

# Preface

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In addition, you might want to drop by there just to check and see if there has been an update to the motor oil technical specifications listed at the end of this book. I will periodically update the ebook with new specs, but you may find that an update is issued to the forum which does not immediately end up in the electronic book.

Some areas of the site can be viewed without a registration (which is absolutely FREE), but some areas are restricted to registered members only, including the latest ebook download file and the latest technical specification charts. So, I hope you'll register for an account on our system so you can take advantage of all the site has to offer.

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Thank you,



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# Specification Chart Introduction

## RANKING SCORES

The oils are all assigned a "ranking score" based upon my own ranking algorithm which is explained below. Within each viscosity grade, the oils are listed in order from highest ranking score to lowest ranking score. This ranking algorithm isn't perfect. Please take it for what it is: an honest attempt to give readers some idea of which oils fall at the "head of the pack". □

□

In other words, the top 5 oils in a particular viscosity grade are probably the top 5, but it's □ possible that the "number 1" oil is not necessarily better than "number 2" and "number 5" might □ be better than "number 4". Find the best oils in your viscosity and carefully evaluate them.

## UNAVAILABLE SPECIFICATIONS

Not all manufacturers provide all of the specs we would like for evaluating their oil. Those specs that were unavailable are listed as "-" and count as "0" in the ranking algorithm.

## DEFAULT MINIMUM VALUES AND WEIGHTED SCORES

Additional weight is placed on the HT/HS and TBN scores. Also, the NOACK score is used in the algorithm AND given additional weight. In order not to skew the results in the case of oils that don't list HT/HS, TBN and/or NOACK scores, I've put default minimum values in for oils which don't list the information.

Based upon the SAE J300 specification chart for establishing oil viscosities, a minimum HT/HS score can be established for any viscosity of oil because this score is used to classify the oil. For instance, a 0w20 or 5w20 oil each must have a minimum HT/HS score of 2.6 in order to be given that viscosity classification. Thus, even if the company doesn't list this spec for a 0w20 or 5w20 motor oil, I know the HT/HS must be at least 2.6.

IF a company doesn't list this specification, I'm going to assume it's close to the bare minimum, and the company doesn't want customers to know it. I could be wrong, but I can't think of any other legitimate reason to leave off this specification. So, that's the number I'm going to use by default - the absolute minimum HT/HS score the oil could have and still be classified as that particular viscosity.

Any company that is upset by this can feel free to provide me with the actual HT/HS values for the chart.

## NOACK:

As I mentioned above, additional weight is being given to this spec, but to be sure the results are not abnormally skewed for oils which don't list their NOACK scores, I am inserting a default maximum value in those instances to lessen the negative affect on an oil's ranking score.

In order to meet recent API standards, gas and diesel engine oils have to have a maximum NOACK volatility score - the lower the score, the better. Those maximum values are different for gas and diesel engines, but I've tried to be generous in this department. I'm using a NOACK score of 13 as the base which is the current diesel spec max. The recent API specs for gas engine oils allow for NOACK scores as high as 15 and will still grant API gas engine oil certification.

In other words, gas engine oils which don't have the NOACK listed might be getting a break if their actual NOACK is 15, but I'm using the default of 13, which is better. I'm such a nice guy.

### **TBN:**

I'm using a default value of 5 for TBN, if a manufacturer doesn't list the TBN of it's oil. Most oils that actually list a TBN are at least 6+, but some are actually lower than that. If a manufacturer chooses not to list this very basic oil characteristic, then I think giving them a "5" is being more than generous, since they're being somewhat less than forthcoming with very basic, but important information.

This value is also given additional weight in the ranking algorithm.

### **SO WHAT'S THE ACTUAL RANKING ALGORITHM?**

The ranking scores are calculated using the following equation:

$$VI + \text{Flash} + (20 \times \text{HT/HS}) + (2 \times \text{TBN}) - (\text{Pour Point}) - (3 \times \text{NOACK}) = \text{Ranking Score}$$

NOACK scores and TBN scores tend to be in the same range (5 - 13), but I consider the NOACK score to be slightly more important because TBN has less significance if you choose not to extend your oil drain intervals. Since many people don't, the TBN becomes less significant.

The NOACK, on the other hand, I believe to hold just as much significance for short drain intervals as for long drain intervals. So, it is more applicable to more people. Thus, it is weighted at 3x instead of 2x for the TBN.

Of course, since you want LOW NOACK scores and HIGH TBN scores, the TBN is added while the NOACK score is subtracted in the ranking score equation.

The HT/HS score is typically between 2.6 and 5, so the numbers are typically lower than the TBN and NOACK. This would mean the HT/HS scores need additional weighting in order that they would have equal effect on the ranking score as compared to the effect of the TBN and NOACK scores.

In addition, because HT/HS is far more often actually listed by an oil manufacturer than is the NOACK, I give it even more weight because I less often have to use a "default" value. In many cases it is an actual value, so I think it deserves additional weighting since I'm not "guessing" at what the value might be.

This specification, as with the NOACK, will be important to any driver, regardless of their drain intervals. So, that gives reason to weight it slightly more heavily as well.

As such, you'll notice the multiplier is 20x which is about 7 times "heavier" than the NOACK. I think this is justified considering the above explanation. However, if you feel it is not, simply take a look at the top oils in your category and then take a look at the HT/HS scores of those oils. If one has a super high HT/HS score which you believe has pushed it unfairly to the top of the ranks, adjust it's ranking accordingly when making your decision regarding oil choice.

## **UPDATES TO THE SPECS FROM LAST MONTH**

On the chart, you'll notice that some listings are shown in black and some are shown in orange. Listings in black are unchanged from the previous listing.

If an oil's spec sheet DID change, you will see two listings for that oil. One will be listed in black (the old specs), the other listing will be shown in orange which will reflect the new specs. This way you can see whether a company has upgraded or downgraded it's formulation since the last update went out.

Sometimes, you'll notice that the specs for the old and new listings are the same. In these instances, the manufacturer updated the spec sheet itself (maybe some wording changed slightly or something), but the specs themselves were not changed (meaning the formulation likely didn't change).

I have still listed these in orange to indicate a change in the spec sheet, but it will be obvious that the formulation didn't change because the specs will be the same and the ranking score won't change.



# Jesus Died for You

Jesus gave his life so that we might live and live abundantly. He blesses my business endeavors every day, and I believe that it would be a tremendous oversight not to acknowledge that publicly and openly to everyone I meet.

Many might say that putting a statement like this on my Website will hurt business. Quite to the contrary, I believe that my faith cannot be separated from my business. Everything I have, the Lord has graciously given to me. My family, my business, my health and my eternal salvation: I owe it all to Him.

I pray that if you are not sure of your eternal resting place, you will read on and see the great love that Jesus has for you. If you've been trying for years to make your life "whole" but always feel like there is something missing, there is: God. He created that hole in your life in such a way that only He can fill it.

Open your heart to Him today and let him take your burdens upon His shoulders. He wants to help. He wants to provide peace and comfort, but you have to ask for it. The gift of eternal salvation is waiting for you.

It's already been gift-wrapped and there is a tag with your name on it attached to the box. But, you have to receive the gift.

## EMPTINESS

Is there an emptiness in your life? Is there a void that you just can't seem to fill? Money doesn't do it. Power doesn't do it. Sex doesn't do it. Drugs don't do it. What could possibly fill that void and make your life whole?

Jesus...Because He Loves You Enough to Die for You

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For God so loved the world, that he gave his only begotten son, that whosoever believeth in him should not perish, but have everlasting life.

-- John 3:16

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Maybe you believe in evolution, so you don't believe there is a personal God. The following might change your mind.

[Christian Answers](#)

## Here's a letter that Jesus addressed to you:

I had to write to tell you how much I love you and care for you. Yesterday, I saw you walking and laughing with your friends; I hoped that soon you'd want me to walk along with you, too. So, I painted you a sunset to close your day and whispered a cool breeze to refresh you. I waited--you never called--I just kept on loving you.

As I watched you fall asleep last night, I wanted to hold you. I spilled moonlight onto your face--trickling down your cheeks as so many tears have. You didn't even think of Me; I wanted so much to comfort you.

The next day I exploded a brilliant sunrise into glorious morning for you. But you woke up late and rushed off to class--you didn't even notice. My sky became cloudy and My tears were the rain.

I love you, oh, if you'd only listen. I really love you. I try to say it in the quiet of the green meadow and in the blue sky. The wind whispers My love throughout the treetops and spills it into the vibrant colors of all the flowers. I shout it to you in the thunder of the great waterfalls and compose love songs for birds to sing to you. I warm you with the clothing of My sunshine and perfume the air with nature's sweet scent. My love for you is deeper than any ocean and greater than any need in your heart. If you'd only realize how I care.

My Dad sends His love. I want you to meet Him--He cares too. Fathers are just that way. So, please; call on Me soon. No matter how long it takes, I'll wait--because I love you.

Your friend,

Jesus

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I hope that you don't think that I'm some "Holier than thou" Christian who's trying to reshape the human race in my "perfect" image, because this is far from the truth. According to Romans 3:23, "...all have sinned and come short of the Glory of God..." I am definitely included in this category, as are all of us.

In fact, I'm going to tell you something that I've never told anyone outside of my wife and my church small men's group before. **I have an addiction to pornography.** I say "HAVE" because unless the Lord chooses to completely "heal" me of this addiction, it will always be with me (maybe to remind me of just how **IM**perfect I am so I don't get too judgmental of others who are dealing with struggles, as if I needed any more help).

However, the Lord Jesus Christ and the Holy Spirit whom He provided to guide, direct and support me have helped me to overcome this addiction that was so severely hurting me, my marriage and my walk with God.

Why do I tell you this? Because I KNOW that many of the readers of this book are viewing pornography, even Christians, and I know that it is eating them up inside and it is tearing their families apart from the inside (even though many you may not know it).

Pornography is EVERYWHERE these days, especially if you have an internet connection (which makes it nearly anonymous). As men, we can't help that we are visually stimulated. That is how God made us, and that tendency, in and of itself, is NOT a sin.

However, our willingness to allow that tendency to draw us into viewing images of naked women who are NOT our wives IS most definitely a sin. But I'll get back to that in just a moment.

Right now I simply want to ask you a question? If you are a viewer of pornography (either "soft" or "hard"), do you truly believe that IF you wanted to, you could quit viewing pornography for a month? I'm not asking if you want to, but only whether you truly believe you COULD stop viewing porn if you wanted to.

You might superficially say, "Yeah, I can stop whenever I want. I'm in control." But, I want you to stop and really think about that question and see if there is any hesitation in you at all. If there is, I'm going to guarantee you couldn't (at least not on your own).

In fact, I'm going to challenge you. Commit to going an entire month without viewing porn. First, for those days that you manage to stay "porn free" I guarantee that you'll get more accomplished, because you won't be wasting your time on a useless "pastime".

Second, I know that many of you will fail. I know this because I was one who would have failed that test. That's how I knew it was an addiction and not just "entertainment". It started when I was a kid and didn't know any better.

Unfortunately, as I grew older and became a Christian, I then knew I was doing something I shouldn't have been but felt powerless to stop (because I hadn't fully exposed the problem to those people that mattered, so the Lord did not empower me to stop – there is power in truth).

Maybe that is a good description of you. Maybe not. Either way, if you can't stop viewing pornography, then you're addicted and the only true way to overcome an addiction is to take hold of the Power of God to free you from it (on a daily basis – I still have temptations, but, by the Power of the Holy Spirit, I am a conqueror of that addiction most every time).

Yes, I still falter, but not in the same way I used to. Now, it is simply an issue of taking control of my thoughts so that NO other woman ever has a place in my sexual fantasies besides my wife (a true gift of God). No other women should ever hold that place in my mind (or in front of my eyes), and I won't deny that I can still struggle with that a bit, but now, I recognize it immediately and CHOOSE to think of something else.

Anyway, my point is only that many of you are addicted to pornography. Those of you who aren't, quit now or you will be. Men are too much visually stimulated and continued viewing of pornography creates a fantasy world in our mind that no other women (including our wives) will ever be able to live up to. As a result, we will never feel fulfilled in the "real world" and, consequently, we will continue to be drawn back into that fantasy world.

Don't let it happen to you. If it has, do something about it. Allow the Lord Jesus Christ to free you from that sin in your life.

### **What IS Sin, Really?**

I define sin as "Anything that breaks the heart of God". Sin is actually anything that falls outside of the will of God for your life. But, anytime we choose to act in such a way that is not in accordance with God's perfect plan for your life, we choose to accept the consequences of that action which generally hurt us in some way.

At the very least, those consequences keep us from experiencing the abundant blessings our Lord and Savior Jesus Christ has planned for us. Anytime that we miss out on the blessings Father God has set aside for us, the Lord's heart is grieved. His heart breaks over our pain and our loss. But, He is a just God and there are consequences for acting in a way that is contrary to His plan. One of those consequences, a supernatural one, is eternal separation from God (IF we choose to ignore His pleading for a relationship with us).

### **Are You Entirely Sure of Your Eternity After You Die?**

Even if you haven't committed adultery or murder or some other "terrible sin", I'm sure that you've lusted after money or power, or someone of the opposite sex (or pornography). If not, have you ever said something inconsiderate or mean to another or done something that hurt another person? I know I have - plenty of times. Do you really think that any of us is perfect enough to WORK our way into heaven? Heaven is perfect, and everything and everyone who is or will be allowed to enter must be perfect.

Please do not misunderstand me. In no way am I trying to say that you, or I or anyone else on this earth is worthless, to man **or** to God. Far from it. First of all, nobody sacrifices anything for something or someone worthless. And yet, God gave His precious Son to be beaten and tortured and to die for our sins.

Doesn't this tell you something about how important we are to God? Would you allow your son or daughter or another family member to be beaten, tortured and hung on a cross to die so that the rest of us wouldn't have to? Think about just how hard that would be. God's love is so much more perfect than ours. Imagine how much He loved HIS son, and yet He still allowed Him to be born as a man for the sole purpose of dying on a cross to pay for your and my sins.

We were created in God's image, and as such we have inherent worth to God and to man (this is why abortion and euthanasia are wrong--all living beings have inherent worth to God and man, regardless of what they can or cannot do).

This worth does not depend on what we do or what we say or even how we act. If it did, we'd all be completely doomed. We do too many hurtful and selfish things to ever "work" our way into God's heart. Luckily, we are already there. God loves us in spite of our faults and shortcomings.

This message is here as a way to introduce you to Jesus, the only person who can make you perfect in the eyes of God. Because of his death on the cross and His resurrection three days later, His sacrifice, my sins have been washed away and some day I am going to meet God face to face in heaven so that I can thank him for all that he has done for me. Will you have that opportunity? We will all meet God someday. The question is whether He will allow us to remain with Him in heaven.

Jesus said, "I am the way, the truth and the life: no man (or woman) comes to the Father, but by Me." -John 14:6. If you don't know Him there's no hope. "For the wages of sin is death, but the gift of God is eternal life through Jesus Christ our Lord." -Romans 6:23.

Jesus IS our road to eternal life. Let's face it, He gave it to us, He can take it away. OR HE CAN LET US KEEP IT FOR ETERNITY!!!!

YOU can have eternal life and peace right now. Jesus can cleanse you and make you whole again in the eyes of God. Do you want peace, freedom from your addictions, the power to love and be loved again? Jesus can give you all of that and so much more. All you have to do is ask.

**Right now.** Not tomorrow, not next week or next year. That may be too late. There's no second chance after death. Besides, why would you want to wait? Jesus is offering you a gift with no strings attached--a gift so precious He had to die to give it to you.

Just ask Jesus into your heart. He's listening. Tell Him that you believe He is the Son of God, that you believe He died on a cross to pay for your sins, that you believe He rose again on the third day.

Tell Him that you know you're a sinner, and you need his cleansing power. Tell Him that you want to put your sin aside and be cleansed. He will help you. Only He can do that.

Anyone who just asked Jesus into their heart may be feeling a little different. That's good! That feeling is clean, spiritual freedom. Satan doesn't have a hold on you anymore. But, don't let it end here. You need to find someone who can support you in your new life in Christ. Old habits are hard to break and Satan is always going to be there to tempt you back.

Find a church or pastor or family member who is a Christian and tell them about your new found salvation. They will be elated. Then ask them if they will help you stay on track and keep you accountable. If you can't think of anyone, e-mail me. I'll be glad to talk with you. I'm no great religious teacher, and I'm not perfect. But, I love Jesus and He loves me. I want you to love him too. I'm here to help in any way I can.

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For those of you out there who think there is no intellectual basis for believing in God or Creation, etc., think about it this way. There are only two theories right now which are used to describe where the universe and we as individuals came from. One says that God created it all. The other, "Big Bang-Evolutionism" says that it all started about 20 billion years ago with a spinning ball of matter and a big bang. So, my question is, if God didn't create it, where did the stuff come from for there to be a big bang?

[Christian Answers](#)

# Motor Oil Technical Specifications (Ranked Order)

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## Legend:

<b>P/S/B</b> = Petroleum or Synthetic or Synthetic Blend	<b>Noack</b> = Noack Volatility (DIN 51581) 250°C for 1 hour, % weight loss
<b>API</b> = Most Current American Petroleum Institute Specification(s)	<b>TBN</b> = Total Base Number (ASTM D-2896)
<b>VI</b> = Viscosity Index (ASTM D-2270)	<b>4 Ball</b> = Four-Ball Wear Test (ASTM D 4172) Scar diameter, mm
<b>PP</b> = Pour Point (ASTM D-97)	<b>Phos</b> = Phosphorus ppm
<b>FP</b> = Flash Point (ASTM D-92)	<b>Zinc</b> = Zinc ppm
<b>FRP</b> = Fire Point (ASTM D-92)	<b>CCS</b> = Cold Crank Simulator Apparent Visc. @ x°C, cP (ASTM D 5293)
<b>HT/HS</b> = High Temperature High Shear Viscosity (ASTM D-4683)	<b>Ash %</b> = Sulfated ash percentage of motor oil volume (ASTM D-874)
	<b>Rev.</b> = 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
<b>Mobil 1</b>	<b>SuperSyn</b>	<b>S</b>	<b>SL/CF</b>	<b>165</b>	<b>-71</b>	<b>450</b>	<b>-</b>	<b>2.61</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6200 @ -35</b>	<b>1.28</b>	<b>Jun-03</b>	<b>709</b>
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
<b>CAM2</b>	<b>Synavex</b>	<b>S</b>	<b>SL/SJ</b>	<b>156</b>	<b>-54</b>	<b>437</b>	<b>-</b>	<b>2.60</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6600 @ -30</b>	<b>-</b>	<b>?</b>	<b>670</b>
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
<b>Chevron</b>	<b>Supreme</b>	<b>P</b>	<b>SL/SJ</b>	<b>148</b>	<b>-27</b>	<b>460</b>	<b>-</b>	<b>2.60</b>	<b>13.00</b>	<b>8.3</b>	<b>-</b>	<b>940</b>	<b>1120</b>	<b>5200 @ -30</b>	<b>0.90</b>	<b>Mar-03</b>	<b>665</b>
<b>Havoline</b>	<b>Petroleum</b>	<b>P</b>	<b>SL/SJ</b>	<b>148</b>	<b>-27</b>	<b>460</b>	<b>-</b>	<b>2.60</b>	<b>13.00</b>	<b>8.3</b>	<b>-</b>	<b>940</b>	<b>1120</b>	<b>5200 @ -30</b>	<b>0.90</b>	<b>Jun-03</b>	<b>665</b>
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
<b>Mobil</b>	<b>Drive Clean</b>	<b>P</b>	<b>SL</b>	<b>153</b>	<b>-26</b>	<b>392</b>	<b>-</b>	<b>2.60</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5130 @ -30</b>	<b>-</b>	<b>Jun-03</b>	<b>594</b>
<b>CAM2</b>	<b>SuperPro</b>	<b>P</b>	<b>SL/SJ</b>	<b>156</b>	<b>-49</b>	<b>-</b>	<b>-</b>	<b>2.60</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6600 @ -30</b>	<b>-</b>	<b>Oct-02</b>	<b>228</b>

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
<b>Exxon</b>	<b>XD3</b>	<b>P</b>	<b>CF/SF</b>	<b>98</b>	<b>-22</b>	<b>496</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>7.3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>0.80</b>	<b>Mar-03</b>	<b>666</b>
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	CF/SF	117	-22	482	-	2.90	13.00	12.0	-	-	-	n/a	1.40	Mar-03	664
<b>Mobil</b>	<b>Delvac 1330</b>	<b>P</b>	<b>CF/SF</b>	<b>117</b>	<b>-22</b>	<b>482</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>1.40</b>	<b>Jun-03</b>	<b>664</b>
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
<b>Havoline</b>	<b>Petroleum</b>	<b>P</b>	<b>SL/SJ</b>	<b>108</b>	<b>-27</b>	<b>482</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>7.6</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>n/a</b>	<b>0.90</b>	<b>Jun-03</b>	<b>651</b>
Chevron	Supreme	P	SL/SJ	108	-27	482	-	2.90	13.00	7.4	-	940	1030	n/a	0.90	Mar-03	651
<b>Chevron</b>	<b>Supreme</b>	<b>P</b>	<b>SL/SJ</b>	<b>108</b>	<b>-27</b>	<b>482</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>7.4</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>n/a</b>	<b>0.90</b>	<b>Jun-03</b>	<b>651</b>
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	Dec-02	646
<b>Mystik</b>	<b>JT-8 Super HD</b>	<b>P</b>	<b>SL/CF</b>	<b>103</b>	<b>-11</b>	<b>489</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>1.60</b>	<b>Aug-03</b>	<b>646</b>
TropArtic	Single Grade	P	SL/CD	103	-22	489	-	2.90	13.00	5.0	-	-	-	n/a	0.80	?	643
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
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
Chevron	Delo 100	P	CF	99	-22	475	-	2.90	13.00	7.0	-	980	1080	n/a	0.76	Sep-00	629
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
<b>Mobil</b>	<b>Delvac 1630</b>	<b>P</b>	<b>CF/SF</b>	<b>117</b>	<b>-22</b>	<b>446</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>1.40</b>	<b>Jun-03</b>	<b>628</b>
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

Appendix A

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
<b>Mobil</b>	<b>Drive Clean</b>	<b>P</b>	<b>SL/SJ</b>	<b>105</b>	<b>-6</b>	<b>453</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>-</b>	<b>Jun-03</b>	<b>593</b>
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
<b>CAM2</b>	<b>Magnum Special</b>	<b>P</b>	<b>SC</b>	<b>112</b>	<b>-</b>	<b>430</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>-</b>	<b>?</b>	<b>571</b>
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
<b>Walmart</b>	<b>SuperTech</b>	<b>P</b>	<b>SL/SJ</b>	<b>113</b>	<b>0</b>	<b>425</b>	<b>460</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>-</b>	<b>Sep-01</b>	<b>567</b>
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	0	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
<b>CAM2</b>	<b>Magnum HD</b>	<b>P</b>	<b>SL/SJ</b>	<b>112</b>	<b>-17</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>0.60</b>	<b>Aug-02</b>	<b>158</b>
<b>CAM2</b>	<b>Magnum Plus</b>	<b>P</b>	<b>SL/SJ</b>	<b>112</b>	<b>-17</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>0.60</b>	<b>Apr-97</b>	<b>158</b>
<b>CAM2</b>	<b>Magnum XHD</b>	<b>P</b>	<b>SL/SJ</b>	<b>112</b>	<b>-17</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>0.60</b>	<b>Aug-02</b>	<b>158</b>
Exxon	XD3	P	CF	100	-6	-	-	3.70	13.00	7.3	-	-	-	n/a	0.80	Nov-02	156
<b>CAM2</b>	<b>SuperPro</b>	<b>P</b>	<b>SL/SJ</b>	<b>105</b>	<b>-17</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>-</b>	<b>Oct-02</b>	<b>151</b>

Appendix A

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
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
<b>Mobil 1</b>	<b>SuperSyn</b>	<b>S</b>	<b>SL/CF</b>	<b>175</b>	<b>-65</b>	<b>453</b>	<b>-</b>	<b>2.99</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6200 @ -35</b>	<b>1.20</b>	<b>Jun-03</b>	<b>724</b>
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
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
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
<b>CAM2</b>	<b>Synavex</b>	<b>S</b>	<b>SL/SJ</b>	<b>175</b>	<b>-54</b>	<b>464</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6600 @ -30</b>	<b>-</b>	<b>?</b>	<b>722</b>
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
Valvoline	SynPower Racing	S	-	164	-49	468	-	2.90	13.00	5.0	-	-	-	2400 @ -25	-	Oct-99	710
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

<b>CAM2</b>	<b>Full Synthetic</b>	<b>S</b>	<b>SJ/SH</b>	<b>160</b>	<b>-49</b>	<b>464</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3000 @ -20</b>	<b>-</b>	<b>?</b>	<b>702</b>
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
<b>Mobil 1</b>	<b>SuperSyn</b>	<b>S</b>	<b>SL/CF</b>	<b>167</b>	<b>-49</b>	<b>435</b>	<b>-</b>	<b>3.08</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6600 @ -30</b>	<b>1.20</b>	<b>Jun-03</b>	<b>684</b>
Havoline	Petroleum	P	SL/SJ	159	-33	450	-	2.90	13.00	7.6	-	940	1030	5700 @ -30	0.90	Mar-03	676
<b>Havoline</b>	<b>Petroleum</b>	<b>P</b>	<b>SL/SJ</b>	<b>159</b>	<b>-33</b>	<b>450</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>7.6</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>5700 @ -30</b>	<b>0.90</b>	<b>Jun-03</b>	<b>676</b>
Chevron	Supreme	P	SL/SJ	159	-33	450	-	2.90	13.00	7.4	-	940	1030	5700 @ -30	0.90	Mar-03	676
<b>Chevron</b>	<b>Supreme</b>	<b>P</b>	<b>SL/SJ</b>	<b>159</b>	<b>-33</b>	<b>450</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>7.4</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>5700 @ -30</b>	<b>0.90</b>	<b>Jun-03</b>	<b>676</b>
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
<b>Havoline</b>	<b>Synthetic Blend</b>	<b>B</b>	<b>SL/SJ</b>	<b>159</b>	<b>-31</b>	<b>450</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>7.5</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>5700 @ -30</b>	<b>0.90</b>	<b>Jun-03</b>	<b>674</b>
Schaeffer	Supreme 7000	B	SL	180	-	448	485	3.50	13.00	7.1	-	-	-	5073 @ -30	0.86	Jul-02	673
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

Appendix A

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
<b>Walmart</b>	<b>SuperTech Blend</b>	<b>B</b>	<b>SJ/CF</b>	<b>152</b>	<b>-35</b>	<b>410</b>	<b>446</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3500 @ -25</b>	<b>-</b>	<b>Sep-01</b>	<b>626</b>
Mobil	Drive Clean Plus	B	SL/CF	159	-44	392	-	2.90	13.00	5.0	-	-	-	5896 @ -30	-	Apr-03	624
<b>Mobil</b>	<b>Drive Clean Plus</b>	<b>B</b>	<b>SL/CF</b>	<b>159</b>	<b>-44</b>	<b>392</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5896 @ -30</b>	<b>-</b>	<b>Jun-03</b>	<b>624</b>
TropArtic	Conventional	P	SL	155	-30	410	-	2.90	13.00	5.0	-	-	-	4688 @ -30	-	?	624
<b>TropArtic</b>	<b>Conventional</b>	<b>P</b>	<b>SL</b>	<b>155</b>	<b>-30</b>	<b>410</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4688 @ -30</b>	<b>0.80</b>	<b>?</b>	<b>624</b>
<b>Walmart</b>	<b>SuperTech</b>	<b>P</b>	<b>SL/SJ</b>	<b>155</b>	<b>-35</b>	<b>405</b>	<b>430</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3500 @ -25</b>	<b>-</b>	<b>Sep-01</b>	<b>624</b>
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/SJ	159	-38	392	-	2.90	13.00	5.0	-	-	-	5500 @ -30	-	Apr-03	618
<b>Mobil</b>	<b>Drive Clean</b>	<b>P</b>	<b>SL/SJ</b>	<b>159</b>	<b>-38</b>	<b>392</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5500 @ -30</b>	<b>-</b>	<b>Jun-03</b>	<b>618</b>
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	-	Jul-03	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

Appendix A

Pennzoil	High Mileage	P	SL/SJ	165	-27	-	-	3.30	13.00	5.0	-	-	-	7000 @ -30	-	Dec-02	229
<b>CAM2</b>	<b>Earth Friendly</b>	<b>P</b>	<b>SJ/SH</b>	<b>155</b>	<b>-44</b>	-	-	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	-	-	-	<b>6600 @ -30</b>	<b>0.60</b>	<b>Apr-97</b>	<b>228</b>
<b>CAM2</b>	<b>Magnum HD</b>	<b>P</b>	<b>SJ/SH</b>	<b>155</b>	<b>-44</b>	-	-	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	-	-	-	<b>6600 @ -30</b>	<b>0.60</b>	<b>Aug-02</b>	<b>228</b>
<b>CAM2</b>	<b>Magnum Plus</b>	<b>P</b>	<b>SJ/SH</b>	<b>155</b>	<b>-44</b>	-	-	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	-	-	-	<b>6600 @ -30</b>	<b>0.60</b>	<b>Apr-97</b>	<b>228</b>
<b>CAM2</b>	<b>Magnum XHD</b>	<b>P</b>	<b>SL/SJ</b>	<b>155</b>	<b>-44</b>	-	-	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	-	-	-	<b>6600 @ -30</b>	<b>0.60</b>	<b>Aug-02</b>	<b>228</b>
<b>CAM2</b>	<b>SuperPro</b>	<b>P</b>	<b>SL/SJ</b>	<b>155</b>	<b>-44</b>	-	-	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	-	-	-	<b>6600 @ -30</b>	-	<b>Oct-02</b>	<b>228</b>
Pennzoil	Synthetic Blend	B	SL	158	-33	-	-	3.00	13.00	5.0	-	-	-	6600 @ -30	-	Jan-02	222
<b>10w30</b>																	<b>RANKING</b>
<b>Brand</b>	<b>Product</b>	<b>P/S/B</b>	<b>API</b>	<b>VI</b>	<b>PP</b>	<b>FP</b>	<b>FRP</b>	<b>HT/HS</b>	<b>Noack</b>	<b>TBN</b>	<b>4 Ball</b>	<b>Phos</b>	<b>Zinc</b>	<b>CCS</b>	<b>Ash</b>	<b>Rev.</b>	<b>SCORE</b>
Red Line	30 Wt Race ONLY	S	-	136	-58	518	-	2.90	6.00	5.0	-	-	-	3400 @ -20	-	Apr-99	762
<b>AMSOIL</b>	<b>10w30</b>	<b>S</b>	<b>SL/CF</b>	<b>176</b>	<b>-54</b>	<b>446</b>	-	<b>3.50</b>	<b>5.50</b>	<b>12.2</b>	<b>0.35"</b>	-	-	<b>3097 @ -25</b>	<b>~1.0</b>	<b>Jun-03</b>	<b>754</b>
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
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
<b>CAM2</b>	<b>Synavex</b>	<b>S</b>	<b>SL/SJ</b>	<b>155</b>	<b>-49</b>	<b>482</b>	-	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	-	-	-	<b>7000 @ -25</b>	-	<b>?</b>	<b>715</b>
Valvoline	SynPower Racing	S	-	155	-49	480	-	2.90	13.00	5.0	-	-	-	2720 @ -20	-	Oct-99	713
<b>CAM2</b>	<b>Full Synthetic</b>	<b>S</b>	<b>SJ/SH</b>	<b>146</b>	<b>-54</b>	<b>482</b>	-	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	-	-	-	<b>2530 @ -25</b>	-	<b>?</b>	<b>711</b>
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	Dec-02	705
<b>Citgo</b>	<b>Citgard 600</b>	<b>P</b>	<b>CI-4/SL</b>	<b>140</b>	<b>-27</b>	<b>486</b>	-	<b>3.60</b>	<b>14.00</b>	<b>11.0</b>	-	-	-	<b>6500 @ -25</b>	<b>1.30</b>	<b>Aug-03</b>	<b>705</b>
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
<b>Mobil 1</b>	<b>SuperSyn</b>	<b>S</b>	<b>SL/CF</b>	<b>147</b>	<b>-49</b>	<b>471</b>	-	<b>3.17</b>	<b>13.00</b>	<b>5.0</b>	-	-	-	<b>7000 @ -25</b>	<b>1.20</b>	<b>Jun-03</b>	<b>701</b>
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
Petro Canada	Duron HD	B	CI-4/SL	143	-44	441	-	3.50	13.00	9.1	-	-	-	5648 @ -25	1.20	Aug-02	677

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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
<b>Exxon</b>	<b>XD3</b>	<b>P</b>	<b>CI-4/SL</b>	<b>145</b>	<b>-27</b>	<b>464</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>10.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>1.10</b>	<b>Mar-03</b>	<b>675</b>
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
<b>Mobil</b>	<b>Delvac 1300 Super</b>	<b>P</b>	<b>CI-4/SL</b>	<b>145</b>	<b>-22</b>	<b>444</b>	<b>-</b>	<b>3.50</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6500 @ -25</b>	<b>1.30</b>	<b>Jun-03</b>	<b>666</b>
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
Q. State	Synthetic	S	SJ/CF	148	-40	440	482	2.90	13.00	5.0	-	-	-	7000 @ -25	-	May-01	657
<b>Walmart</b>	<b>SuperTech Full Syn</b>	<b>S</b>	<b>SJ/CF</b>	<b>148</b>	<b>-40</b>	<b>440</b>	<b>482</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3500 @ -20</b>	<b>-</b>	<b>Sep-01</b>	<b>657</b>
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
<b>Havoline</b>	<b>Synthetic Blend</b>	<b>B</b>	<b>SL/SJ</b>	<b>139</b>	<b>-29</b>	<b>450</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>7.5</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>5800 @ -25</b>	<b>0.90</b>	<b>Jun-03</b>	<b>652</b>
<b>TropArtic</b>	<b>Synthetic Blend</b>	<b>B</b>	<b>SL</b>	<b>148</b>	<b>-36</b>	<b>439</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6086 @ -25</b>	<b>0.80</b>	<b>?</b>	<b>652</b>
<b>Havoline</b>	<b>Petroleum</b>	<b>P</b>	<b>SL/SJ</b>	<b>135</b>	<b>-31</b>	<b>450</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>7.6</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>5800 @ -25</b>	<b>0.90</b>	<b>Jun-03</b>	<b>650</b>
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
<b>Chevron</b>	<b>Supreme</b>	<b>P</b>	<b>SL/SJ</b>	<b>135</b>	<b>-31</b>	<b>450</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>7.4</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>5800 @ -25</b>	<b>0.90</b>	<b>Jun-03</b>	<b>650</b>
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
<b>Schaeffer</b>	<b>Micron Moly</b>	<b>P</b>	<b>SL</b>	<b>148</b>	<b>-</b>	<b>446</b>	<b>465</b>	<b>3.20</b>	<b>12.80</b>	<b>7.1</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5800 @ -25</b>	<b>0.86</b>	<b>Jul-03</b>	<b>634</b>
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
<b>TropArtic</b>	<b>Conventional</b>	<b>P</b>	<b>SL</b>	<b>139</b>	<b>-33</b>	<b>432</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4936 @ -25</b>	<b>0.80</b>	<b>?</b>	<b>633</b>
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
<b>Shell</b>	<b>FormulaShell SB</b>	<b>B</b>	<b>SL/SJ</b>	<b>140</b>	<b>-30</b>	<b>425</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>7.0</b>	<b>-</b>	<b>-</b>	<b>870</b>	<b>4750 @ -25</b>	<b>0.87</b>	<b>Jul-03</b>	<b>628</b>
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
<b>Walmart</b>	<b>SuperTech Blend</b>	<b>B</b>	<b>SJ/CF</b>	<b>138</b>	<b>-30</b>	<b>428</b>	<b>453</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3500 @ -20</b>	<b>-</b>	<b>Sep-01</b>	<b>625</b>
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
Superior Lub.	PCMO	P	SJ	155	-33	406	-	2.90	13.00	5.0	-	-	-	3200 @ -20	0.80	?	623

Appendix A

<b>TropArtic</b>	<b>Turbo</b>	<b>P</b>	<b>SL</b>	<b>135</b>	<b>-33</b>	<b>426</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6156 @ -25</b>	<b>0.85</b>	<b>?</b>	<b>623</b>
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	Dec-02	614
<b>Mystik</b>	<b>JT-8 Super HD</b>	<b>P</b>	<b>CI-4/SL</b>	<b>143</b>	<b>-27</b>	<b>406</b>	<b>-</b>	<b>2.90</b>	<b>14.00</b>	<b>11.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6500 @ -25</b>	<b>1.30</b>	<b>Aug-03</b>	<b>614</b>
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
<b>Walmart</b>	<b>SuperTech</b>	<b>P</b>	<b>SL/SJ</b>	<b>140</b>	<b>-29</b>	<b>410</b>	<b>441</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3500 @ -20</b>	<b>-</b>	<b>Sep-01</b>	<b>608</b>
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
<b>Mobil</b>	<b>Drive Clean Plus</b>	<b>B</b>	<b>SL/CF</b>	<b>145</b>	<b>-33</b>	<b>392</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6290 @ -25</b>	<b>-</b>	<b>Jun-03</b>	<b>599</b>
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/SJ	134	-33	392	-	2.90	13.00	5.0	-	-	-	6200 @ -25	-	Apr-03	588
<b>Mobil</b>	<b>Drive Clean</b>	<b>P</b>	<b>SL/SJ</b>	<b>134</b>	<b>-33</b>	<b>392</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6200 @ -25</b>	<b>-</b>	<b>Jun-03</b>	<b>588</b>
<b>CAM2</b>	<b>Magnum Special</b>	<b>P</b>	<b>SC</b>	<b>141</b>	<b>-</b>	<b>410</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>-</b>	<b>?</b>	<b>580</b>
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	-	Jul-03	504
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
<b>CAM2</b>	<b>Earth Friendly</b>	<b>P</b>	<b>SJ/SH</b>	<b>141</b>	<b>-33</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>0.60</b>	<b>Apr-97</b>	<b>203</b>
<b>CAM2</b>	<b>Magnum HD</b>	<b>P</b>	<b>SJ/SH</b>	<b>141</b>	<b>-33</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>0.60</b>	<b>Aug-02</b>	<b>203</b>
<b>CAM2</b>	<b>Magnum Plus</b>	<b>P</b>	<b>SJ/SH</b>	<b>141</b>	<b>-33</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>0.60</b>	<b>Apr-97</b>	<b>203</b>
<b>CAM2</b>	<b>Magnum XHD</b>	<b>P</b>	<b>SL/SJ</b>	<b>141</b>	<b>-33</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>0.60</b>	<b>Aug-02</b>	<b>203</b>
<b>CAM2</b>	<b>SuperPro</b>	<b>P</b>	<b>SL/SJ</b>	<b>141</b>	<b>-33</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>-</b>	<b>Oct-02</b>	<b>203</b>
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

<b>SAE 40</b>																	<b>RANKING</b>
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<b>Brand</b>	<b>Product</b>	<b>P/S/B</b>	<b>API</b>	<b>VI</b>	<b>PP</b>	<b>FP</b>	<b>FRP</b>	<b>HT/HS</b>	<b>Noack</b>	<b>TBN</b>	<b>4 Ball</b>	<b>Phos</b>	<b>Zinc</b>	<b>CCS</b>	<b>Ash</b>	<b>Rev.</b>	<b>SCORE</b>
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
<b>Havoline</b>	<b>Petroleum</b>	<b>P</b>	<b>SL/SJ</b>	<b>107</b>	<b>-22</b>	<b>509</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>7.6</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>n/a</b>	<b>0.90</b>	<b>Jun-03</b>	<b>688</b>
Chevron	Supreme	P	SL/SJ	107	-22	509	-	3.70	13.00	7.4	-	940	1030	n/a	0.90	Mar-03	688
<b>Chevron</b>	<b>Supreme</b>	<b>P</b>	<b>SL/SJ</b>	<b>107</b>	<b>-22</b>	<b>509</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>7.4</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>n/a</b>	<b>0.90</b>	<b>Jun-03</b>	<b>688</b>
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
<b>Mobil</b>	<b>Delvac 1340</b>	<b>P</b>	<b>CF/SF</b>	<b>112</b>	<b>-6</b>	<b>493</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>1.40</b>	<b>Jun-03</b>	<b>670</b>
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

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
<b>Chevron</b>	<b>Delo 100</b>	<b>P</b>	<b>CF</b>	<b>99</b>	<b>-17</b>	<b>498</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>7.0</b>	<b>-</b>	<b>980</b>	<b>1080</b>	<b>n/a</b>	<b>0.76</b>	<b>Sep-00</b>	<b>663</b>
Texaco	Ursa	P	CF/CD	99	-17	498	-	3.70	13.00	7.0	-	980	1080	n/a	0.76	Feb-02	663
<b>Exxon</b>	<b>XD3</b>	<b>P</b>	<b>CF/SF</b>	<b>98</b>	<b>-22</b>	<b>493</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>7.3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>0.80</b>	<b>Mar-03</b>	<b>663</b>
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
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
<b>Mobil</b>	<b>Delvac 1640</b>	<b>P</b>	<b>CF/SF</b>	<b>112</b>	<b>-6</b>	<b>462</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>1.40</b>	<b>Jun-03</b>	<b>639</b>
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	Dec-02	637
<b>Mystik</b>	<b>JT-8 Super HD</b>	<b>P</b>	<b>SL/CF</b>	<b>101</b>	<b>-6</b>	<b>471</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>1.60</b>	<b>Aug-03</b>	<b>637</b>
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

Appendix A

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
<b>CAM2</b>	<b>Magnum Special</b>	<b>P</b>	<b>SC</b>	<b>108</b>	<b>-</b>	<b>440</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>-</b>	<b>?</b>	<b>593</b>
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
<b>Walmart</b>	<b>SuperTech</b>	<b>P</b>	<b>SL/SJ</b>	<b>106</b>	<b>+10</b>	<b>435</b>	<b>470</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>-</b>	<b>Sep-01</b>	<b>576</b>
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
<b>CAM2</b>	<b>Magnum HD</b>	<b>P</b>	<b>SL/SJ</b>	<b>108</b>	<b>+5</b>	<b>-</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>0.60</b>	<b>Aug-02</b>	<b>148</b>
<b>CAM2</b>	<b>Magnum Plus</b>	<b>P</b>	<b>SL/SJ</b>	<b>108</b>	<b>+5</b>	<b>-</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>0.60</b>	<b>Apr-97</b>	<b>148</b>
<b>CAM2</b>	<b>Magnum XHD</b>	<b>P</b>	<b>SL/SJ</b>	<b>108</b>	<b>+5</b>	<b>-</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>0.60</b>	<b>Aug-02</b>	<b>148</b>
Valvoline	All Fleet Plus DD	P	CF-2/CF	100	-	-	-	3.70	13.00	6.5	-	-	-	n/a	0.79	Jul-01	148
<b>CAM2</b>	<b>SuperPro</b>	<b>P</b>	<b>SL/SJ</b>	<b>100</b>	<b>+5</b>	<b>-</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>-</b>	<b>Oct-02</b>	<b>140</b>
<b>0w40</b>																	<b>RANKING</b>
<b>Brand</b>	<b>Product</b>	<b>P/S/B</b>	<b>API</b>	<b>VI</b>	<b>PP</b>	<b>FP</b>	<b>FRP</b>	<b>HT/HS</b>	<b>Noack</b>	<b>TBN</b>	<b>4 Ball</b>	<b>Phos</b>	<b>Zinc</b>	<b>CCS</b>	<b>Ash</b>	<b>Rev.</b>	<b>SCORE</b>
Mobil 1	SuperSyn	S	SL/CF	187	-65	457	-	3.60	13.00	5.0	-	-	-	6200 @ -35	1.20	Mar-03	752
<b>Mobil 1</b>	<b>SuperSyn</b>	<b>S</b>	<b>SL/CF</b>	<b>187</b>	<b>-65</b>	<b>457</b>	<b>-</b>	<b>3.60</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6200 @ -35</b>	<b>1.20</b>	<b>Jun-03</b>	<b>752</b>
<b>Spectro</b>	<b>Supreme Syn.</b>	<b>S</b>	<b>SH</b>	<b>165</b>	<b>-54</b>	<b>500</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6200 @ -35</b>	<b>-</b>	<b>?</b>	<b>748</b>
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
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
<b>Mobil</b>	<b>Delvac 1</b>	<b>S</b>	<b>CI-4/SL</b>	<b>151</b>	<b>-49</b>	<b>439</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6600 @ -30</b>	<b>1.35</b>	<b>Jun-03</b>	<b>682</b>
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																	RANKING
Brand	Product	P/S/B	API	VI	PP	FP	FRP	HT/HS	Noack	TBN	4 Ball	Phos	Zinc	CCS	Ash	Rev.	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	-	Apr-03	745
<b>Mobil 1</b>	<b>MX4T Motorcycle</b>	<b>S</b>	<b>SH/CF</b>	<b>164</b>	<b>-65</b>	<b>487</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2900 @ -20</b>	<b>-</b>	<b>Jun-03</b>	<b>745</b>
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
Castrol	Syntec	S	SL/CF	148	-27	450	450	3.80	13.00	5.0	-	900	1000	7000 @ -25	-	Jun-02	672
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
<b>Havoline</b>	<b>Petroleum</b>	<b>P</b>	<b>SL/SJ</b>	<b>148</b>	<b>-29</b>	<b>453</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>7.6</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>6400 @ -25</b>	<b>0.90</b>	<b>Jun-03</b>	<b>664</b>
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
<b>Chevron</b>	<b>Supreme</b>	<b>P</b>	<b>SL/SJ</b>	<b>148</b>	<b>-29</b>	<b>453</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>7.4</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>6400 @ -25</b>	<b>0.90</b>	<b>Jun-03</b>	<b>664</b>
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

Appendix A

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
<b>Mobil</b>	<b>Drive Clean Plus</b>	<b>B</b>	<b>SL/CF</b>	<b>150</b>	<b>-22</b>	<b>440</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6270 @ -25</b>	<b>-</b>	<b>Jun-03</b>	<b>641</b>
Q. State	Motorcycle	P	SJ/SH	152	-30	430	450	2.90	13.00	5.0	-	-	-	7000 @ -25	-	Jun-00	641
<b>Walmart</b>	<b>SuperTech</b>	<b>P</b>	<b>SL/SJ</b>	<b>152</b>	<b>-30</b>	<b>430</b>	<b>450</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3500 @ -20</b>	<b>-</b>	<b>Sep-01</b>	<b>641</b>
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
<b>TropArtic</b>	<b>Conventional</b>	<b>P</b>	<b>SL</b>	<b>145</b>	<b>-33</b>	<b>424</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>5566 @ -25</b>	<b>0.80</b>	<b>?</b>	<b>631</b>
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	Dec-02	625
<b>Mystik</b>	<b>JT-8 Super HD</b>	<b>P</b>	<b>SL/CF</b>	<b>153</b>	<b>-27</b>	<b>410</b>	<b>-</b>	<b>2.90</b>	<b>15.00</b>	<b>11.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6500 @ -25</b>	<b>1.30</b>	<b>Aug-03</b>	<b>625</b>
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
<b>CAM2</b>	<b>Magnum Special</b>	<b>P</b>	<b>SC</b>	<b>145</b>	<b>-</b>	<b>425</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>-</b>	<b>?</b>	<b>599</b>
Mobil	Drive Clean	P	SL/SJ	147	-27	392	-	2.90	13.00	5.0	-	-	-	6100 @ -25	-	Apr-03	595
<b>Mobil</b>	<b>Drive Clean</b>	<b>P</b>	<b>SL/SJ</b>	<b>147</b>	<b>-27</b>	<b>392</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6100 @ -25</b>	<b>-</b>	<b>Apr-03</b>	<b>595</b>
Royal Purple	Multi-Grade	S	SJ/CF	149	-	400	435	2.90	13.00	5.0	-	-	-	7000 @ -25	-	?	578
Valvoline	Maxlife	P	SL/SJ	-	-33	468	-	2.90	13.00	8.0	-	950	1080	7000 @ -25	-	Apr-02	536

Appendix A

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
<b>CAM2</b>	<b>Earth Friendly</b>	<b>P</b>	<b>SJ/SH</b>	<b>145</b>	<b>-30</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>0.60</b>	<b>Apr-97</b>	<b>204</b>
<b>CAM2</b>	<b>Magnum HD</b>	<b>P</b>	<b>SL/SJ</b>	<b>145</b>	<b>-30</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>0.60</b>	<b>Aug-02</b>	<b>204</b>
<b>CAM2</b>	<b>Magnum Plus</b>	<b>P</b>	<b>SL/SJ</b>	<b>145</b>	<b>-30</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>0.60</b>	<b>Apr-97</b>	<b>204</b>
<b>CAM2</b>	<b>Magnum XHD</b>	<b>P</b>	<b>SL/SJ</b>	<b>145</b>	<b>-30</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>0.60</b>	<b>Aug-02</b>	<b>204</b>
<b>CAM2</b>	<b>SuperPro</b>	<b>P</b>	<b>SL/SJ</b>	<b>145</b>	<b>-30</b>	<b>-</b>	<b>-</b>	<b>2.90</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -25</b>	<b>-</b>	<b>Oct-02</b>	<b>204</b>
<b>15w40</b>																	<b>RANKING</b>
<b>Brand</b>	<b>Product</b>	<b>P/S/B</b>	<b>API</b>	<b>VI</b>	<b>PP</b>	<b>FP</b>	<b>FRP</b>	<b>HT/HS</b>	<b>Noack</b>	<b>TBN</b>	<b>4 Ball</b>	<b>Phos</b>	<b>Zinc</b>	<b>CCS</b>	<b>Ash</b>	<b>Rev.</b>	<b>SCORE</b>
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
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
<b>Mobil</b>	<b>Delvac 1300 Super</b>	<b>P</b>	<b>CI-4/SL</b>	<b>140</b>	<b>-27</b>	<b>446</b>	<b>-</b>	<b>4.30</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -20</b>	<b>1.30</b>	<b>Jun-03</b>	<b>684</b>

Appendix A

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	
<b>Schaeffer</b>	<b>Supreme 7000</b>	<b>B</b>	<b>CI-4/SL</b>	<b>145</b>	<b>-</b>	<b>457</b>	<b>495</b>	<b>4.30</b>	<b>10.80</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2804 @ -20</b>	<b>1.50</b>	<b>Jun-03</b>	<b>680</b>	
<b>CAM2</b>	<b>Super HD Prem Plus</b>	<b>P</b>	<b>CI-4/SL</b>	<b>146</b>	<b>-26</b>	<b>448</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -20</b>	<b>1.38</b>	<b>?</b>	<b>679</b>	
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	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	
<b>Citgo</b>	<b>Citgard 600</b>	<b>P</b>	<b>CI-4/SL</b>	<b>134</b>	<b>-17</b>	<b>449</b>	<b>-</b>	<b>4.30</b>	<b>11.00</b>	<b>11.5</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6700 @ -20</b>	<b>1.47</b>	<b>Aug-03</b>	<b>676</b>	
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	
<b>Chevron</b>	<b>Delo 400</b>	<b>P</b>	<b>CI-4/SL</b>	<b>134</b>	<b>-38</b>	<b>446</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>11.3</b>	<b>-</b>	<b>1280</b>	<b>1510</b>	<b>6400 @ -20</b>	<b>1.35</b>	<b>Jun-03</b>	<b>676</b>	
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	Dec-02	672	
<b>Citgo</b>	<b>Citgard 500</b>	<b>P</b>	<b>CI-4/SL</b>	<b>132</b>	<b>-17</b>	<b>446</b>	<b>-</b>	<b>4.40</b>	<b>11.00</b>	<b>11.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6600 @ -20</b>	<b>1.40</b>	<b>Aug-03</b>	<b>672</b>	
<b>Exxon</b>	<b>XD3 Extra</b>	<b>P</b>	<b>CI-4/SL</b>	<b>139</b>	<b>-27</b>	<b>446</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -20</b>	<b>1.60</b>	<b>Mar-03</b>	<b>671</b>	
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	
<b>Exxon</b>	<b>XD3 Elite</b>	<b>B</b>	<b>CI-4/SL</b>	<b>141</b>	<b>-22</b>	<b>446</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>12.5</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -20</b>	<b>1.30</b>	<b>Mar-03</b>	<b>669</b>	
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	Dec-02	652	
<b>Exxon</b>	<b>XD3</b>	<b>P</b>	<b>CI-4/SL</b>	<b>138</b>	<b>-27</b>	<b>430</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>10.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -20</b>	<b>1.10</b>	<b>Mar-03</b>	<b>650</b>	
<b>Mystik</b>	<b>JT-8 Super HD</b>	<b>P</b>	<b>CI-4/SL</b>	<b>136</b>	<b>-17</b>	<b>435</b>	<b>-</b>	<b>3.70</b>	<b>12.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6550 @ -20</b>	<b>1.50</b>	<b>Aug-03</b>	<b>650</b>	
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	
<b>Schaeffer</b>	<b>Moly Bond X-200</b>	<b>P</b>	<b>CI-4/SL</b>	<b>140</b>	<b>-</b>	<b>442</b>	<b>485</b>	<b>4.08</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2791 @ -20</b>	<b>1.50</b>	<b>Jun-03</b>	<b>649</b>	
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	

Appendix A

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	CF/SF	110	0	554	-	3.70	13.00	12.0	-	-	-	n/a	1.40	Mar-03	723
<b>Mobil</b>	<b>Delvac 1350</b>	<b>P</b>	<b>CF/SF</b>	<b>110</b>	<b>0</b>	<b>554</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>1.40</b>	<b>Jun-03</b>	<b>723</b>
Mobil	Delvac 1650	P	CF/SF	110	0	554	-	3.70	13.00	12.0	-	-	-	n/a	1.40	May-03	723
<b>Mobil</b>	<b>Delvac 1650</b>	<b>P</b>	<b>CF/SF</b>	<b>110</b>	<b>0</b>	<b>554</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>1.40</b>	<b>Jun-03</b>	<b>723</b>
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
<b>Exxon</b>	<b>XD3</b>	<b>P</b>	<b>CF/SF</b>	<b>99</b>	<b>-17</b>	<b>507</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>7.3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>0.80</b>	<b>Mar-03</b>	<b>673</b>
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
<b>Chevron</b>	<b>Delo 100</b>	<b>P</b>	<b>CF</b>	<b>98</b>	<b>-17</b>	<b>498</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>7.0</b>	<b>-</b>	<b>980</b>	<b>1080</b>	<b>n/a</b>	<b>0.76</b>	<b>Sep-00</b>	<b>662</b>
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	Dec-02	640
<b>Mystik</b>	<b>JT-8 Super HD</b>	<b>P</b>	<b>SL/CF</b>	<b>101</b>	<b>+5</b>	<b>485</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>12.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>1.60</b>	<b>Aug-03</b>	<b>640</b>
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
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
<b>Synergyn</b>	<b>Racing Oil</b>	<b>S</b>	<b>-</b>	<b>120</b>	<b>-18</b>	<b>411</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>-</b>	<b>?</b>	<b>594</b>
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
<b>Spectro</b>	<b>HD MCO</b>	<b>P</b>	<b>-</b>	<b>-</b>	<b>0</b>	<b>510</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>n/a</b>	<b>-</b>	<b>?</b>	<b>555</b>
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
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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
<b>CAM2</b>	<b>Full Synthetic</b>	<b>S</b>	<b>SJ/SH</b>	<b>201</b>	<b>-49</b>	<b>448</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3000 @ -25</b>	<b>-</b>	<b>?</b>	<b>743</b>
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
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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
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
<b>Mobil 1</b>	<b>SuperSyn</b>	<b>S</b>	<b>SL/CF</b>	<b>153</b>	<b>-49</b>	<b>446</b>	<b>-</b>	<b>5.11</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7000 @ -20</b>	<b>1.30</b>	<b>Jun-03</b>	<b>721</b>
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	Dec-02	649
<b>Mystik</b>	<b>JT-8 Super HD</b>	<b>P</b>	<b>CI-4/SL</b>	<b>138</b>	<b>-17</b>	<b>430</b>	<b>-</b>	<b>3.70</b>	<b>12.00</b>	<b>13.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>6600 @ -20</b>	<b>1.70</b>	<b>Aug-03</b>	<b>649</b>
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	-	Apr-03	773
<b>Mobil 1</b>	<b>V-Twin</b>	<b>S</b>	<b>SH/CF</b>	<b>150</b>	<b>-60</b>	<b>518</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2930 @ -10</b>	<b>-</b>	<b>Jun-03</b>	<b>773</b>
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	Dec-02	703
<b>Citgo</b>	<b>Citgard 500</b>	<b>P</b>	<b>CF-4/SL</b>	<b>121</b>	<b>-11</b>	<b>486</b>	<b>-</b>	<b>4.50</b>	<b>9.00</b>	<b>11.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7900 @ -15</b>	<b>1.50</b>	<b>Aug-03</b>	<b>703</b>
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
<b>Havoline</b>	<b>Petroleum</b>	<b>P</b>	<b>SL/SJ</b>	<b>122</b>	<b>-20</b>	<b>496</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>7.6</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>8000 @ -15</b>	<b>0.90</b>	<b>Jun-03</b>	<b>688</b>
Chevron	Supreme	P	SL/SJ	122	-20	496	-	3.70	13.00	7.4	-	940	1030	8000 @ -15	0.90	Mar-03	688
<b>Chevron</b>	<b>Supreme</b>	<b>P</b>	<b>SL/SJ</b>	<b>122</b>	<b>-20</b>	<b>496</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>7.4</b>	<b>-</b>	<b>940</b>	<b>1030</b>	<b>8000 @ -15</b>	<b>0.90</b>	<b>Jun-03</b>	<b>688</b>
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

Appendix A

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
<b>Walmart</b>	<b>SuperTech</b>	<b>P</b>	<b>SL/SJ</b>	<b>121</b>	<b>-20</b>	<b>441</b>	<b>455</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>4500 @ -10</b>	<b>-</b>	<b>Sep-01</b>	<b>627</b>
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	0	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
<b>Mobil</b>	<b>Drive Clean</b>	<b>P</b>	<b>SL/SJ</b>	<b>124</b>	<b>-17</b>	<b>392</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>8200 @ -15</b>	<b>-</b>	<b>Jun-03</b>	<b>578</b>
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
<b>CAM2</b>	<b>Magnum HD</b>	<b>P</b>	<b>SL/SJ</b>	<b>130</b>	<b>-22</b>	<b>-</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>9500 @ -15</b>	<b>0.60</b>	<b>Aug-02</b>	<b>197</b>
<b>CAM2</b>	<b>Magnum Plus</b>	<b>P</b>	<b>SL/SJ</b>	<b>130</b>	<b>-22</b>	<b>-</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>9500 @ -15</b>	<b>0.60</b>	<b>Apr-97</b>	<b>197</b>
<b>CAM2</b>	<b>Magnum XHD</b>	<b>P</b>	<b>SL/SJ</b>	<b>130</b>	<b>-22</b>	<b>-</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>9500 @ -15</b>	<b>0.60</b>	<b>Aug-02</b>	<b>197</b>
<b>CAM2</b>	<b>SuperPro</b>	<b>P</b>	<b>SL/SJ</b>	<b>130</b>	<b>-22</b>	<b>-</b>	<b>-</b>	<b>3.70</b>	<b>13.00</b>	<b>5.0</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>9500 @ -15</b>	<b>-</b>	<b>Oct-02</b>	<b>197</b>
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																	