

Red Line MTL vs. Red Line D4 ATF: Which to Use

Background

In case you've been living under a rock or you are now driving your first BMW, let's introduce you to Red Line Oil.

Back in the early 1980s, BMW enthusiasts (enthusiasts and serious drivers comprised the bulk of BMW owners back then) had long since digested the notion of worn out second gear synchronizer around 60,000 miles and the need for a gearbox rebuild. Same for differentials, only at later mileages. And the Borg Warner automatic transmissions had a service life of about 40,000 miles.

Then, real quiet like, some people started to experiment with newfangled synthetic oil oils from a tiny refinery in California that sold their own brew at what were then incredibly high prices. It did not take long before we saw that gearboxes using Red Line MTL (Manual Transmission Lubricant) did not wear out synchronizers, bearings, or anything else. Almost better, you could put MTL in a gearbox that crunched second gear, and in about 500 miles, the crunch would go away. Most people did not believe it until they saw it with their own eyes – I didn't...until I did.

Then we tried Red Line ATF in the Borg Warner slush boxes, and lo and behold, they stopped breaking – sort of (it's still an automatic).

Red Line Oil burst on to the pages of the BMW Car Club of America's Roundel magazine, and it has never left. MTL is mother's milk for manual gearboxes, and it wasn't long before other Red Line lubricants became popular as well – 75W-90 Synthetic Gear Oil for differentials, ATF and later, D4 ATF, motor oils, fuel system additives, CV joint grease, etc. We were hooked.

BMW, being BMW, has disavowed Red Line Oil, and they will regale you with horror warnings. Twenty years of empirical evidence before our very eyes contradicts BMW on these points. Moreover, BMW is rather infamous for mandating use of "Special Lubricant X" or else...insert parade of horrors here. Then, before too long, Special Lubricant X is no longer available, having been replaced by Special Lubricant Y for the next model year cars. Of course, Special Lubricant Y is then approved, magically, for older cars.

Finally, long-term experience with BMW familiarizes one with a somewhat elitist "not made here" syndrome – there is a culture at BMW that says if something did not originate internally, it cannot be good. However, there is a culture among BMW enthusiasts that says we were tired of rebuilding drivetrain components. As is often the case, engineers continue to debate cause and effect long after those of us who actually work on cars learn to trust the empirical evidence before our eyes.

What Red Line Oil Recommends

Red Line Oil (www.redlineoil.com) recommends different products depending on the BMW gearbox in question, which depends a great deal on the model year BMW in question. For older gearboxes, Red Line Oil recommends MTL, for newer gearboxes, they recommend their D4 ATF product. Where is the cutoff? That is the \$64,000 question to which no one has a definitive answer. This is where it gets complicated, but unduly so. Let me explain...

In the old days, Red Line Oil advised that BMW manual gearboxes have either a green label, a red label or no label from the factory. For green label cars, Red Line recommends their MT90 manual transmission lubricant. Red label cars get D4ATF. No label cars get Red Line MTL.

Today, however, BMW gearboxes have no label and Red Line recommends D4 ATF. Also, those labels tended to fall off.

Cold Shifting Concerns

BMW used an ATF product in some manual gearboxes. The reason for this is probably that ATF has nice cold weather shifting qualities, and probably cuts down on customer complaints about "hard shifting when cold." But it is normal to have to shift gently when a gearbox is cold.

ATF is great when you're a synchronizer, because it is a friction enhancer that helps synchronizers do their job. ATF also flows nicely when it is cold. However, when you're a bearing, ATF isn't exactly the ideal lubricant, especially at very high temperatures. In fact, most ATF is a terrible bearing lubricant.

I note that Red Line MTL also has excellent cold weather shifting and flow qualities.

Red Line Oil also espouses the cold weather shifting qualities of their D4 ATF product, a synthetic Dexron IV product. They have admitted to me that their D4 ATF recommendation is also a nod toward BMW's warranty.

Today, BMW uses a product they call MTL-LT-2 in manual gearboxes. This is not an ATF, but a synthetic gear oil. It smells and feels a lot like Red Line MTL but it is not red in color. I think MTL-LT-2 is an excellent lubricant, but I still recommend changing it for break-in at 1,200 miles and every 30,000 miles thereafter.

Another factor, though, is that while any manual gearbox with any lubricant requires a deft hand until it warms up, not all drivers can be trusted to employ that deft hand, so D4 ATF becomes the universal recommendation.

What the Pros Use

Legendary BMW gearbox rebuilder Jim Blanton has been putting these units together for over thirty years, and he will use only Red Line MTL – in fact, he fills each rebuilt gearbox with MTL before shipping it.

Jim Rowe of Metric Mechanic is also a legendary BMW gearbox rebuilder; he uses only Red Line MTL just like Blanton.

Brett Anderson of Koala Motor sport is perhaps one of the best BMW technicians and drive train rebuilders in the U.S., and he uses only Red Line MTL.

As a humble but hardened do-it-yourselfer and car writer, I have used MTL extensively, and have had nothing but extraordinary long-term experience with this fine product. I have also used D4 ATF in manual gearboxes. Performance-wise, I can't tell the difference. But I don't have long-term experience with D4 ATF. My personal feeling is I'd rather use MTL.

Lightweight Flywheels and Gearbox Rattle

Before BMW went to the dual mass flywheel, you could hear a little gear rattle with the shifter in neutral and the clutch pedal out. This is normal vehicle function in Bimmers with single-mass flywheels. BMW went to dual mass flywheels in part to eliminate this noise. Problem is, dual mass flywheels are very heavy and cannot be resurfaced at clutch replacement time. So, some BMW enthusiasts install a single-mass lightweight flywheel, usually an aluminum unit with a replaceable steel friction surface. Gearbox rattle in neutral can return to these cars. If you want to run Red Line MT90, which is slightly heavier than MTL, this gearbox rattle will be reduced in most cases.

My Wife Can't Shift; I Have An Automatic. Can I Change the "Lifetime Fill" to Red Line D4 ATF?

This subject merits its own article. E-mail Tech Talk if you want to read it.

What About the BMW Warranty?

As for the BMW New Vehicle Limited Warranty, in my opinion and experience, it is highly unlikely that you will experience any manual gearbox failure within the warranty period. It is even more unlikely that any such failure would be lubrication-related regardless of which product you use – BMW factory fill, Red Line D4 ATF, or Red Line MTL.

If a dealership can plausibly deny any warranty claim, chances are they will do so; they have a “warranty index” to protect and they are not in the business of selling warranty work. If you do experience an internal manual gearbox failure and the dealer discovers non-factory-fill lubricant, they may deny the claim regardless of what product you used – D4 ATF or MTL. I believe it would then be incumbent upon BMW to prove that the lubricant you used caused the failure in question, which, as a practical matter, would be a very tall order even in the unlikely event it were true.

Anticipating your next question, yes, Red Line D4 ATF looks a lot like BMW’s factory fill ATF, but BMW doesn’t use ATF in manual gearboxes anymore.

Conclusion

Fill your gearbox with whatever you want. If you want to know what I use, it is Red Line MTL, except for those few “green label” cars, in which I do use MT-90 – which I believe is the Getrag 280 in the E28 and E34 M5, and E24 M6.

However, at the same time we have to recognize that cooler ambient temperatures require any manual gearbox to be treated with deference until it warms up. Car manufacturers, technicians, and lubricant manufacturers cannot depend on every driver to do that. Some people treat the shifter like it was a certain body appendage, whereas we should be treating it like it was a Faberge Egg – regardless of temperature. That is why we have manual gearboxes filled with automatic transmission fluid – because it shifts better when cold and we can’t trust all drivers to treat the gearbox right.

Of course, I’m obliged to say that no warranties are given or implied. You’re reading my opinion, and regardless of how well founded it may be or how many professional BMW technicians may agree with me, “Your mileage may vary.”

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