	13.00	10.5	-	-	1380	n/a	1.37	Sep-02	725
Mobil	Delvac 1350	P	CG-4	110	-	554	-	3.70	13.00	12.0	-	-	-	n/a	1.40	Aug-02	723
Mobil	Delvac 1350	P	CF/SF	110	0	554	-	3.70	13.00	12.0	-	-	-	n/a	1.40	Mar-03	723
Mobil	Delvac 1650	P	CF/SF	110	0	554	-	3.70	13.00	12.0	-	-	-	n/a	1.40	May-03	723
76 Lubricants	Guardol	P	CF/SJ	110	-15	500	-	5.60	13.00	9.2	-	-	1190	n/a	1.20	Jul-01	716
Conoco	HD Fleet	P	CF/CF-2	99	-24	531	-	3.70	13.00	7.1	-	-	-	n/a	1.00	Oct-02	703
Conoco	Hydroclear Power D	P	CF/SH	99	-24	531	-	3.70	13.00	7.1	-	-	-	n/a	1.00	Aug-02	703
Kendall	Super-D 3	P	SL/CF	103	-11	496	-	5.50	13.00	10.5	-	-	1400	n/a	1.40	Sep-02	702
Pennzoil	LongLife HD	P	CF/SL	102	-4	500	-	5.70	13.00	7.0	-	-	-	n/a	<1.0	Jul-02	695
Kendall	GT-1	P	-	98	-6	536	-	3.70	13.00	6.5	-	-	1100	n/a	0.85	Mar-02	688
Precision	102P	P	SJ/CF-4	112	+5	521	-	3.70	13.00	12.0	-	-	-	n/a	-	Jan-03	687
76 Lubricants	T5X HD Mono.	P	CF	103	-11	485	-	5.50	13.00	7.2	-	-	980	n/a	0.88	Sep-02	684
Pennzoil	LongLife HD	P	CF-2/CF	99	+5	500	-	5.50	13.00	7.5	-	-	-	n/a	<1.0	May-01	680
Chevron	RPM Heavy Duty	P	SL/CF	101	-22	500	-	3.70	13.00	7.6	-	1080	1200	n/a	0.85	Sep-02	673
Chevron	RPM Heavy Duty	P	SL/CF	101	-22	500	-	3.70	13.00	7.2	-	1000	1090	n/a	0.95	Jun-03	672
Chevron	Delo 400	P	CF/SJ	98	-22	498	-	3.70	13.00	8.7	-	1190	1320	n/a	0.96	Aug-00	670
Chevron	Delo 400	P	CF/SJ	98	-24	489	-	3.70	13.00	10.2	-	1160	1270	n/a	1.35	Aug-00	666
Kendall	Super-D 3	P	SJ/CF	106	+5	496	-	3.70	13.00	10.3	-	-	-	n/a	1.20	Mar-00	653
Citgo	Citgard 500	P	CF/SL	99	+10	475	-	5.50	13.00	8.0	-	-	1040	n/a	1.00	Sep-02	651
Citgo	Citgard 500	P	CF/SL	99	+10	475	-	5.50	13.00	8.0	-	-	-	n/a	1.00	Dec-02	651
Citgo	Citgard 600	P	CF/SL	99	+10	467	-	5.56	13.00	11.0	-	-	1400	n/a	1.50	Sep-02	650
Citgo	Citgard 600	P	CF/SL	99	+10	467	-	5.56	13.00	11.0	-	-	-	n/a	1.50	Dec-02	650
Texaco	Ursa Super Plus	P	SL/CF	101	+9	500	-	3.70	13.00	7.6	-	1080	1200	n/a	0.85	Jul-02	642
Mystik	JT-8 Super HD	P	SL/CF	101	+5	485	-	3.70	13.00	12.0	-	-	-	n/a	1.60	Sep-02	640
Mystik	JT-8 Super HD	P	SL/CF	101	+5	485	-	3.70	13.00	12.0	-	-	-	n/a	1.60	Dec-02	640
Schaeffer	Micron Moly Racing	P	SJ	102	+20	500	535	4.00	13.00	8.3	-	-	-	n/a	1.00	?	640
Valvoline	VR-1 Racing	P	SJ/CD	105	+16	490	-	3.70	13.00	12.0	-	1140	1200	n/a	1.50	Sep-99	638
Texaco	Ursa	P	CF/CD	98	+8	498	-	3.70	13.00	7.0	-	980	1080	n/a	0.76	Feb-02	637
Mobil	Delvac 1250	P	CF/SH	106	+10	453	-	5.20	13.00	7.8	-	-	-	n/a	0.83	Apr-97	630
LE	Monolec GFS	P	CF/SJ	95	-	475	-	3.70	13.00	10.0	-	-	-	n/a	1.00	?	625
Phillips 66	Super HD II	P	SJ/CF	102	-	471	-	3.70	13.00	8.0	-	-	-	n/a	0.85	?	624
Valvoline	Special Racing	P	-	105	+16	490	-	3.70	13.00	5.0	-	1200	1200	n/a	-	Dec-02	624
Mobil	Delvac 1350	P	CF/SE	105	+15	439	-	5.10	13.00	13.0	-	-	-	n/a	1.70	Aug-98	618
Mystik	Power Lubricants	P	SL/CF	99	+10	475	-	3.70	12.00	8.0	-	-	-	n/a	1.00	Sep-02	618
Pennzoil	HD	P	SJ	96	-17	460	-	3.70	13.00	5.0	-	-	-	n/a	-	Jul-01	618
Torco	MPZ Racing	P	SL/SJ	125	+10	455	480	3.70	13.00	5.2	-	-	-	n/a	-	2001	615
Mystik	Power Lubricants	P	SL/CF	99	+10	475	-	3.70	13.00	8.0	-	-	-	n/a	1.00	Dec-02	615
Royal Purple	MonoGrade	S	SJ/CF	108	-	460	515	3.70	13.00	5.0	-	-	-	n/a	-	?	613

Lubriplate	Super HDS	-	SJ/CF	99	-10	455	505	3.70	13.00	5.0	-	-	-	n/a	-	May-97	609
Q. State	FCI HDX Plus	P	CF/SJ	108	+10	445	-	3.70	13.00	12.0	-	-	-	n/a	1.20	Feb-01	602
Q. State	FCI HDX	P	-	107	+10	445	470	3.70	13.00	5.0	-	-	-	n/a	-	Sep-02	587
Pennzoil	GT Perf. Racing	P	SJ	115	+15	430	-	3.70	13.00	5.0	-	-	-	n/a	0.90	Apr-99	575
Synergyn	Racing Oil	S	-	120	+7	411	-	3.70	13.00	5.0	-	-	-	n/a	-	?	569
Spectro	HD MCO	P	-	-	+6	510	-	3.70	13.00	5.0	-	-	-	n/a	-	?	549
Shell	Rotella T Mono	P	CF/SH	-	+5	465	-	3.70	13.00	7.3	-	-	-	n/a	1.00	Dec-02	510
Klotz	American V-Twin	S	SH/CG-4	-	-10	400	-	3.70	13.00	5.0	-	-	-	n/a	-	?	455
Exxon	XD3	P	CF	97	-6	-	-	5.20	13.00	7.3	-	-	-	n/a	0.80	Nov-02	183
Valvoline	All Fleet Plus	P	CF-4/SL	113	-	-	-	3.70	13.00	8.0	-	-	1100	n/a	<1.0	Jul-02	164
Valvoline	All Fleet Plus	P	CF-4/SL	113	0	-	-	3.70	13.00	8.0	-	-	1100	n/a	<1.0	Feb-03	164
5w50																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Kendall	Elite	S	SJ/CF	179	-44	468	-	4.60	13.00	5.0	-	-	-	3050 @ -25	-	Oct-00	754
Castrol	Syntec	S	SL/CF	180	-38	465	480	4.80	13.00	5.0	0.58'	900	1100	3050 @ -25	0.93	2001 ?	750
TropArtic	Synthetic	S	SJ	208	-58	428	-	3.70	13.00	5.0	-	-	-	2300 @ -25	0.70	?	739
Castrol	Syntec	S	SL/CF	175	-38	437	450	4.50	13.00	5.0	0.58'	900	1100	6600 @ -30	-	Jun-02	711
Q. State	Synthetic	S	SL/CF	193	-35	425	482	3.70	13.00	5.0	-	-	-	6600 @ -30	-	Oct-02	698
Q. State	Synthetic	S	SJ/CF	177	-35	435	482	3.70	13.00	5.0	-	-	-	3500 @ -25	-	May-01	692
Torco	MPZ Racing	S	SL/SJ	175	-38	415	442	3.70	13.00	5.2	-	-	-	3300 @ -25	-	2001	673
Synergyn	Racing Oil	S	-	162	-36	410	-	3.70	13.00	5.0	-	-	-	-	-	?	653
Pennzoil	Synthetic	S	SL	194	-58	-	-	4.29	13.00	5.0	-	-	-	6600 @ -30	-	Jan-03	309
Pennzoil	Synthetic	S	SJ	176	-50	-	-	4.45	8.10	5.0	-	-	-	3300 @ -25	-	May-00	301
Exxon	Superflo Syn.	S	SJ	162	-54	-	-	4.70	13.00	5.0	-	-	-	2510 @ -25	-	Oct-99	281
10w50																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Spectro	SPL Race	S	SH/CD	136	-33	473	-	3.70	13.00	5.0	-	-	-	-	-	?	687
Spectro	Supreme Syn	S	SH	136	-33	473	-	3.70	13.00	5.0	-	-	-	-	-	?	687
Kendall	GT-1 Synthetic Blend	B	SL/SJ	155	-29	442	-	3.90	13.00	8.0	-	-	1300	6800 @ -25	1.00	Mar-02	681
Kendall	Victory	B	SJ	158	-33	432	-	3.70	13.00	5.0	-	-	-	6350 @ -25	1.00	Aug-00	668
15w50																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Red Line	50 Wt Race ONLY	S	-	146	-49	522	-	3.70	6.00	5.0	-	-	-	3400 @ -15	-	Apr-99	783
Red Line	Passenger	S	SJ/CF	160	-49	503	-	3.70	5.00	5.0	-	-	-	3200 @ -15	-	May-00	781

Kendall	Elite	S	SJ/CF	152	-54	493	-	5.10	13.00	5.0	-	-	-	3120 @ -15	-	Oct-00	772
Precision	102P	P	CI-4/SL	135	-20	532	-	3.70	13.00	12.0	-	-	-	-	-	Jan-03	746
Mobil 1	SuperSyn	S	SL/CF	155	-49	491	-	3.70	13.00	5.0	-	-	-	5234 @ -20	-	Feb-03	740
Mobil 1	Tri-Syn	S	SJ/CF	160	-55	473	-	3.70	13.00	5.0	0.92'''	-	-	2400 @ -15	-	May-01	733
Valvoline	SynPower	S	SL/CF	163	-44	460	-	3.70	9.00	9.0	-	1000	-	5000 @ -20	1.10	Apr-02	732
Valvoline	SynPower	S	SL/CF	163	-44	460	-	3.70	9.00	9.0	-	1000	-	5000 @ -20	1.10	Mar-03	732
Mobil 1	SuperSyn	S	SL/CF	153	-49	446	-	5.11	13.00	5.0	-	-	-	7000 @ -20	1.30	Mar-03	721
Chevron	Supreme Syn.	S	SJ	154	-38	464	-	3.70	13.00	11.9	-	1300	1450	2400 @ -15	1.11	Aug-01	715
Spectro	Golden Spectro	S	SH	151	-22	473	-	3.70	13.00	5.0	-	-	-	-	-	?	691
Spectro	Supreme Syn	S	SH	151	-22	473	-	3.70	13.00	5.0	-	-	-	-	-	?	691
Mystik	JT-8 Super HD	P	CI-4/SL	138	-17	430	-	3.70	12.00	13.0	-	-	-	6600 @ -20	1.70	Sep-02	649
Mystik	JT-8 Super HD	P	CI-4/SL	138	-17	430	-	3.70	12.00	13.0	-	-	-	6600 @ -20	1.70	Dec-02	649
BG	Extra Duty	P	-	155	-25	402	-	3.70	13.00	10.0	-	-	-	3050 @ -15	1.03	Dec-00	637
Synergyn	Racing Oil	S	-	154	-20	410	-	3.70	13.00	5.0	-	-	-	-	-	?	629
Klotz	MC Techniplate	S	SG	-	-30	425	-	3.70	13.00	5.0	-	-	-	-	-	Dec-00	500
Klotz	MC Techniplate	S	SG	-	-30	425	-	3.70	13.00	5.0	-	-	-	-	-	May-02	500
20w50																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
76 Lubricants	Nascar Synthetic	S	SJ/CF	149	-49	495	-	5.70	13.00	9.0	-	900	1280	3350 @ -10	1.10	Jul-01	786
76 Lubricants	Nascar Synthetic	S	SJ/CF	149	-49	495	-	5.70	13.00	9.0	-	920	1280	3350 @ -10	1.10	Sep-02	786
Red Line	Passenger	S	SJ/CF-4	157	-49	503	-	3.70	5.00	5.0	-	-	-	2200 @ -10	-	May-00	778
Mobil 1	V-Twin	S	SH/CF	150	-60	518	-	3.70	13.00	5.0	-	-	-	2930 @ -10	-	May-02	773
Mobil 1	V-Twin	S	SH/CF	150	-60	518	-	3.70	13.00	5.0	-	-	-	2930 @ -10	-	Apr-03	773
Valvoline	HP Syn	S	SH/CD	152	-40	500	-	5.30	13.00	5.0	-	1200	1200	2900 @ -10	-	Jul-98	769
Valvoline	VR-1 Racing Syn	S	SH/CD	152	-40	500	-	5.30	13.00	5.0	-	1200	1200	2900 @ -10	-	Jul-98	769
AMSOIL	High Performance	S	SL/CH-4	161	-35	457	-	4.90	6.00	12.0	0.39'	-	-	3550 @ -15	-	Mar-03	757
AMSOIL	High Performance	S	SH/CF	169	-33	450	-	4.90	6.40	12.0	0.39'	1150	1270	3990 @ -15	~1.0	Aug-01	755
AMSOIL	V-Twin	S	SH/CF	169	-33	450	-	4.90	6.40	12.0	0.39'	1150	1270	3990 @ -15	~1.0	Aug-01	755
AMSOIL	V-Twin	S	CI-4/SJ	169	-33	450	-	4.90	6.40	12.0	0.39'	1150	1270	3990 @ -15	~1.0	Sep-02	755
AMSOIL	S2000	S	SL/CF	160	-33	453	489	5.10	5.90	11.0	0.44'''	-	-	2343 @ -10	~1.0	Dec-00	752
Valvoline	SynPower Racing	S	-	158	-49	500	-	3.70	13.00	5.0	-	-	-	3000 @ -10	-	Oct-99	752
AMSOIL	S2000	S	SL/CF	155	-33	446	496	5.20	6.40	12.0	0.35'''	-	-	4401 @ -15	~1.0	Dec-01	743
Neo	Neo	S	CD/SG	180	-40	470	520	3.70	13.00	8.0	-	-	-	3980 @ -10	1.03	?	741
Valvoline	Special Syn. Racing	S	-	153	-40	500	-	3.70	13.00	5.0	-	1200	1200	4000 @ -15	-	Mar-03	738
Valvoline	SynPower	S	SL/CF	160	-44	460	-	3.70	8.00	9.0	0.74'''	1000	-	4600 @ -15	1.10	Apr-02	732
Valvoline	SynPower	S	SL/CF	160	-44	460	-	3.70	8.00	9.0	0.74'''	1000	-	4600 @ -15	1.10	Mar-03	732
Precision	102P	P	CI-4/SL	130	-4	528	-	3.70	13.00	12.0	-	-	-	9500 @ -15	-	Jan-03	721
76 Lubricants	4T Motorcycle	P	SG/CD	134	-20	485	-	4.90	13.00	7.1	-	-	1380	6210 @ -15	0.98	Jul-01	712
76 Lubricants	Nascar HP	P	SJ	136	-20	480	-	5.20	13.00	5.5	-	-	1360	6210 @ -15	0.76	Jul-01	712
Citgo	Citgard 500	P	CF-4/SL	121	-11	486	-	4.50	9.00	11.0	-	-	-	7900 @ -15	1.50	Sep-02	703

Citgo	Citgard 500	P	CF-4/SL	121	-11	486	-	4.50	9.00	11.0	-	-	-	7900 @ -15	1.50	Dec-02	703
Valvoline	Durablend	B	SL/CD	129	-22	474	-	3.70	8.46	8.1	-	960	-	7800 @ -15	1.00	Apr-02	690
Havoline	Petroleum	P	SL/SJ	122	-20	496	-	3.70	13.00	7.6	-	940	1030	8000 @ -15	0.90	Mar-03	688
Chevron	Supreme	P	SL/SJ	122	-20	496	-	3.70	13.00	7.4	-	940	1030	8000 @ -15	0.90	Mar-03	688
Chevron	Supreme	P	SL/SJ	124	-31	482	-	3.70	13.00	7.1	-	980	1090	8000 @ -15	0.86	Sep-02	686
Havoline	Petroleum	P	SL/SJ	124	-31	482	-	3.70	13.00	7.1	-	980	1090	8000 @ -15	0.86	Jul-02	686
Torco	MPZ Motorcycle	S	SG/SH	140	-36	464	500	3.70	13.00	5.2	-	-	-	3570 @ -10	-	2001	685
BG	Shear Power	B	-	126	-22	486	-	3.70	13.00	6.7	-	-	-	7232 @ -15	-	Jun-03	682
BG	PM Racing	S	-	132	-20	485	-	3.70	13.00	5.0	-	-	-	9500 @ -15	-	Dec-02	682
Valvoline	VR-1 Racing	P	SJ/CD	132	-11	480	-	3.70	13.00	12.0	-	1200	1140	9500 @ -15	1.50	Sep-99	682
Schaeffer	Supreme 7000	B	SL	140	-	465	505	4.55	10.50	7.1	-	-	-	2950 @ -15	0.90	Jul-02	679
Torco	T-4R Motorcycle	B	SG/SH	158	-13	455	491	3.70	13.00	5.2	-	-	-	2500 @ -10	-	2001	671
Shell	FormulaShell	P	SL/SJ	126	-27	464	-	3.70	13.00	6.2	-	-	1170	6870 @ -15	0.90	2001 ?	664
Pennzoil	GT Performance	P	SL/SJ	130	-11	450	-	5.10	13.00	5.0	-	-	-	4300 @ -10	-	Jul-01	664
Shell	FormulaShell	P	SL/SJ	125	-27	464	-	3.70	13.00	6.2	-	-	1170	6870 @ -15	0.90	Dec-02	663
Petro Canada	Supreme MultiGrade	P	SL	123	-11	480	-	3.70	13.00	6.8	-	-	-	6750 @ -15	0.80	Mar-02	663
Exxon	Superflo	P	SL/SJ	125	-6	464	-	4.80	13.00	5.0	-	-	-	9500 @ -15	0.74	Mar-03	662
Exxon	Superflo	P	SL/SJ	124	-6	464	-	4.70	13.00	5.0	-	-	-	8200 @ -15	-	Oct-01	659
Citgo	SuperGard	P	SL	121	-	473	-	4.60	13.00	5.0	-	-	-	7990 @ -15	-	Jul-00	657
Citgo	SuperGard	P	SL	121	-	473	-	4.60	13.00	5.0	-	-	-	7990 @ -15	-	Dec-02	657
Kendall	GT-1	P	SL/SJ	124	-26	446	-	4.30	13.00	6.5	-	-	1100	7350 @ -15	0.85	Mar-02	656
Valvoline	Special Racing	P	-	119	-11	480	-	3.70	13.00	5.0	-	1200	1200	8740 @ -15	-	Dec-02	655
Castrol	Syntec Blend	B	SL/SJ	135	-17	440	465	4.50	13.00	5.0	-	900	1000	3100 @ -10	1.00	2001 ?	653
Castrol	Syntec Blend	B	SL/SJ	135	-17	440	440	4.50	13.00	5.0	-	1000	1100	9500 @ -15	-	Jun-02	653
Schaeffer	Micron Moly Racing	P	SL	125	-11	450	500	4.47	12.20	7.1	-	-	-	3466 @ -15	0.90	Jun-02	653
TropArtic	Racing	P	SL/CD	130	-24	451	-	3.70	13.00	6.5	-	-	1000	7441 @ -15	0.80	?	653
76 Lubricants	Super	P	SL	129	-22	430	-	4.90	13.00	6.2	-	-	990	7300 @ -15	0.80	Jul-01	652
Torco	T-4R Racing	B	SJ/SL	153	-18	435	446	3.70	13.00	5.2	-	-	-	4000 @ -10	-	2001	651
76 Lubricants	Firebird LD	P	SJ	132	-15	430	-	5.10	13.00	5.5	-	-	1350	3620 @ -10	0.75	Jul-01	651
Q. State	Motorcycle	P	SJ/SH	140	-25	440	455	3.70	13.00	5.0	-	-	-	4500 @ -10	-	Jun-00	650
Valvoline	4-Stroke Motorcycle	P	SJ	124	-11	446	-	3.70	7.30	7.9	-	1090	1200	7800 @ -15	0.70	Apr-03	649
76 Lubricants	Nascar HP	P	SL	124	-26	430	-	4.70	13.00	6.8	-	-	1120	7300 @ -15	0.88	Jul-02	649
Spectro	Golden Motor-Guard	B	SH	146	-9	446	-	3.70	13.00	5.0	-	-	-	9500 @ -15	-	?	646
Spectro	Golden Spectro4	B	SH	146	-9	446	-	3.70	13.00	5.0	-	-	-	9500 @ -15	-	?	646
Castrol	HIGH MILEAGE	P	SL/SJ	138	-6	440	440	4.50	13.00	5.0	-	1000	1100	9500 @ -15	-	Jun-02	645
Spectro	Golden American4	B	CD	146	-9	445	-	3.70	13.00	5.0	-	-	-	9500 @ -15	-	?	645
Wolf's Head	Super Duty	P	SL/SJ	123	-11	460	-	3.70	13.00	5.0	-	-	-	9500 @ -15	<.9	Jul-02	639
Kendall	GT-1	P	SJ	130	-11	451	-	3.70	13.00	5.0	-	-	-	7000 @ -15	-	Jul-00	637
Wolf's Head	Super Duty	P	SL/SJ	121	-11	460	-	3.70	13.00	5.0	-	-	-	4300 @ -15	<.9	Oct-01	637
Castrol	GTX	P	SL/SJ	122	-11	440	470	4.60	13.00	5.0	-	1300	1400	4000 @ -10	1.06	2001 ?	636
BG	Shear Power	B	-	124	-15	446	-	3.70	13.00	6.0	-	-	-	7522 @ -15	-	Dec-02	632
Valvoline	All Climate	P	SL/SJ	125	-11	446	-	3.70	13.00	7.0	-	900	1050	7300 @ -15	0.80	Apr-02	631

Castrol	GTX	P	SL/SJ	128	-6	440	470	4.00	13.00	5.0	-	800	900	9500 @ -15	-	Jun-02	625
Q. State	HP Blend	B	SL/CF	128	-6	446	493	3.70	13.00	5.0	0.79""	-	-	9500 @ -15	-	May-02	625
Q. State	Synthetic Blend	B	SL/CF	128	-6	446	493	3.70	13.00	5.0	-	-	-	9500 @ -15	-	May-02	625
Q. State	HP Blend	B	SJ/CF	126	-6	446	493	3.70	13.00	5.0	0.79""	-	-	9500 @ -15	-	Jun-00	623
Spectro	Spectro4	P	SH	132	-	446	-	3.70	13.00	5.0	-	-	-	9500 @ -15	-	?	623
LE	Monolec 8820	P	CF-4/SJ	125	-11	430	-	3.70	13.00	10.0	-	-	-	9500 @ -15	-	?	621
Torco	MPZ Motorcycle	P	SG/SH	125	-4	444	475	3.70	13.00	5.2	-	-	-	3700 @ -10	-	2001	618
Torco	MPZ Racing	P	SL/SJ	125	-4	444	475	3.70	13.00	5.2	-	-	-	3100 @ -10	-	2001	618
Royal Purple	Multi-Grade	S	SJ/CF-4	138	-	435	470	3.70	13.00	5.0	-	-	-	9500 @ -15	-	?	618
Lubriplate	Super Lo-Hi-Vis	-	SJ/CF	130	-25	415	445	3.70	13.00	5.0	-	-	-	2630 @ -10	-	May-97	615
Q. State	Multigrade	P	SL/SJ	120	-6	441	455	3.70	13.00	5.0	-	-	-	9500 @ -15	-	Oct-01	612
Q. State	Peak Performance	P	SL/SJ	120	-6	441	455	3.70	13.00	5.0	-	-	-	9500 @ -15	-	Jan-02	612
Castrol	Syntec	S	SL/CF	135	22	437	450	4.50	13.00	5.0	-	900	1000	9500 @ -15	1.00	Jun-02	611
Conoco	Hydroclear HP	P	SL	122	-27	410	-	3.70	13.00	5.0	-	-	-	8800 @ -15	-	Nov-01	604
Mobil	Drive Clean	P	SL	124	-17	392	-	3.70	13.00	5.0	-	-	-	8200 @ -15	-	May-02	578
Mobil	Drive Clean	P	SL/SJ	124	-17	392	-	3.70	13.00	5.0	-	-	-	8200 @ -15	-	Apr-03	578
Spectro	Golden American4	P	CD	146	-9	365	-	3.70	13.00	5.0	-	-	-	9500 @ -15	-	?	565
Spectro	Golden Spectro4	B	SH	146	-9	365	-	3.70	13.00	5.0	-	-	-	9500 @ -15	-	?	565
Spectro	HD MCO	P	-	-	-25	485	-	3.70	13.00	5.0	-	-	-	9500 @ -15	-	?	555
Valvoline	Maxlife	P	SL/SJ	-	-27	473	-	3.70	13.00	8.0	-	950	1080	9500 @ -15	-	Apr-02	551
Klotz	American V-Twin	S	SH/CG-4	-	-30	425	-	3.70	13.00	5.0	-	-	-	9500 @ -15	-	?	500
Klotz	MC Techniplate	S	SG	-	-30	425	-	3.70	13.00	5.0	-	-	-	9500 @ -15	-	Dec-00	500
Klotz	Race Techniplate	S	SH/CD	-	-30	415	-	3.70	13.00	5.0	-	-	-	9500 @ -15	-	Dec-00	490
Lyondell	Supreme	P	SJ	-	-9	410	-	3.70	13.00	5.0	-	-	-	4100 @ -10	-	Dec-00	464
Torco	MPZ Racing	S	SL/SJ	146	-38	-	500	3.70	13.00	5.2	-	-	-	4000 @ -10	-	2001	229
Pennzoil	Motorcycle	P	SH/SG	122	-11	-	-	4.65	13.00	5.0	-	-	-	4000 @ -10	-	Apr-99	197
25w50																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Pennzoil	GT Perf. Racing	P	SJ	110	-5	440	-	3.70	13.00	5.0	-	-	-	6000 @ -5	0.90	Apr-99	600
SAE 60																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
AMSOIL	SHW Racing	S	SJ/CF	140	-33	467	-	3.70	5.17	12.0	0.39""	-	-	n/a	-	Feb-03	722
AMSOIL	SHW Racing	S	SL/CF	132	-27	453	-	3.70	5.80	8.9	0.39""	-	-	n/a	-		686
Precision	102P	P	SJ/CF-4	111	+14	522	-	3.70	13.00	12.0	-	-	-	n/a	-	Jan-03	678
Valvoline	VR-1 Racing	P	SH/CD	104	+27	490	-	3.70	13.00	12.0	-	1140	1200	n/a	1.50	Sep-99	626
Torco	MPZ Racing	P	SL/SJ	117	+10	469	500	3.70	13.00	5.2	-	-	-	n/a	-	2001	621
Pennzoil	GT Perf. Racing	P	SJ	109	+15	455	-	3.70	13.00	5.0	-	-	-	n/a	0.90	Apr-99	594

Spectro	HD MCO	P	-	-	+5	515	-	3.70	13.00	5.0	-	-	-	n/a	-	?	555
Klotz	American V-Twin	S	SH/CG-4	-	-10	400	-	3.70	13.00	5.0	-	-	-	n/a	-	?	455
Valvoline	SynPower Racing	S	-	155	-49	-	-	3.70	13.00	5.0	-	-	-	n/a	-	Oct-99	249
25w60																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Torco	T-4R Racing	B	SJ/SL	158	-15	446	473	3.70	13.00	5.2	-	-	-	2000 @ -5	-	2001	664
Spectro	HD MCO	P	-	-	-15	495	-	3.70	13.00	5.0	-	-	-	-	-	?	555
Klotz	American V-Twin	S	SH/CG-4	-	-20	420	-	3.70	13.00	5.0	-	-	-	-	-	?	485
SAE 70																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Red Line	70 Wt Race ONLY	S	-	150	-	428	-	3.70	6.00	5.0	-	-	-	n/a	-	Apr-99	644
Torco	MPZ Racing	P	SL/SJ	121	+10	469	500	3.70	13.00	5.2	-	-	-	n/a	-	2001	625
Kendall	GT-1 Nitro	P	-	113	+16	446	-	3.70	13.00	15.0	-	-	2600	n/a	1.70	Mar-02	608
Synergyn	Racing Oil	S	-	124	-15	411	-	3.70	13.00	5.0	-	-	-	n/a	-	?	595
Spectro	HD MCO	P	-	-	+15	520	-	3.70	13.00	5.0	-	-	-	n/a	-	?	550
Klotz	American V-Twin	S	SH/CG-4	-	-	400	-	3.70	13.00	5.0	-	-	-	n/a	-	?	445
20w70																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	SCORE
Pure Power	Nitro	P	?	149	-	-	-	3.70	13.00	13.0	-	-	-	-	0.92	Sep-99	210

'	Four ball test performed at 40 kg x 150 C x 1800 RPM. See note below.
''	Four ball test performed at 40 kg x 75 C x 1200 RPM. See note below.
'''	Four ball test performed at 40 kg x 150 C x 1200 RPM. See note below.
''''	Four ball test performed at 60 kg x 150 C x 1800 RPM. See note below.
*	Four ball test performed at unknown parameters