

Please note that there may be some redundancy here, as I've copied/pasted essentially all the oil notes in my archived folder. I think there is some worthwhile info. Here. Enjoy.

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mbca-L

Tue, 27 Apr 1999

Volume 1 : Number 2620

In this issue:

**Oil for Diesels**

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Date: Tue, 27 Apr 1999 19:12:00 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: mbca-L@mbca.org  
Subject: Oil for Diesels  
Message-ID: <37266E70.41E9@earthlink.net>

I may have mentioned to some of you that I have a friend in the lubrication business. His name is George, and he works for a company in the mid-west that does a lot of work analyzing and testing oils for major companies. I've initiated a conversation with him about the benefits of using a dedicated Diesel oil vs. an oil primarily formulated for gas engines but which meets some Diesel standards. On this list a conversation has centered around Mobil1 for use in our beloved MBZ Diesels. I thought George might have a few comments, so I'm passing along the beginning of our conversation. If you have any questions, just pass them along through me, and I'll see that George has a chance to answer them.

I wrote George and said:

A number of people on the Mercedes list feel that using the current Mobil1 (CF rated) is acceptable in their Diesel engines. OTOH, as you know, I've always felt that a dedicated Diesel oil, such as the various Delvac oils, would be a better choice.

What is the difference in the base stocks used in Delvac 1 and Mobil1? How does Mobil1 compare to Delvac 1 (and even Delvac 1300S) wrt TBN, soot retention, residual sulphated ash, and other characteristics generally of concern to Diesel owners? What benefit is there to run Delvac (or other "dedicated" Diesel oils) over Mobil1 and other oils that seem to be primarily formulated for gasoline engines?

And George replied:

Wow, quite a list Shel! Well, here we go.  
First of all, one advantage of the diesel type oils is the thicker base oils used and resultant 40 weight viscosities, v the 30W for the Mobil1. Which is also one of the secrets of the regular Delvac 1300 vs. "the rest" (Rotella, Delo, etc.) Delvac 1300 is and always has been blended right near the upper limit of 40 weight while others have always been in the mid to even lower limit of 40 weight. It's cheaper to be thinner.. Getting very basic, we are keeping metal away from metal with an oil film; the thicker the film, the less wear and stress on the additive package for anti-wear, etc. So a very clear advantage just in base oils for the diesel oils (and the Delvac's), IF the engine is designed for a

40 weight. If the Mercedes or other diesel manual was designed for a 30W, then the Mobil1 30 weights would be more optimum \*in terms of vis.\* (emphasis mine)

\*\*\*\*\* Note that there are a number of Diesel oils with a 10W30 rating, such as Delvac 1300S, so it's possible to get the benefits of the dedicated Diesel oil along with the proper viscosity.

Regarding additive packages, the diesel oils have a much higher TBN than the gasoline oils/Mobil1. Acid neutralization is not the concern it used to be but a higher TBN contributes much more to the total oil performance than just that aspect. And of course residual sulphated ash is quite important,(more the better) as it gives an indication of the metallic AW additive levels, etc. Again, Mobil is one of the few that has been able to retain a very high level of anti wear additization/sulphated ash and yet still pass the CH-4 tests. It is much easier (and less costly) to back off on the metallic additives to make it through the CH4 land cleanliness checks!

I hate to make this sound like a Mobil commercial but both the Delvac 1 and Delvac 1300 are head and shoulders above the field at this point.

The new Delo 400 looks like it may be a strong contender but has no track record at this point. As you are aware, Delo is now a group 2 base stock with a completely new additive package?

As for comparison of Delvac 1300 vs. Delvac 1. I am familiar with fleets running 1300 up to 35,000 miles. Correspondingly, know fleets running Delvac 1 at 100,000 drain intervals with filter changes at either 25,000 miles or 50,000 miles, depending on fleet. One fleet that does 100,000 mile ODI's (25,000 mile filter changes) has 30% of its fleet with 1,000,000 miles on its Cummins engines without overhaul or any major component replacement. And it is a combined city/highway operation. Quite a statement.

I hope I have answered some of your questions. If I have created more, get back with them!

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Shel Belinkoff  
California North Bay Section  
1972 280SE 4.5

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mbca-L

Wed, 28 Apr 1999

Volume 1 : Number 2622

In this issue:

Re: Diesel Oil

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Date: Wed, 28 Apr 1999 08:23:59 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: mbca-L@mbca.org

Subject: Re: Diesel Oil  
Message-ID: <3727280F.752A@earthlink.net>

Continuing my conversation with George about the use of dedicated Diesel oils in our MBZs:

I wrote to George in response to his first post:

George,

Thanks! A couple of questions do come up.

First, while you mention Mobil1 in the 30wts, you've said nothing about Mobil1 15W50. You mentioned 30wt from a viscosity standpoint, but given that Delvac 1300S comes in a 10W30, would you not recommend that over a conventional oil that was primarily formulated for gas engines. Let's leave the synthetic out of this for a moment.

Now, given that an engine may require a heavier oil, either by design or because of wear, would you suggest a 5W40 like Delvac 1 over a 15W50 like Mobil1, unless the engine \*had to have\* the 50wt. These days 40wt seems more than adequate in good running Diesels.

You mentioned Delo 400 now using a Group 2 base stock, and having been reformulated. What are the differences between a Group 2, Group 3, and other base stocks. I recall that (at least on the west coast) Chevron was using a pretty good base stock (Group 3?) in their Delo 400. IAC, does this mean they're now using a lesser-quality stock and boosting the quality through additives. Is the reformulated Delo 400 available yet?

And George replied:

I did not mention Mobil 1 15W50 in that no diesel I am familiar with specs a 50W, thus no application. It is between the 30W and 40W Mobil 1's and Delvacs as choices. And yes, Delvac 1300 is available in a 10W-30 but in limited package sizes (like no quarts, etc.) so I did not mention it. However, 1300 10W-30 is a superb choice for those diesels requiring a 30W; in a Mercedes application calling for a 30W one could go either way with 1300 10W-30 or Mobil 1 10W-30; yes, the 1300 10W-30 has a much higher TBN and additive package than the Mobil 1 but it is still a preferential call by the user given the inherent advantages of the synthetic base stock in the Mobil 1.

Regarding your question of the engine requiring a 40W; no question: Delvac 1 5W-40. I would NOT recommend the use of the Mobil 1 15W-50 in a diesel spec'd for either 30W or 40W.

Regarding Chevron Delo 400 reformulation. This was done just prior to the first of the year and it was to a group 2 base stock nationwide. Group 1 base stock is a solvent refined (the refining process used by everyone for years). Group 2 and 3 uses a new refining process called Hydrocracking where hydrogen is introduced under pressure removing much more of the "unwants" from the crude and the potential of yielding a much higher quality base oil, OR the possibility of being able to refine

crudes which solvent processes can't. Group 2 oils generally have a higher resistance to oxidation than solvent refined along with other positive aspects. Group 3 oils are the "creme de la creme" of the hydrocracking process and ARE very close to synthetic with respect to their properties but do not have all of the synthetic advantages. As per our discussion on CS with Tom, there is a raging furror right now on the definition of synthetics; those who do not have synthetics are jumping on the group 3 bandwagon trying to get it okayed to call it synthetic. Which is where my original post came from regarding Castol's Syntec; it started out life as a 100% synthetic (sans additive carrier) and is now a blend of synthetic and group 3 (mineral base) oils.

The hair splitting on this definition is that synthetics have always been related to synthesizing a molecule from another: i.e. the complete transformation of a chemistry to make a new chemistry. Whereas hydrocracking is rather a cleansing process; chemsity is not changing, just removing of impurities or unwanted chemistries, leaving the desired molecules.

Since group 3 is a much more costly base oil and have not really been given the "synthetic" moniker yet, we will probably not be seeing engine oils marketed as such; and no, Chevron Delo 400 is not group 3. Chevron, Mobil and all have had to reformulate with the CH-4 requirements and everyone did this prior to the end of last year. Mobil 1300S and Delvac reformulations were complete and on shelves in April of 1998.

Regarding Delo West Coast: yes, you are correct in that Chevron's California plant had hydro cracking refining capabilities and Delo 400 had some Group 2 in it. It is now all group 2 all over the country. HOWEVER, how group 2 is going to work in real life is quite another matter. Conoco has had to recall a group 2 natural gas engine oil (in fact discontinued completely!) in that the additive package was not being held in suspension and literally settling to the bottom of drums. In other words, all that would appear to be superior about Group 2 over group 1 may not be so; we will have to wait until "the rest of the story" to see.

Another component which is not being discussed is crude quality. Companies like Mobil/Exxon have some of the highest quality reserves and when solvent refined, are 10 level oils. Prior to hydrocracking, crudes from Brazil, etc. were difficult if not impossible to refine economically, and even then were not close to the sweet crude's end quality. Hydrocracking enables one to process just about anything black and produce a decent, tho maybe not superior, product. That is the real secret of hydrocracking; one can now process the dregs of the world and make a product that will pass. We will not be seeing much Group 3 as commercial products for a while or until engine builder specs mandate it.

George

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Shel Belinkoff  
California North Bay Section



ranges for every passenger car in the world, but he may find this information useful in the future.

Thanks again, Shel.

Steve A.

'79 300SD (running Mobil 1 15W-50 now, but switching to Delvac 1 5W-40 year-round)

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mbca-L

Wed, 28 Apr 1999

Volume 1 : Number 2628

In this issue:

Re: [Oil Thread](#)

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Date: Wed, 28 Apr 1999 19:10:51 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: mbca-L@mbca.org  
Cc: "Armstrong, Stephen" <SArmstro@stai.com>  
Subject: Re: Oil Thread  
Message-ID: <3727BFAB.6ABA@earthlink.net>

Hi, Stephen,

You asked: am I to assume ... that the old formulation of Mobil 1 will \*no longer\* be available after the TriSyn formulation goes on sale May 1st?

That is my understanding. However, there will still be old stock in the pipeline, so there should still be time to buy the current formulation.

> Given that Delvac 1 sells for the same price as Mobil 1, why \*not\* use  
> it instead of Mobil 1 in a diesel? Tom certainly seemed to suggest it  
> would be a better choice. Was there any doubt remaining on this  
> question?

My preference is to use a dedicated Diesel oil for Diesel operation. While Mobil1, or other oils primarily formulated for gas engines may be adequate, Diesel oils generally have higher TBN ratings and better soot retention characteristics.

Here's something I posted to another list member dealing with the subject:

TBN is usually most important for Diesel oils, as Diesel fuel contains more sulfur than gasoline. While much of the sulfur has been removed from Diesel fuel over the last few years, the quality of the fuel varies around the country and with different suppliers. The higher TBN in Diesel oil aids in fighting the effects of acid and corrosion in the engine. However, research has shown that a higher TBN oil will reduce wear as well, even in engines not subject to high-sulfur fuels, i.e.,

gasoline engines.

Not only does a higher TBN oil seem better in combating corrosive wear, but the oil property called "TBN retention" is an important factor. TBN is like an antacid tablet for a person. While some additive packages may show a good TBN number, like 10 or more, their TBN retention might be poor and delete more rapidly than a similar oil. Some antacids work well, but not for a long time <g>.

So, what we want in a Diesel oil is high TBN and good TBN retention. Mobil Delvac 1 has a TBN of about 11, and Delvac 1300S slightly higher at 12. There is no other readily available commercial Diesel oil for cars and trucks available with a higher TBN that I know of - well, let me modify that statement. The new Delo 400 ESI has a TBN of 12.5. (However its base stock is a group 2 hydrocracked stock that has not yet proven itself in the field. I suspect, however, that it will be fine, but some group 2 and group 3 stocks [Notably a Conoco product] have had problems with additives falling out of suspension). Shell Rotella is less - as low as 7.5 in some blends; Havoline is less - about 8 or so. I believe Valvoline is less, and so on. Amsoil synthetic Diesel has a TBN of 10 or 12 - I forget which.

If you recall, I mentioned that a good TBN number can also prevent wear in gasoline engines. This may be of greater importance for cars used a lot in short trips, where more acids are formed (gasoline does contain some sulfur). I use Delvac in my 4.5 ... not only is the viscosity grade ideal for the climate here, but the extra protection I get from the additive package makes me feel secure. This, BTW, is one of the reasons I'm not that keen on Mobil1 for use in Diesel-engined cars. It just doesn't have the higher TBN - although it is possible the engines may not need such a high TBN -especially with frequent oil changes - I see no reason to push my luck when there's such a fine oil available for the same price.

Hope this helps.

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Shel Belinkoff  
California North Bay Section

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mbca-L

Thu, 29 Apr 1999

Volume 1 : Number 2631

In this issue:

Re: [Oil Thread](#)

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Date: Thu, 29 Apr 1999 00:28:47 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: KenAC@aol.com  
Cc: mbca-L@mbca.org  
Subject: Re: New Mobil

Message-ID: <37280A2F.719C@earthlink.net>

KenAC@aol.com wrote:

>

> In these cases where a car manufacturer uses, and \*in particular\*  
> makes a point of advertising that they recommend, a \*single, certain\*  
> brand of something (e.g., oil, or a tire -- whose brand, unlike oil,  
> can be seen by the consumer), I tend to think that this is a case  
> analogous to "product placement" in the movies. That is, the  
> product's manufacturer \*paid\* the car company, or at least gave them a  
> hefty price break, to use (and proclaim) their product.

This is sometimes true, but not always. For example, Chrysler in Europe signed a five year agreement with Mobil to recommend their products, and from the documents I've read, it's nothing more than a marketing ploy.

However, the arrangement with Porsche is different, in that the two companies work together on an engineering and technology level, so Porsche's use of Mobil1 is more than just marketing. Their relationship goes into the laboratory as well. True, Mobil has the money and the engineers to make this possible, while a small company, such as Red Line (which makes good products as well) just couldn't offer Porsche the engineering talent that Mobil does.

Mobil's alliance with Ford is something different. Both companies are working together to develop new fuels and technology, especially fuel cell technology and direct injection Diesel technology. The point that's interesting here is that, to the best of my knowledge, Ford doesn't recommend Mobil products specifically.

Further, in the area of big trucks and Diesels, Detroit Diesel recommends Mobil's Delvac lubricants, but does so not because of any involvement or financial consideration by Mobil that I know of. Detroit Diesel tested a number of oils, and for certain of their engines, Delvac is specifically recommended. They have endorsed Delvac 1, and have added Delvac 1 alongside Delvac 1300 Super on the valve cover decal for Detroit Diesel Series 60 engines. If this were just a marketing ploy, DD would probably be recommending Delvac in ALL their engines, but they don't. DD found that Delvac worked best in the Series 60 engine compared to other oils.

Cummins, OTOH, recommends Valvoline Premium Blue or Valvoline Premium Blue 2000. This is another, and very different, example of a manufacturer recommending a specific product. Cummins actually had Valvoline produce an oil to meet their specs, and also sells the oil under their own name as well.

So, the reason why a manufacturer may recommend an oil could well be marketing, or it could have sound technological reasons. Each case should be judged on its own merits.

> but there is really no significant difference between Mobil 1 and  
> other synthetics.

That's absolutely untrue. Without arguing which is "better," there are a number of different synthetic base stocks that are used. Mobil uses a PAO-based stock, Red Line, Polyolesters, and some others use Alkylated aromatics. Each of these stocks have their own characteristics, and behave somewhat differently under certain circumstances. For example, the stocks used in Red Line and in Mobil1 afford a broad and stable viscosity range, yet the stock used in Casrol Syntec needs substantially more viscosity improvers to make their 5W50 synthetic - and these VIs break down over time, and don't allow the lubricant the stability of other oils. So to say that there's no significant difference between oils is, perhaps, misleading.

Of course, one could next go into the various additive packages that further differentiate one oil from another, but I think the point is made - hopefully not with too heavy a hand <g>.

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Shel Belinkoff  
California North Bay Section

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mbca-L Thu, 29 Apr 1999 Volume 1 : Number 2635

In this issue:

Re: Diesel Oils

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Date: Thu, 29 Apr 1999 10:15:34 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: Daniel Penoff <penoff@mbz.org>  
Cc: mbca-L@mbca.org  
Subject: Re: Diesel Oils  
Message-ID: <372893B6.31E1@earthlink.net>

Daniel Penoff wrote:

>  
> Not to divert from your oil buddy's commentary (I found it to be very  
> interesting, I might add) what if any suggestions does he have for the  
> non-synthetic oils out there? I ask because of the following:  
>  
> 1.) I have older cars, which I have found to experience high oil  
> consumption if changed from dino-based oils to synthetics;

[snip]

> 3.) What is the best oil from a base stock standpoint if we're going  
> with non-synthetics?

Dan,

I had just this conversation with George a while back, and little has changed since then. Here's his response to my exact question:

#: 757245 S6/Tires/Oil/Gas/Lube  
02-May-97

16:58:03

Sb:

#756889-Diesel Oil

Fm:

George Morrison

75521,22

To: Sheldon C. Belinkoff 76177,3361 (X)

Shel: **If you can get it, Mobil Delvac 1300S 15W-40 has the highest additive levels of any commercial oil. plus superb base oil.** Nearly double additive levels, in fact. Its twin, Caterpillar Diesel Oil (Made by Mobil for Cat) is its equal although much more expensive..

**I recently did an oil analysis survey with all of the diesel engine oils and these two oils (additive-wise) were head and shoulders above all other mineral based commercial diesel engine oils.** The New Shell Rotella was formulated to correct a problem the old formulation had with soot. The oil is still \*not\* up to the level of Delvac 1300.

In summary, Delvac 1300S 15W-40/Caterpillar first choice, Chevron Delo 400 second choice, and Shell Rotella T with XLA new and improved, absolutely last case, no other oil readily available situation...

Dan, Since this discussion with George, Chevron has released a rather interesting oil - it's called Delo 400 ESI (extended service interval). It uses a group 2 base stock, has a high TBN, a residual ash of about 1.45%, and it's supposed to be quite good. However, since it's new, I'd like to wait and see how it performs in the field. I don't know the price of the product, but it should certainly be less than the synthetics.

BTW, regular Delo used a different base stock on the west coast for some time. East coast users received a different, and arguably lower quality, stock. I'm not sure if that's changed, but the ESI is the saame nationwide.

NEWS FLASH: Hot off the press in this morning's mail!

Regarding Delo West Coast: yes, you are correct in that Chevron's California plant had hydrocracking refining capabilities and Delo 400 had some Group 2 in it. It is now all group 2 all over the country. HOWEVER, how group 2 is going to work in real life is quite another matter. Conoco has had to recall a group 2 natural gas engine oil (in fact discontinued completely!) in that the additive package was not being held in suspension and literally settling to the bottom of drums. In other words, all that would appear to be superior about Group 2 over group 1 may not be so; we will have to wait until "the rest of the story" to see.

I hope this helps.

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Shel Belinkoff

California North Bay Section

In this issue:

Re: **blanket generalization on oil considered**

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Date: Thu, 29 Apr 1999 12:41:26 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: mbca-L@mbca.org  
Cc: Gary Hurst <shmabby@mindspring.com>  
Subject: Re: blanket generalization on oil considered  
Message-ID: <3728B5E6.6CCA@earthlink.net>

> Hmmm, to think I might have  
> always been paying more money (regular Mobil and Havoline are dirt  
> cheap at the discounters) to get less quality. (for example, paying  
> \$1.29 for "inferior base stock" Castrol when "superior" stock Mobil  
> was \$0.89 a quart.)

Well, there are no Castrol refineries ... Castrol is a marketing office  
somewhere on Madison Avenue <vbg>. Their oils are contracted depending  
on locale. Chevron does packaging/blending on the West Coast, Exxon  
does some, etc. etc. So, depending on where you buy your castrol, the  
contents of the container may not be the same as aa container purchased  
elsewhere. While additive packages may be formulated to spec, base  
stocks may not be the same.

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Shel Belinkoff  
California North Bay Section

In this issue:

**Delvac 1300S Availability**  
Re: **blanket generalization on oil considered**

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Date: Thu, 29 Apr 1999 22:20:49 -0400  
From: Angelo Giaimo <agiaimo@ibm.net>  
To: Mercedes List <mbca-L@mbca.org>  
Subject: Delvac 1300S Availability  
Message-ID: <37291381.1F94@ibm.net>

Hi gang,

With all this talk about reformulated Mobil 1 and Delvac 1, (Both, as

Daniel Penoff points out, might be too expensive to use in our Oil Burners), but might be interested in dino-Delvac 1300, I just found two local sources tonight.

1'st, try <http://www.oilspot.com> . Found Delvac 1300 S 15W40 for \$25.60 per 4-1Gal cans. Comes to \$1.60/qt. Not too bad, considering I was paying ~\$1.16/qt for the "great" Shell Rotella T 15W40 at BJ's.

But tonight I dropped into my local Auto Zone and found it for \$5.39/gal...~\$1.34/qt. Never saw it there before. (Maybe they got one where you live, Dan?) Think I'll switch on my next oil change. I'll try to run an oil analysis old/new to see if there's any benefit.

Glad to see we're all one big happy family again.....

Angelo Giaimo  
1990 350SDL 118K  
Unix Biggot, Webmaster, Lotus Notes Developer..just to name a few.  
Hudson-Mohawk Section

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Date: Thu, 29 Apr 1999 19:52:46 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: Gary Hurst <shmabby@mindspring.com>  
Cc: mbca-l@mbca.org  
Subject: Re: blanket generalization on oil considered  
Message-ID: <37291AFE.271A@earthlink.net>

Gary Hurst asks:

>

> So why then the rabid devotion of import car folks to Castrol?

Reputaation! back in the early days of sports car racing, after WWII, Castrol-R had a wonderful reputation, although I'm not sure how well-deserved it was. In those days nobody did any oil analysis, extended drain intervaaals was never heard of - oil was changed every 1,000 miles, the heads were de-coked frequently, and valve jobs were common. Probably, in that time, castrol was fine, and maybe better than some. It was almost like a badge of honor to "run Castrol," especiaally Castrol-R. It smelled different than the other oils as it burned (yes, that too, was a badge of honor). You could always tell which cars were running Castrol-R by the way the exhaust smelled.

Just as an aside, Castrol has recently reintroduced their "old technology" (low detergent) oils for vintage cars and motorcycles. This may well be something worth considering for those who want to carry authenticity as far as it can go with their cherished old cars and motorcycles. Apart from authenticity, there is a good reason for using these low-detergent oils in vintage cars. These engines are often in an unrestored or unknown condition and it is essential that a low detergent formulation is used to ensure that engine deposits which may currently seal the engine are not loosened, causing oil leaks or blocking of oilways.

To quote Castrol wrt to the "R" formulation - which, BTW, was a castor based oil: CASTROL R40 SAE 40. A high performance castor based engine oil with the distinctive Castrol R aroma suitable for four-stroke engines.

So, IMHO, Castrol rides on its reputation, and slowly, as the sun sets on oil fields all over the world, that reputation is eroding. I do, however, applaud them for bringing back that good, old-fashioned oil. The smell of burning Castrol-R is an integral part of vintage car and motorcycle ownership. Ahh, the memories ....

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Shel Belinkoff  
California North Bay Section

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mbca-L                      Fri, 30 Apr 1999                      Volume 1 : Number 2646

In this issue:

**Re: Why do you need thicker oil in the summer?**

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Date: Thu, 29 Apr 1999 22:53:18 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: mbca-L@mbca.org  
Subject: Re: Why do you need thicker oil in the summer?  
Message-ID: <3729454E.50A@earthlink.net>

Peter,

I pretty much agree with everything you say. I've essentially used nothing but xW30 in my cars and trucks for about 15 years. Exceptions have been my Diesel trucks, in which I used a 15W40 oil and one or two of my old cars - 100,000 miles, 1960 vintage - where the thicker oil seemed a good idea due to mileage, limited use, and old engine designed with generally greater clearances than newer engines. I'm also using a 15W40 in the Mercedes, which is 28 years old and which, according to the information I've read, can use a slightly heavier oil due to more generous clearances in some areas.

While you've said it in a manner of speaking, I'd like to put it in another way: one should use the viscosity that's appropriate for the engine's condition and design, and for the environment in which it's used. Thicker is not always better, nor is thinner. Consider all factors of engine operation to determine the correct viscosity for your situation. In most cases, especially with newer engines, 30w is just fine - especially a well designed 30wt. In fact, it's been the unofficial standard for as long as I can remember - going back to the days of single weight oils before the advent of detergents and other additives.

By a well designed oil I mean there are 30wt oils that use more viscosity modifiers than others, or use cheaper modifiers, and which are

more susceptible to loosing viscosity due to the shearing of the polymers. Those oils could loose enough viscosity over 3,000 to 5,000 miles that their ability to protect is compromised. Usually those oils are using minimal or inexpensive additive packages as well, futher compromising their effectiveness. Therefore NEVER skimp on oil if you care about your engine's longevity. If you're in doubt about the quality of the oil you've chosen, at least change it frequently, or use oil analysis to see how it's holding up under your conditions.

Thanks for posting your thoughts, Peter.

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Shel Belinkoff  
California North Bay Section

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mbca-L

Fri, 30 Apr 1999

Volume 1 : Number 2648

In this issue:

**Re: Why do you need thicker oil in the summer?**

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Date: Fri, 30 Apr 1999 08:52:13 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: mbca-L@mbca.org  
Subject: Re: Why do you need thicker oil in the summer?  
Message-ID: <3729D1AD.473E@earthlink.net>

Hi, Peter ...

Apart from splitting semantic hairs, it seems we're in complete agreement wrt appropriate oil viscosity. You know, I participate in several automotive and truck forums - here on the Mercedes lists and on the CARS forum and the TRUCKS forum on Compuserve. There are a number of very knowledgeable people in the oil and lubrication business who participate in the Compuserve forums. 30wt is generally the oil viscosity recommended by these experts. It is only in this venue - these Mercedes mailing lists - do I find such enthusiasm for heavier oils. However, the Europeans in general tend to favor heavier oils. The idea that Mercedes even recommends a 10W60 staggers my imaagination.

As for asking George about using xW30, we were just discussing **the use of Delvac for gas-engined cars, something that I'm in favor of, especially for those situations where the use is severe - short trips, lots of idling (such as in traffic), and for cars the receive intermittant use, such as those driven for a few short trips and then garaged or parked for a week or so. I feel that the extra protection afforded against acid and corrosion buildup that is provided by the higher TBN and superior additive packages od "Diesel" oils would make these oils a good choice for gasoline engines. In part, George's reply was "Regarding Delvac for gas engine applications. I agree completely.. Someone said "always send a man to do a boy's job".. I just wish Mobil would package the 1300 10W-30 in quarts.etc. It is \*the\* gas engine oil..."**

While I can't speak for the design of all Diesel truck engines, what has happened over the last few years is that the manufacturers are becoming VERY specific as to the oil and viscosity they want to see used in their engines. Most "suggest" 15W40, and some specifically recommend a particular brand. Detroit Diesel recommends Delvac specifically for some of their engines, and Cummins went so far as to actually have Valvoline produce an oil to their specs. Caterpillar subscribes to a particular theory regarding TBN and certain other specs, and markets Delvac under their brand name. A lot of the reason for 15W40 is to provide a somewhat better ring to cylinder seal, and reduce blowby in that area somewhat. At least that's my understanding.

The reason I'm using a 15W40 in my car is that I read some engine specs and the piston ring clearances seemed a little wide for a lighter weight oil.

--

Shel Belinkoff  
California North Bay Section  
1972 280SE 4.5  
mailto:belinkoff@earthlink.net

Kurzenhauser, Peter (Peter) wrote:

>

> Shel, thanks for the response.

> I agree that, as you put it, you should use an oil that's appropriate  
> for the engine's condition, design, and environment. What I'm trying  
> to emphasize to the members who insist on xW-50 oils, is not that  
> thinner is "always" better, but that for the purposes those of us on  
> this list use oil in our cars, any thicker than xW-30 is  
> counterproductive (with a few exceptions for unusual circumstances,  
> such as a "loose" engine, but not high temps). I wouldn't advocate a  
> xW-10 oil, I might experiment with an xW-20, but then, I haven't seen  
> anything of less than xW-30 on a store shelf in many years, so that  
> is as light an oil as you can buy these days.

>

> As for older cars being designed with larger clearances, I can say  
> from working on '50's Studebakers and GM's that the main and rod  
> bearing clearances are about the same now as then (.0015"-.003"). You  
> would probably have to go back to before WWII to find significantly  
> larger clearances--and then, in manually-fitted poured lead bearing  
> caps. The parameters of the hydrodynamic wedge haven't changed any in  
> the last 50 years that I'm aware of. Are the big diesels in trucks  
> and such designed with larger clearances, say .003-.004"?

>

> Next time you are chatting with your friend George, please ask him if  
> his testing has revealed any lubrication failures associated with  
> thinner oil viscosity, e.g., using 30W in an engine that calls for  
> 40W, and if so, where (cam and followers?)

In this issue:

**Friday Morning with George: Diesel Oil for Gas Engines?**

---

Date: Fri, 30 Apr 1999 09:05:14 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: mbca-L@mbca.org  
Subject: Friday Morning with George: Diesel Oil for Gas Engines?  
Message-ID: <3729D4BA.4DE@earthlink.net>

Having a cup o' Joe with George early this morning, I mentioned something he said in an earlier conversation, and responded. Here's this morning's conversation:

George wrote earlier:

>  
> Mobil's 1300S and Delvac 1 are in the high 12's to 13's on TBN. Delo,  
> Rotella, Pennzoil, etc. are all in the 7's.. This is what I was  
> saying before about the CG-4 qualification; it is almost impossible to  
> pass the ring land cleanliness test with a TBN much over 8.. Mobil  
> (and CAT) have always been proponents of the high TBN and its long  
> term benefits on engine life, especially in severe applications.

And I replied:

Chevron claims that the new Delo 400 ESI 15W40 has a TBN of 12.5, and that sulphated ash is 1.45%. They are using a Group 2 base stock for this oil. These numbers seem roughly in line with Delvac 1300S, although the figures I've seen for Delvac 1300S show a very slightly lower TBN and ash percentage. From our earlier conversations - going back to 1997 - it seems that you felt the Delo 400 with Group 2 stock was a good quality lubricant. What do you know about this version of Delo (Extended Service Interval)? From the numbers it appears to me that it's pretty darn close to Delvac 1300S, and that either could be considered a "top tier" lubricant.

The figures I've seen for Rotella and some other similar oils confirm your figures for their lower TBN. What are your thoughts on Delo 400 Synthetic in 0W30 and 5W40?

Finally, I like Delvac and Delo for certain gas engine applications. It seems to me that they may afford extra protection in severe operations, like short trips, driving in heavy traffic, and infrequent engine use where, especially after a short or low speed trip, the engine sits unused for a while. My thought is that the higher TBN and perhaps better additive package, is beneficial, allowing for better protection from acids and corrosion.

George then said:

Thanks for the update on the new Chevron Delo.. You have more information on the reformulation than I have had available. Being in the east, Chevron is still working through old stocks and even product

data sheets on the new formulation are difficult to get at this time. Chevron oils blended east of the Rockies have always been solvent refined base stocks; actually contracted out with various producers as Chevron does not have an east coast refinery. Yes, you are correct the new formulation is right with where 1300S has been in terms of ad pack. Quite an aggressive move on Chevron's part but they have made the jump.. It could be a killer product. The complete package is there.. However, I would not want to be one of the first on the block as this IS a totally new formulation, completely, including base stock.. I personally would want to see how the new formulation performs in the real world. Chevron is going to begin a gazillion dollar kickoff campaign once the oil is available everywhere in the U.S. and old stocks are depleted.

Regarding Chevron's synthetic 0W30 and 5W-40. I do not know anything about the performance of these oils as they have limited availability east of the Rockies.

Regarding Delvac for gas engine applications. I agree completely.. Someone said "always send a man to do a boy's job".. I just wish Mobil would package the 1300 10W-30 in quarts.etc. It is \*the\* gas engine oil...

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Shel Belinkoff  
California North Bay Section

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mbca-L

Sat, 1 May 1999

Volume 1 : Number 2655

In this issue:

Best diesel oil  
Re: vi improvers & range

---

Date: Fri, 30 Apr 1999 20:28:24 -0700  
From: Wolfgang Henke <wolfgang@whnet.com>  
To: mbca-L@mbca.org  
Subject: Best diesel oil  
Message-ID: <199905010328.AA13725@waltz.rahul.net>

Please excuse that I'm not a diesel oil expert. Just cruised the net some and made some discoveries.

The best diesel oil seems to be Amsoil Series 3000 Heavy Duty Diesel oil. It comes in a 5W-30 synthetic formulation with a TBN of 12.0.

The Mobil Delvac 1 only reaches a 11.0 TBN and is thus inferior.

The Mobil Delvac 1300 comes in two viscosities, 10W-30 and 15W-40 and both have a TBN of 12. But their pour point is poor and the diesel may have difficulty starting in a Midwest winter. So, for

the ultimate diesel oil, stick with the Amsoil Series 3000 HDD.

For our gasoline owners Amsoil has formulated another oil, the Series 2000 Synthetic 0W-30 oil with a TBN of 11.4, still better than Mobil Delvac 1.

The news for Mobil 1 users is a bit disheartening. Mobil 1 is being discontinued and Mobil Corp is using you as beta testers for the new TriSynth formulation. From the MOBIL FAQ:

"Q: Will the consumer lose anything from the reformulation?"

"A: No."

Whom are they fooling? The consumer is losing the Mobil 1 brand. You will have to change to and beta test the new TriSynth reformulation. Or switch to another brand which won't gamble with your engine.

As Shel says: "Use a man for a boys work!"

Wolfgang Henke  
Palo Alto, CA

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Date: Fri, 30 Apr 1999 22:36:25 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: william I brandt <wlb@jps.net>  
Cc: MBCA LIST <mbca-L@mbca.org>  
Subject: Re: vi improvers & range  
Message-ID: <372A92D9.4837@earthlink.net>

Bill,

Not all oils that have a wide viscosity range use a lot of viscosity modifiers. A lot depends on the base stock. Some synthetic base stocks can handle a wide range with little or no modifiers. Also, there are various modifiers, some of which are more shear stable than others.

So, not all wide-viscosity oils are created equal, and not all will break down or cause problems. However, I do believe that Pennzoil is one of those oils that is produced more with the bottom line in mind than the highest quality as a goal.

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Shel Belinkoff  
California North Bay Section

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mbca-L

Sat, 1 May 1999

Volume 1 : Number 2656

In this issue:

Re: **Amsoil "The First in Synthetics"**

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Date: Sat, 01 May 1999 07:55:32 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: mbca-L@mbca.org, Wolfgang Henke <wolfgang@whnet.com>  
Subject: Re: Amsoil "The First in Synthetics"  
Message-ID: <372B15E4.7E6C@earthlink.net>

Wolfgang Henke wrote:

>  
> Amsoil claims to be "The First in Synthetics" since they were the  
> first to introduced an API approved synthetic in 1972. They are  
> based in Superior, Wisconsin.  
>  
> Recently they brought out the new Series 3000 Heavy Duty Diesel Oil  
> available in 5W-30. They claim it provides a thicker film at higher  
> temperature than conventional SAE 40 oils and has a TBN of 12.0 and  
> that it's the best so one wonders how it compares to Mobil Delvac 1300  
> and Mobil Delvac 1? They also say it will not void new vehicle  
> warranties and should be used in conjunction with Amsoil oil and  
> dual stage air filters.

Wolfgang,

It seems that you're searching for the Holy Grail of Lubrication <g>. Amsoil is a good product, but the 5W30 (which has been out for a couple of years or so) oil you're excited about is VERY expensive, and I'm not convinced it's any better than Delvac or even Amsoil's own 15W40 Diesel oil. I was an Amsoil dealer for a while, which allowed me a substantial discount of their products, and I found that, even with the discount, the 5W30 seemed way over priced - and I'm not one to skimp on cost should I feel a product or service is worth it.

The difference between a TBN of 12 and a TBN of 11 is negligible. In fact, if one reads the product data sheets carefully, they will tell you that the specs are only an "average." Some numbers may be higher or lower when sampled at different times, so on one day a given batch of Amsoil may show a higher TBN than a batch of Delvac, and on another a batch of Delvac may show a higher TBN (this is true when the figures are close - if there were a 3 point spread between oils, that would not be the case).

Other factors to consider are the quality of the base stock and additive package - not just the numbers. IOW, the whole package must be evaluated in order to determine the quality of a lubricant and its suitability to purpose.

--

Shel Belinkoff  
California North Bay Section

Re: Oil letters and numbers

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Date: Mon, 03 May 1999 12:48:13 -0600  
From: Alan Mencin <alanmencin@prolynx.com>  
To: mbca-L@mbca.org  
Subject: Re: Oil letters and numbers  
Message-ID: <372DEF6D.59E5BE6E@prolynx.com>

The SAE numbers are a classification for the viscosity only. For single weights, a number is an indication of the viscosity at 210 degrees F. Viscosity numbers with a W appended to them are an indication of the viscosity at 0 degrees F. Multi-vis oils are speced at both temperatures. That is 15W40 has a viscosity equivalent to a 15W oil at 0 degrees F, and a viscosity equivalent to a 40 weight oil at 210 degrees F. I hope this helps answer your question.

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Alan J. Mencin  
Colorado, Mile High Section, MBCA

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mbca-L                      Mon, 3 May 1999                      Volume 1 : Number 2674

In this issue:

RE:Re: **To synthetic or not synthetic**

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Date: Mon, 3 May 1999 12:15:35 -0700  
From: John Anderson <janderso@mail.fmi.fujitsu.com>  
To: "mbca-L@mbca.org" <mbca-L@mbca.org>  
Subject: RE:Re: To synthetic or not synthetic  
Message-ID: <41D0FE550878D211BD1D00805F153E5C13A93B@mail.fmi.fujitsu.com>

>With all of the discussion on oils lately, I have a question about my '87  
>300D with around 183,000 miles. As far as I know, the previous owner never  
>used synthetic oil and it doesn't use more than 1/2 quart between changes.  
>Is it a good idea to change at this point? Also, should I look for it to  
>begin using oil and if it does, would it hurt to revert back to dino oil?

I also own an 87 300D with 240,000 miles on it. It uses virtually no oil.

I

have used Amsoil synthetics after breaking in the car with dyno oil for  
about  
30,000 miles. I change the oil every 10,000 miles and usually am down about  
1

quart. My only caution for you is that if you have a lot of sludge in the  
engine (which you probably do) the synthetic will gradually clean out the  
sludge.

If your sludge is preventing any oil leaks, you run the risk of new leaks  
occurring.

In this issue:

Re: **To synthetic or not synthetic**

-----  
Date: Mon, 03 May 1999 19:30:28 -0400  
From: Marshall Booth <mbooth+@pitt.edu>  
To: mbca-L@mbca.org  
Subject: Re: To synthetic or not synthetic  
Message-ID: <372E3194.A678562@pitt.edu>

Tim & Michael, My experience is JUST like Michaels's. All of my cars were changed over to synthetic at between 100 and 150kmi and my experience parallels Michael's. Several of the cars had oil leaks. They got worse (or at least go no better). When I fixed the leaks, the oil now drops about (on average) maybe a 1/4" on the dip stick between 5kmi changes. That's using Mobil 1 15W50 on the 3 higher mileage and Delvac 1 5W40 on the two lowest mileage cars. Lots of high speed driving on most of the cars about 1/2 the time. I MAY increase the change interval, but haven't decided on that yet.

Marshall

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August M. Booth, Jr. Ph.D.  
Univ. of Pittsburgh School of Medicine  
"der Dieseling Doktor"

In this issue:

**Oil Filters**  
Re: **Air Filters**

-----  
Date: Tue, 4 May 1999 16:26:46 -0500  
From: "Dave Harrell" <dnharrell@lebanon.total-web.net>  
To: "Mercedes List (E-mail)" <MBCA-L@mbca.org>  
Subject: Oil Filters  
Message-ID: <000801be9674\$d0ff0820\$204b8ad1@dnharrell.lebanon.total-web.net>

I was in AutoZone today buying a spark plug for my son's motorcycle and discovered two things:

- 1) Their Deutsch brand filters are reboxed Mann's. I looked up the oil filter for my '82 300SD and took it out of the box. It said "Made in Germany" on the top and "Mann" on the bottom. Had the rubber gasket and both washers with it. It was \$7 and change which is more than I pay when buying quantities of six on-line, but if someone was in a time crunch, it could be helpful.
- 2) The Delvac 1300 15W-40 oil was \$5 and change for a gallon.

Helpful info for those concerned, I hope.

Dave Harrell  
Nashville Section  
'82 300SD

-----  
Date: Tue, 04 May 1999 15:00:25 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: mbca-L@mbca.org, Jonathan Jagolta <jjagolta@erols.com>  
Subject: Re: Air Filters  
Message-ID: <372F6DF9.2BA6@earthlink.net>

> What are your opinions on using a  
> standard paper element vs. something permanent like a K&N filter?

A few years ago we analyzed K&N filters to see how well they protected an engine. We ran them in a very hostile, dusty environment, and the results were very poor. Lots of dirt passed through.

Because of that test we decided to run oil analyses on a variety of cars and SUV's in more "normal" circumstances. With one exception, the oil analyses showed that the K&N filters were doing a good job. In fact, I still use them. However, I won't use them unless I do an oil analysis and see for myself how well the filter is working.

While it is more than likely that the K&N will do a fine job for most people most of the time, I think it's wise, in light of our experiences, to at least check it's functionality in your particular circumstances, especially if you're driving in dusty environments.

Also, as with any aftermarket filter, be sure it fits properly.

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Shel Belinkoff  
California North Bay Section

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mbca-L                      Tue, 4 May 1999                      Volume 1 : Number 2686

In this issue:

**Re: Oil Filters**

-----  
Date: Tue, 04 May 1999 18:35:24 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: "marc\_platt@ivgid.org" <marc\_platt@ivgid.org>  
Cc: mbca-L@mbca.org  
Subject: Re: Oil Filters  
Message-ID: <372FA05C.245B@earthlink.net>

Marc Platt wrote:

>  
> Just wondering if FRAM oil filters are OK for my 1982 300SD. I use  
> them in my Jeep, but of course they cost about a third less for it  
> than for the Mercedes. Let me know. That's the only thing available  
> at Grand Auto/Walmart...

Fram makes some of the lowest quality filters you can buy. If you've been reading the threads here over the last week or so, you'd have picked up on some of the dialog about oil filters - guess you missed it. IAC, get the Fram out of your Jeep and don't put it in your MBZ.

SCB

mbca-L                      Fri, 7 May 1999              Volume 1 : Number 2703

In this issue:

[Ultimate automotive lubricant web page?](#)

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Date: Fri, 7 May 1999 08:44:49 EDT  
From: KathyK4648@aol.com  
To: MBCA-L@mbca.org, pat.n.val@cwix.com  
Subject: Ultimate automotive lubricant web page?  
Message-ID: <8156e156.24643a41@aol.com>

Posted on behalf of a subscriber who's having a temporary problem with software configuration:

I thought fellow members, especially those participating in the recent motor oil discussions, might find the extensive information on this web site interesting. Let me know what you think.

<http://www.lubrizol.com/referencelibrary/>

Patrick Klein  
Lone Star Section

mbca-L                      Fri, 14 May 1999              Volume 1 : Number 2757

In this issue:

[Re: How Much Oil in a Quart?](#)  
[Re: How Much Oil in a Quart?](#)

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Date: Fri, 14 May 1999 19:31:42 -0700  
From: Al Lumas <ajlumas@ix.netcom.com>  
To: mbca-L@mbca.org  
Subject: Re: How Much Oil in a Quart?  
Message-ID: <4.1.19990514192543.009a9a10@popd.ix.netcom.com>

Shel,  
Pardon my ignorance, but what's the meaning of this?

Isn't it common for automotive oils, particularly multigrade oils, to contain various additives? What's the surprise? What are the % contents of all the other Diesel oils on the market? Do other diesel oils contain more pure oil to the quart and what difference does it make?

Just curious :-)

Al

MBCA...Milpitas Section

>From: Shel Belinkoff <belinkoff@earthlink.net>

>I just received the MSDS sheet for Valvoline Premium Blue 15W40 Diesel

>oil. I was very surprised to discover that the amount of oil in a quart

>is lower than I thought. Here's the breakdown by weight:

>	Petroleum Lube Oil	74% - 84%
>	Detergent/Dispersant Pkg	9% - 12%
>	Viscosity Index Improver	2.6% - 13%
>	Zinc Compounds	1% - 6%

-----  
Date: Fri, 14 May 1999 20:04:56 -0700

From: Shel Belinkoff <belinkoff@earthlink.net>

To: mbca-L@mbca.org, Al Lumas <ajlumas@ix.netcom.com>

Subject: Re: How Much Oil in a Quart?

Message-ID: <373CE458.2BB0@earthlink.net>

Al asks:

> Isn't it common for automotive oils, particularly multigrade oils, to  
> contain various additives? What's the surprise? What are the  
> % contents of all the other Diesel oils on the market? Do other diesel  
> oils contain more pure oil to the quart and what difference does it  
> make? Just curious :-)

The surprise was that the percentages of additives was greater than I realized. I just thought the information might be of interest to some folks, perhaps as a bit of trivia. Valvoline Premium Blue 2000, their semi-synthetic blend, is only 53% - 63% "oil" by weight. It would be interesting to see what the figures are for other oils and to learn what, if any, benefit there might be to more "oil" in the mix.

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Shel Belinkoff

California North Bay Section

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mbca-L

Sun, 16 May 1999

Volume 1 : Number 2765

In this issue:

[Synthetic oil and sludge](#)

[Re: Synthetic oil and sludge](#)

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Date: Sun, 16 May 1999 09:36:25 -0400

From: Marshall Booth <mbooth+@pitt.edu>

To: MBCA-List <mbca-L@mbca.org>, "[MB]" <mercedes@lister.privatei.com>, "[Diesel]" <diesel@mbz.org>, Mercedes List <mercedes@lists.realtime.net>  
Subject: Synthetic oil and sludge  
Message-ID: <373EC9D9.13DA4D02@pitt.edu>

I have been an outspoken (crazed might better describe it) advocate of synthetic oil in diesels based mostly upon my own experience over the last 3-4 years/140+kmi of use in 5 cars (as well as product information data of dubious objective content, provided by the oil manufacturers/distributors). I have experimented with several commercial blends (Syntec and Torco) several home-mixed blends (mostly Castrol based) as well as full syntetics marketed as Castrol Syntec, Mobil 1 and Mobil Delvec 1. All of my experience suggests that wear is considerably reduced and that cold weather starting and fuel economy is markedly improved with the syntetic products.

Something that was not immediately evident and has become increasingly so, is that all of these combinations are not equivalent in leaving the engine clean! When using coventional oil (Quaker State, Pennzoil, Shell, Valvoline, Castrol and some I am probably forgetting), even with frequent changes, there was always some modest amount of sludge and "varnish" present. The use of Castrol Syntec full synthetic did not noticably change this (I really didn't expect it to). Mobil 1 and Mobil Delvec 1 HAS changed that. By the 2nd oil change, the engines are considerably cleaner!!! The vestiges of gritty sludge in the little nooks and crannies is reduced almost to the vanishing point!

Mobil has been touting this quality for a long time, but I thought it was just advertising hype. I am now becoming a believer! I have no tests to back this up, but I do have eyes and have carefully examined the valve train and cover of 3 engines as well as the oil that has been removed from all 5 engines and what's left inside is considerably cleaner following several oil changes using the Mobil full synthetic products. Recent conversations with mechanics as well as almost forgotten comments from the past suggest that my experience is not unique. I'm eager to hear of anyone elses experience.

Marshall

--

August M. Booth, Jr. Ph.D.  
Univ of Pittsburgh School of Medicine  
mbooth+@pitt.edu  
"der Dieseling Doktor"  
'87 300TD 128Kmi, '87 190D 2.5 170Kmi, '84 190D 2.2 222Kmi,  
'84 190D 2.2 197Kmi, '85 190D 2.0 132Kmi, MBCA, GWSection

-----  
Date: Sun, 16 May 1999 07:39:39 -0700  
From: Shel Belinkoff <belinkoff@earthlink.net>  
To: mbooth+@pitt.edu, mbca-L@mbca.org  
Cc: "[MB]" <mercedes@lister.privatei.com>, "[Diesel]" <diesel@mbz.org>, Mercedes List <mercedes@lists.realtime.net>  
Subject: Re: Synthetic oil and sludge

Message-ID: <373ED8AB.4AB1@earthlink.net>

Marshall,

I've been using synthetic oil since 1984. At that time we had two Mazdas which were used in EXTREME service - 30 stops and starts per day, short trips, lots of congested traffic. Both cars ran Red Line their entire lives (about 200,00 miles each), and we were astounded at how clean they were.

Since that time I've used Amsoil and Mobil products in my various cars. Again, the engines were clean inside, showing no sludge or varnish build-up.

As you may recall, I mentioned that some of the synthetics like Castrol (Pennzoil was another) used a high level of viscosity modifiers. These modifiers break down early and contaminate the engines. The base stocks on these oils are not as good as the stocks used in Mobil1, Red Line, Amsoil, and some others.

One of the assumptions a lot of people make - and I've seen it on many mailing lists over the years - is that if it's "synthetic" it's gotta be good. Some people look at the Product Data Sheet numbers and proclaim that, since oil "A" has numbers similar to oil "B", the results should be similar. However, that is far from the truth. One must not only consider the different types of base stock, and the quality of the stocks, but the additive package and the VMs. Not all additive packages use the same quality ingredients. It's like cooking - you can use fresh, high quality ingredients in your recipes or lower quality, supermarket ingredients. While the ingredients are "the same," the quality difference can be experienced when the food is eaten. For example, one can buy Mozzarella cheese in many supermarkets. However, there are specialty shops that sell fresh Buffalo milk Mozzarella, and once you've experienced that you'll understand the "quality" difference. Yet, from the perspective of the recipe, both are Mozzarella cheese (I enjoy cooking as another hobby <s>)

Also, there are several types of Viscosity Modifiers. Some break down more readily than others, contaminating the oil and causing it to fall out of grade, or thicken, and adding debris to the oil and deposits to the engine.

You're now observing the qualitative differences between oils with similar characteristics. BTW, Pennzoil, in all its iterations, is the oil I hear the most negative comments about from the techs and mechanics who open up and look inside of engines for a living. It's the one most mentioned by name to stay away from. A lot of these guys don't know anything about lubrication technology, but they sure do know about wear, sludge, varnish, and lack of good lubrication that can be seen when you open an engine after many thousands of miles.

--

Shel Belinkoff  
California North Bay Section

In this issue:

[Re: Oil, Dino or Synthetic?](#)

[Re: Oil, Dino or Synthetic? M103 2.6](#)

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Date: Wed, 19 May 1999 09:17:48 -0700  
From: Wolfgang Henke <wolfgang@whnet.com>  
To: mbca-L@mbca.org  
Cc: mbz-archive@whnet.com  
Subject: Re: Oil, Dino or Synthetic?  
Message-ID: <199905191617.AA10392@waltz.rahul.net>

Shel,

> Why not produce a few of your test results?

comparing my results with yours would let an observer believe that I use the superior oil. I will even subtract the background level from your fresh Amsoil 10W-30 oil and not from mine, since I don't know what a fresh oil would show and the previous owner or I have never tested it. My levels are lower even without having to subtract a background!

Both engines use an iron block. For yours I only have a single measurement at 6597 miles, my data is an average of 7 intervals using mostly 6000, two are only 5000 miles. There is no difference in wear rates between the 5000 and 6000 intervals as far as I can tell. You use Amsoil 10W-30 in a 5 liter Ford. I use regular 10W-40 in a '73 450SE for the first 180,000 miles and then Castrol 20W-50 later on as the tolerances increase.

#### WEAR METALS:

For iron you measure 32 ppm minus a 6 ppm background which results in 26 ppm. My average is 18.9 ppm.

For chromium you have 3 ppm and no background versus my 2.2 ppm.

For molybdenum you have 8 ppm and no background versus my 2.9 ppm. Molybdenum indicates ring wear. How can your Ford engine with only 37247 miles have such high ring wear?

For aluminum with 12 ppm minus 2 ppm background you have 10 ppm versus my uncorrected 5.1 ppm average.

For lead you measure 10 ppm with no background versus my 804 ppm. For much of its early life, until about 170,000 miles, my engine used leaded gasoline. The levels dropped by a factor of more than 100 since then but are still elevated compared to other engines which never used leaded gas.

## CONTAMINANTS:

For silicon, a contaminant, you measured 26 ppm minus a 6 ppm background versus my figure of 7.6 ppm including the background. This indicates a K&N air filter, no air filter, a clogged air filter or a leak on the intake system. If this level would show in an IFR aircraft it might be cause for GROUNDING and restrict it to VFR only until the cause is found.

The only reason why I have this database is that the previous owner of the 450SE is a pilot who tracked all his engines and occasionally just had his Mercedes tested as well to compare. The relationship between a pilot and his engines in instrument weather is a very close one, and you try to get as much info about your engine as possible. All tests were done by CTC in Cleveland, Ohio, a well respected lab in the aviation community.

Another comment. You state so often that synthetic stays in grade longer. So far from the results we have in the ML320 Mobil 1 at 11,500 miles had a significant viscosity breakdown. The breakdown was so large that I could not even identify the viscosity used from the test, but had to email the owner. He used Mobil 1 15W-50 which showed only 84.1 cp at 40C. My test lab only measures the 100C viscosity instead of at 40C, which I believe is a better indicator and as far as I can tell all the regular oil samples stayed in grade. The regular oil in the ML was filled in by MBUSA and they did not reveal the viscosity used so in that case I don't know if it stayed in grade. The OEM MBUSA oil was tested to be in the middle of a 30 weight oil.

In summary, any supposed benefit of lower wear rates of a synthetic from this data is highly questionable and in fact there are indications that the reverse may be true.

Wolfgang Henke  
Palo Alto, CA

-----  
Date: Wed, 19 May 1999 09:26:10 -0700  
From: Wolfgang Henke <wolfgang@whnet.com>  
To: mbca-L@mbca.org  
Subject: Re: Oil, Dino or Synthetic? M103 2.6  
Message-ID: <199905191626.AA10878@waltz.rahul.net>

Marshall wrote:

> Wolfgang, You make a very big assumption in using test results as THE  
> criteria for the effectiveness of oil or anything else. They MAY be a  
> good indicator, but tests are NOT the end point. The life of the engine  
> is the only real measure. It can be very difficult to teach physicians  
> in training that they have to view the patient and NOT the tests when  
> making a diagnosis. And the effectiveness of the treatment MAY correlate  
> with the tests, but if the patient is still sick or in pain, perhaps  
> they measured the wrong thing! And even the absence of scientific proof  
> that a treatment is effective - doesn't mean that it isn't! I may only

> mean that we haven't shown that it IS effective or haven't worked long  
> enough or smart enough to show it - yet. You CAN prove that things ARE  
> different and you can prove that you can't find a difference - but you  
> can't prove that there isn't a difference.

Marshall,

maybe this discussion has been going too far already. Let me assure you that I respect your comments and contributions. I'm thinking of dropping out of this thread since my mind is pretty much made up at this point.

You bring up a good point. What should we be testing? Maybe we could use a systems approach, testing the whole system, car, oil and driver. If the driver is happy with the oil he uses in his cars, so be it. Whatever it takes to optimise driver happiness. We can clearly see what type of oil maximises your happiness. :-)

Wolfgang Henke  
Palo Alto, CA

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mbca-general

Fri, 15 Oct 1999

Volume 1 : Number 365

In this issue:

**Re: Synthetic lubricants**

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Date: Fri, 15 Oct 1999 15:19:17 -0400  
From: Marshall Booth <mbooth+@pitt.edu>  
To: mbca-general@mbca.org  
Subject: Re: Synthetic lubricants  
Message-ID: <38077E35.60FAB155@pitt.edu>

Wendell, MB publishes a "Factory Approved Service Products" list, the most current version of which is part number S-0472-98L dated 12/98. It is NOT available online. You must call MB-USA at 1-800-FOR-MERC and ask for it. My copy cost me \$0.15 plus shipping ;-)

MB seems to be instituting a policy of using nothing but Mobil 1 products or their own proprietary product for everything, but there is no evidence for this in S-0472-98L. They do have a sticker inside many new cars that instructs the owner to use Mobil 1 as that's what's installed at the factory. All European delivered cars (both gas and diesel) and most delivered in other parts of the world are filled with Mobil 1 at the factory.

The interaction of synthetic oils with the seals and gaskets in older engines is a function of the additive package in the oil and Mobil has worked on this for years (and seems to have more experience than anyone else) and that is no longer a caution that they display. I have experience changing moderately high mileage over to synthetic (cars with

between 100-150kmi, but none were older than '84 - all were diesels) and will say this. If I had a leak - it usually got worse. If I didn't have a leak - none appeared that couldn't be blamed on something breaking that would have broken/worn out, anyway. This is NOT a guaranty - only my experience of 7 engines.

I see NO advantage to the Redline oils. Many of their other products are FINE, but I feel their oil is overpriced and there are much better values in synthetics available (Mobil 1 is hard to beat).

Dexron III is the current specification for use in that transmission, but I've heard from within the MB-USA organization that only Pennzoil and Chevron should be used - but that's NOT what S-0472-98L says (there are now contradictions that MB-USA has been VERY slow to resolve when similar contradictions arose in the past).

I believe that the Redline synthetic ATF is/was approved (I think this is a GOOD product) - BUT it is not listed on S-0472-98L (and neither is ANY Mobil product even though most of the MBs distributed in the world are filled with Mobil oil). When I was at a LARGE MB only dealer a few months ago they were offloading drums of Mobil oils and lubricants.

And from a friend on another continent:

> Hello Prof.,  
>  
> To confuse the matter further, order part number A 202 584 02 38 at your  
> friendly MB parts supplier and you'll be greeted with a sticker bearing  
> "Mercedes-Benz and AMG recommend Mobil 1"  
>

Marshall

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August M. Booth, Jr. Ph.D.  
Univ. of Pittsburgh School of Medicine  
"der Dieseling Doktor" mbooth+@pitt.edu

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mbca-general

Fri, 5 Nov 1999

Volume 1 : Number 468

In this issue:

**Mobil 1 and Beyond**

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Date: Fri, 5 Nov 1999 17:17:14 -0600  
From: Benjamin.Jarrett@email.moore.com  
To: mbca-general@mbca.org  
Subject: Mobil 1 and Beyond  
Message-ID: <86256820.007F7C7B.00@EMAIL.MOORE.COM>

I hate to continue an old subject but in speaking to several dealers (outside of MB as well), RennTech, a few mechanics, and some news groups,

my understanding is that you really are best off by using petroleum for the first 1000 miles and then converting to synthetic after that. And not much after that. Several car makers like Volkswagen, Audi, BMW, and some Jag dealers use synthetic right from the beginning. To what Mr. Adam R. said, the synthetic oil will free up and release particulates around valves, guides, seals and the such. If your engine is new, no problems. If your engine is not - perhaps an issue if those particulates were keeping anything from leaking. I have personally experienced converting to a synthetic after running petroleum oil for 80,000+ miles to find after 20-30K miles that I begin to burn oil. Be that due to age of engine, or oil conversion cannot be confirmed. However, the above referenced have indicated that if you start your car with petroleum and it's got more than 20K then stick with petroleum for the life of the car. Petroleum's oil technology has come a long way and it's not like the stuff of the 80's. If you start with synthetic then stick with that for the life of the car. Do not interchange oil types. Half and half is fine as they used to sell it a few years back.

Although while most technicians would disagree, personally I would say that a slow 'burn' in process of synthetic to an old engine would be worth the risk to the potential gains of the synthetic.

As far as grade. I have only been impressed with the specs for Mobil 0W 30 or Amsoil 0W-30. Castrol, Pensoil, Valvoline, Quaker, and Havoline I would avoid using.

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Date: Fri, 5 Nov 1999 21:19:36 -0500  
From: "Kina A Kerst" <KINA@prodigy.net>  
To: <mbca-general@mbca.org>  
Subject: Mobile 1Synthetic  
Message-ID: <002401bf27fd\$6027e660\$2e9efcd1@compaq-computer>

Last summer, I was having an "oil" conversation with a friend who runs a = Mercedes in SCCA, as well as in club events, and I mentioned that mine = "eats" oil. When I told him I used Mobile 1 synthetic, his reply was, = "that's why". We never got into the reason behind the "whys", but he = doesn't recommend synthetic at all.=20

Even though synthetic doesn't seem to be encouraged among my cohorts = ...and many of these people have taken their Benz's apart and rebuilt = them...I still use it. And, it's not just because I like the Aussie in = the commercial. It's because my car was raised on it, and it burns = cleaner.

Kina Kerst