

Zero Friction Cycling



Lubricant On Test : UFO Drip

Cost: \$89.90 Aud from LBS & online

Size – 180ml



Photo :

Manufacturers Description on package;

UFO Drip Chain Coating is a truly revolutionary product. The components in the coating deliver superior efficiency and performance longevity. Making this product comparable to no other product on the market.

- The fastest product for chains
- Protects against premature wear of drivetrain parts

Directions on package

- Clean your chain
- Apply UFO Drip
- Leave overnight
- Enjoy your ride

Extra information from Manufacturer website

UFO Drip Chain Coating is a bottled product for chains that is applied in liquid form, but which hardens to a 100% dry chain coating. It generates less friction than any other chain lube on the market (being out-performed only by the factory-treated UFO Racing Chain).

The genius of UFO Drip Chain Coating is that it combines the convenience of a drip application with the friction-beating performance of a completely dry chain coating. So, not only does UFO Drip test faster than every other chain lubricant, its properties actually rank it in a brand-new category: the liquid-applied but ultimately 100% dry chain coating.

Another benefit of UFO Drip Chain Coating is the fact that the coating closes around the chain in a way that prevents all kinds of contamination your chain is exposed to when riding, from sticking to the chain. Therefore, make sure to clean your chain properly before applying UFO Drip, and it will then remain clean as long as you continuously apply UFO Drip every 200 km as recommended.

UFO Drip Chain Coating is the world's fastest bottled product for chains. After months of development, Chief Technology Officer at CeramicSpeed, Jason Smith, has come up with a formula consisting of 10 components; a blend of waxes, trace oils, and friction modifiers.

The UFO Drip Chain Coating data prove:

- The world's fastest bottled product for chains
- 20% lower friction than the second fastest bottled lubricant in initial pre-ride friction
- 83% lower than the second fastest bottled lubricant in post-ride friction
- 46% decreased drivetrain wear vs wet lubes
- Minimum of 200k between applications

Any extra detailed information re application and usage from website;

- There is a video showing how to clean chain initially by spraying chain with degreaser, attacking with brush, wiping etc. Explains chain only needs to be cleaned prior to first application (so cleaning between applications is not necessary – however note there is now a UFO cleaning product released by CS that is designed to clean wax based chains – so one can only assume this is for between application cleans of UFO / UFO Drip chains prior to re applying UFO D. This would be a great idea for dedicated race chains / keeping chains cleaner of abrasive contamination that may have penetrated and been pressed into chain vs just applying more lubricant over the top).
- There is a video showing how to apply UFO Drip. In brief this shows applying UFO D as a steady stream onto chain whilst back pedalling until chain is saturated (looks like ufo d may start to drip off chain onto floor, and chain is left overnight to set. Explains typically one would apply approximately 8 to 10ml of UFO D per application, giving around 18 to 20 applications per bottle.

Clean Chain Efficiency rating: According to CS testing – outstanding at 3.8w.

- Note that generally ZFC is sceptical of manufacturer test data, in the case of CS I have 100% confidence in their testing and results. The developer is Jason Smith who started Friction Facts and literally wrote the book and invented the machines for chain efficiency testing. I also had tested by a 3rd party (wheel energy) who has outright efficiency test machine. This was a dura ace chain purchased, cleaned, UFO D applied and sent to finland by myself - their result was 4.0w
- **Double note – you will see in other documents concerns re wheel energy testing – the short version is their short run outright efficiency testing seems to be dependable, long run testing has produced some literally impossible results (such as 0w for Rex... hmmm.....). For the purposes of this review – My confidence in CS testing and the similar result in an outright efficiency test at wheel energy lend much credence the performance claim.

Viscosity: Extremely variable depending on temperature from water like to solid.

Test stops when net chain wear reaches 0.5mm+

UFO Drip Main Test Results Data

***Note – due to UFO Drip having a stated lifespan of 200km, this is half the standard interval length for ZFC test protocol. Testing product outside of its stated parameters would yield data of no use – it would bear no value vs if product was used as per manufacturer specifications. It would be akin to taking a Ferarri to a 4wd track and calling it a shit car etc. So re-lube intervals were doubled vs normal test protocol that all other lubricants to date have been subjected.*

Block (each 1000km)	Wear measure (mm)	Inc. On previous measure	% Wear for block (0.5mm=100%)	% Wear rate per 100km	Comments / Observations
0 – Initial check measure	0.097	n/a	n/a	n/a	Shimano chains usually measure 0.1 to 0.15mm from new.
1 – No contamination	0.124	0.027	5.4%	0.54%	This is the lowest recorded wear rate to date for a drip lube, with only Mspeedwax being ahead. It is interesting however that block 3 wear rate (the next clean block) was basically zero, showing that there may have been some initial wear on first application post full ultrasonic clean. First lube on a perfectly cleaned chain will really need full saturation and full work in prior to leaving to set.
2 – Dry contamination	0.124	0.156	6.3%	0.63%	This is the lowest recorded wear rate for any lubricant tested to date, so its dry contamination resistance and clearance is outstanding. Even though the chain is being re lubed twice as often as other tested lubricants, for all other tested drip lubricants

					to date, as the test intervals are within treatment lifespan, adding more lubricant for previous tested lubricants would in most cases not helped at all and simply made more of a mess due to over application of lubricant. However Mspeedwax would have benefited from a doubling of re lube rate as each re-lube = re wax which is a fully flush clean and re coating all wear surfaces with fresh wax.
3 – No added contamination	0.156	0.0157	0.03%	0.3%	Basically zero wear, again this is the lowest wear rate recorded of any drip lube, and basically a dead heat with Mspeedwax at 0%. Simply with the re lubrication rate used in the test, dry contamination has little penetration, and what does is readily cleared.
4 – Wet contamination	0.157	0.236	15.7%	1.57%	Again the lowest recorded wear rate for any drip lube tested to date, and vs drip lubes by quite some margin, being nearly half the wear rate of its nearest competitor in this block (NFS), and around 1/3 rd the wear rate vs other wax emulsion lubes such as Smoove / Squirt that were 45% plus for this block. Wear rate was nearly double mspeedwax at 8% for this block.
5 – No added contamination	0.236	0.313	15.0%	1.5%	To date of all lubricants tested only Mspeedwax, Smoove, NFS and now UFO Drip have made it through this block prior to hitting chains 0.5% wear rate limit. It is interesting however that unlike the dry contamination block where wear rate re-set back to basically zero in the next clean block, post wet block UFO Drip has recorded results similar to the other drip lubes in that wear rate did not improve. Water provides the medium to transport contamination deep inside the chain where pressures then press into set lubricant. This can effectively land lock inside the chain whatever contamination has penetrated. Only Mspeedwax has been able to record a decreased wear rate in this block, again reverting back to 0.0%, due to the flush clean nature of immersive waxing.

Extrapolated wear based on blocks 1-5 = 11,792km

Extreme Contamination Block (chain cleaned again prior to test)

Start wear measure	500km measure	1000km or end of test measure & km	% Wear for block (0.5mm=100%)	% wear rate per 100km	Comments / Observations
0.313	n/a	0.481	34%	3.4%	<p>UFO Drip is only the second lubricant tested to make it to the extreme contamination block, and then to also make it through to the end of this block. The wear rate overall for such a brutal test block is very low, however remember compared to Mspeedwax it was being lubricated twice as often. Mspeedwax's result in this block would have been vastly improved if the re wax intervals were doubled as each re-wax would have re-set contamination levels in chain back to near zero. Still, for a drip lube to attain such a result, and to finish the entire main test at a record low 77% of wear allowance is testament to what can be achieved with UFO D, so long as one keeps re lube intervals short, especially in harsh conditions riding. It is worth noting that for many drip lubes doubling the application rate may not help as much - especially for wax emulsion lubes, as one can easily have far too much lubricant build up and one heck of mess. For some lubes over lubricating can make the situation worse, whereas with a product like UFO Drip or Mspeedwax you cannot lube too much nor re wax too often, so simply by keep re -lube / re wax intervals frequent, sans any solvent or cleaning intervention and even in the face of extremely harsh conditions riding – you can attain outstanding drivetrain wear rates, and low wear rates = low friction running.</p>

Single Application Longevity test (Chain Cleaned Prior to test – no added contamination – Cumulative wear checked every 250km) – allowed extra 0.25mm on top of end of block 1-6 wear measure

Start wear measure	% wear 250km	% wear 500km	% wear 750km	% wear 1000k m	% Wear 1250k m	% wear 1500k m	% Wear 1750k m	% Wear 2000k m	Comments
0.481	7.7% (0.520 – 0.039 for block)	14.9% (0.556 and 0.036 or 7.1% for block.	28.9% (0.626 and 0.070 or 14.0% for block.	52.6%% (1.1% and 0.006 for block. Total wear 0.797)	25.1% (5.7% and 0.029 for block. Total wear 0.826)	27.1% (2.0% and 0.10 for block. Total wear 0.836)	27.4% (0.3% and 0.001 for block. Total wear 0.837)	31.7% (4.3% and 0.021 for block. Total wear 0.859)	Overall a pretty amazing result. The first 1000km wear was notably higher than clean block 1. This could be residual contamination still despite very thorough cleaning after main test, as well as chain no longer has any protective coatings. And there may still be some level of initial penetration lag to pin as NFS is very viscous. However as the km went on, despite showing a clear point at which lube is done, the wear rates for 1000 to 2000km were excellent, and showed no signs that it would deteriorate anytime soon. The chain still looked and sounded obviously lubricated even after 2000km, which is 500km more than any other lubricant has been tested too. My bet is the wear rate would have remained similar for at least another 1000km. At least. I simply ran out of time to keep testing as I needed machine for race chain prep.

Test observations and review

Ok hold onto your hats everyone the detail review for UFO Drip needs to cover some very important points. If you are interested in lubricant performance, manufacturer claims around performance, and who / what to trust, then the next paragraphs simply need to be covered. It is likely if you are looking to shell out 90 dollars for a bottle of UFO Drip, ultra low friction performance is a key driver behind this purchasing decision, and so the manufacturer claims re performance and how much faith you can put in these claims is a very important area to investigate – many manufacturers are claiming many things based on fancy testing, and not all testing ducks and claims are lining up in a row.

At the time of writing this review I am in the middle of a bit of a testing battle mess with various manufacturers and test facilities around the world so the review of such an expensive lubricant with such lofty claims comes at a pertinent time. I will summarise this mess as succinctly as I can at the moment for the purposes of this review (there will be a more in depth covering of this topic in a separate investigative document release soon), however alas even trying to be succinct there is just flat out some detail that needs to be covered to ensure understanding of why there are different and competing efficiency claims for the same lubricants being tested in a supposedly a 100% accurate method on a very fancy and expensive test machine. Making it through the next few pages will bring much clarity with regards to the current mess and competing claims, and whom you should bet your hard earned \$ on at this time to rock some ultra low friction on race day.

I also ask please read the following pages objectively. I am quite aware that due to their product pricing Ceramic Speed have certain percentage of the population who now automatically consign CS to an overpriced and over claiming column. Pre conceive at your own learning peril. Open and objective and be led by independent evidence and data, and have the greatest chance of making the best product decisions for your riding. Understanding what is happening in the lubricant testing world and why will help you understand the conclusions and recommendations from ZFC's own separate independent testing.

Quick Testing recap Part 1 – Friction Facts.

Around 2012/ 2013 Jason Smith started Friction Facts to get to the bottom of manufacturer claims vs performance. There were a lot of lubricants all claiming to do some rather wonderful things – but no testing or objective data to back claims.

Jason designed and built an extremely accurate test machine that isolated out area's that may impact efficiency testing – essentially it was a chain ring, a cog pulled back by a weight to simulate tension of 250w load. It looks like a track bike except the top and bottom span of the chain are equally tensioned. At each end is a very expensive torque sensor (circa \$6000usd each). This machine was called a Full Tension Test Machine – (FTT machine). It delivered as it was designed, able to test efficiency losses to 0.01w accuracy.

However Smith noticed that for a lot of lubricants (not all but a significant number), if the test was run for an extended period, at a certain point the lubricants would suddenly shoot up in efficiency losses. When test stopped and chain rested, the efficiency losses returned to same level they were prior to sudden increase.

It was discovered that many lubricants need the “slack” time through the bottom span of a drivetrain the molecules to reset and re align before coming under load again through top span. The FTT machine loaded tension into bottom and top spans of chain in a manner that bicycles do not. Even track bikes that looks the same, only the top span is loaded with tension from pedalling force, there is very low tension in bottom span.

So he build a Full Load Test machine – this is a machine just like a bicycle drive train with a derailleur set up so that the bottom span behaves just like a true bicycle drive train, but this machine runs a very accurate 250w loading for extended runs.

He released a white paper covering the above and so the gold standard testing for chain / lubricant efficiency is to do an initial check of efficiency losses on the extremely accurate FTT machine, put the lubricant / chain through desired test protocol runs on the FLT machine, moving chain back at desired intervals (say after every hour) to the FTT machine to check the efficiency loss.

A few years ago Ceramic Speed brought Jason Smith and his super machines on as an employee of Ceramic Speed. Since that time I have not seen any change to the testing done at Ceramic Speed – testing of competitor lubricants and testing of chains for efficiency losses so they know what chains they wish to offer as a UFO chain follow the same rigorous FTT / FLT testing protocol.

Testing battle 1 – Muc-Off

Before Friction Facts was bought by Ceramic Speed one of the services Jason Smith offered was to assist / build FTT & FLT machines for manufacturers who had the budget and the desire to do so. Muc-off was on such company to employ this service, and with Smith's assistance built a FTT and FLT machine so they could test and develop their own lubricants.

Muc-Off launched Nano chain and then the NTC chain. For the NTC chain launch, their brochure showed testing over 4 hour period, claiming that UFO chains started increasing notably in friction losses after just 18 minutes, and increased by a whopping 10watts over the 4 hours. Numerous other main competitors to Muc-Off such as Squirt also had very high loss increases over just a 4 hour period.

The first intuitive question that comes to mind is – what lubricant is going to possibly increase by 10w over a 4 hour period in clean lab test conditions? That is an incredulous loss increase for such conditions, one would need to be riding chain through a mud pit for any lubricant to exhibit such an increase in such a short time.

The obvious question was – Did Muc-Off simply run the test for 4 hours straight on FTT machine? The increase trend is exactly like what was seen in the early Friction Facts days which led to the FTT / FLT test protocol. Muc-Off have both an FLT and FTT machine.

Ceramic Speed re-created Muc-Off test results by simply running the test on FTT machine only for 4 hours straight. Muc-Off have refused to answer questions with regards to if the testing was run just of the FTT machine – however, the evidence that this is so is rather overwhelming and obvious.

The fact that they have both FLT and FTT machines, and with highly qualified people running the test lab, it is also difficult to believe Muc-Off are unaware as to why they have both an FLT and FTT machine. It is hard to believe that they would be unaware of the negative results that would be produced for lubricants such as UFO / Squirt by and that running the test on FTT machine for 4 hours straight. And remember that NOT ALL lubricants suffer from this issue, if one wishes they could choose a base that is not affected by the lack of slackening time, then test it against lubricants that are affected in a test just on an FTT machine, and voila, your lubricant looks the goods and your competitors look horrendous.

Other questions Muc-Off refused to answer;

- On the initial launch brochure the test data for UFO was split across two days, with the efficiency result for UFO re-setting between day 1 & 2, this was quickly edited out and new brochure put up, however CS capture the initial brochure and screenshots included in open letter response.
- Muc off have their budget c3 dry lube at 2.9w, way under their own very expensive race chains and nano lube. This result defies belief, and defies logic. Why have a massive launch of you new Nano race chain at 4w, when a budget dry lube is 2.9w? This is still current on their NTC brochure on website. It makes no sense. When published test results make no sense, and in light of all other factors raised, obviously there are severe concerns re Muc-Off testing and claims.
- Testing results for Muc-Off Hydrodynamic and Nano in ZFC test were frankly shocking. I would expect a similar wear rate if I ran a plain mineral oil base with iron filings mixed in. No lubricant has become so dirty and gritty so quickly, nor abraded through chains at such a prodigious rate. Muc-off refused to reply / provide input in to questions regarding the test results from ZFC test.

With Muc-off refusing to answer any questions with regards to their test nor Ceramic Speeds re-creation of their test results by using FTT machine only, nor the results obtained in ZFC testing, the only conclusions we can draw at the moment are not very good ones.

What is disappointing from my perspective – aside from what looks to be unconscionable conduct re their own testing – is that many cyclists will never take the time to read articles about all this hoohaa – but simply look at opposing claims from major manufacturers with supposedly accurate testing to back them and not know who to believe.

This starts the path of disenfranchisement with lubricant test data and claims just like we see with aero test data where everyone has THE FASTEST frame in the world, or THE FASTEST wheels - PROVEN in wind tunnel testing etc.

Testing battle 2 – Wheel energy labs & Rex Lube

This is just kicking off as I do this review, where Rex Lube have released their new black diamond lube with some rather interesting figures indeed. Aside from figures jumping up and down all over the place, I have obtained pics of wheel energys test machines and there is some type of tensioner for the bottom span, and ask and ask and ask I have, however wheel energy are not advising re what tension is on bottom span.

Again for lubricants such as UFO / MSW etc there is a sudden increase fairly early into testing. It is not as drastic as seen with Muc-Off, so the leading thought is simply the constant tension in bottom span is lower, but still sufficient to play havoc with lubricants test results. However overall – the test results released by Rex – conducted by wheel energy – are all over the place with lubricants efficiency results varying by up to 2w+ from one hour to the next – what is possibly happening in a clean lab test for a lubricant's efficiency loss results to jump up and down like this?

It is difficult at the moment to place much confidence in the test results which is a huge shame as I have also used wheel energy for chain efficiency and lubricant efficiency testing – at no small cost I might add – to help verify products I am testing. They are currently the only independent lab providing an outright efficiency test result service. But the results make it difficult for me to be confident in any decisions I may look to make from the information. It appears for very short outright efficiency tests we may be ok, with a number of short tests the Wheel energy results and Ceramic Speed test results have been very closely matched. However for longer runs, things get interesting indeed, again with some lubricants having a notable increase in efficiency losses (in the order of 3 to 5w) at a distance where during ZFC testing there has been ZERO wear on chain for same test period.

Where is an extra 3 to 5w of efficiency loss coming from within 200 ish km? It certainly isn't from stiction, nor viscous friction – there is only one mechanism where such a loss increase can occur and that is high pressure abrasive friction, and this friction mechanism causes chain wear. That amount of friction increase causes rapid chain wear. So when for same lube and same / longer test intervals ZFC is recording either Zero or near Zero chain wear, we have a concern with regards to the accuracy. Especially so when the efficiency loss trend is very similar as to what has already been proven by Friction Facts around 6 years ago with regards to keeping bottom span of chain under too much tension.

Testing Correlation from ZFC

Zero Friction Cycling Testing uses a completely different methodology, relying on wear rate correlation to determine a lubricants performance. ZFC testing cannot provide an efficiency loss figure, however the machine set up allows for testing over thousands of km's, with clean blocks (no contamination) and contamination blocks where either dry or wet contamination is added. The chains wear rate is tracked throughout, and the change in wear rate enables an assessment of many claims made by manufacturers that are not assessed by other lab tests which are typically very short – ie 5 mins / 4 hours / 13 hours etc. I do not know of a single rider who perfectly flush cleans their chain to reset contamination back to zero after every 4 hours of riding, or even after every 13hours of riding. Typically chain maintenance consists of wiping chain and adding more lube, or some form of spray cleaning / clip on cleaner – with cleaning intervention at intervals much greater than 13 hours.

Hence manufacturer claims of “repels dust, grit and grime” and “cleans as it lubes” etc are extremely important claims that need assessing. ZFC testing is able to do this via tracking wear rates of chain as contamination is added / ceased / added again etc. If a chain wear rate shoots up when contamination is added, it is not doing a great job of “repelling dust and grit”. If chain wear rate remains at same very high rate after ceasing adding contamination and having undergone multiple re lubes, it is not doing a great job of “cleaning as it lubes” etc. So the ZFC test protocol does a very good job of assessing key performance claims that short clean lab tests simply cannot & do not.

Recounting quickly – there are 3 main friction causing mechanisms in a chain. As chains articulate and stop, reticulate back and stop – each time there are 8 separate sliding surfaces to move from static – there are two minor efficiency loss mechanisms involved which are stiction (static friction) and viscous friction. These two friction causing mechanisms do not cause chain wear.

By far the dominant efficiency loss cause in a chain is high pressure abrasive friction between pin & inner plate shoulder bore, as well as inner plate shoulders inside roller. Your chain lubricant is attempting to minimise this friction which is generated by your pedalling load and is scalable to the amount of pedalling load being put through the chain, and it is this load and friction mechanism that is responsible for chain wear as well as by far the greatest % of efficiency losses for a lubricant.

If you have a lubricant that quickly becomes high abrasive by absorbing contamination, your chain will wear much more quickly vs a lubricant that has a high resistance to contamination and remains slippery. The friction losses for the lubricant that becomes abrasive will dramatically increase by multiple watts accordingly.

ZFC wear rate correlation methodology has proven very insightful with regards to whose testing results make sense. For both Muc-Off and Wheel energy testing what we see is for some lubricants a very large increase in friction losses at period where there is still extremely low to zero chain wear. For instance with UFO / MSW – where are multiple watt friction loss increases coming from, if for that test period there is literally ZERO chain wear occurring (the friction loss increases are occurring at very low km's – whereas in ZFC testing for 400km / 11hr + test intervals for lubricants such as MSW / UFO the wear rate is 0.00mm).

It is not a stiction or viscous friction loss increase, and even if somehow they were increases in losses in those two aspects the loss increase would be very very small. For any notable efficiency loss increase this simply MUST come from the dominant loss mechanism of high pressure abrasive friction, and this loss mechanism flat out causes chain wear, and this wear is easily measured.

It is simply not possible for a lubricant to increase in losses by 2, 3, 5 or 10 watts for a 200 to 400km interval, and yet during that same interval record 0.00mm of chain wear.

Most especially in the case with Muc-Off that published a frankly ridiculous 10w efficiency loss increase over a 4 hour period in a clean lab test for UFO, during which time for ZFC testing there is ZERO wear – we can see that ZFC's independent and completely different test methodology aligns with and confirms the White Paper produced by Friction Facts a number of years ago, as well as confirming simple intuitive logic. One is simply not going to remotely see such friction loss increases (even much smaller increases) from the worst lubes available in a 4 hour clean lab test.

How such results make it to publication is to me quite astounding. Even more concerning is that many cyclists will not have sufficient background to question, believe the powerful and flashy marketing – and things get messy.

As best as is possible, ZFC is here to highlight red flags and assist with deciding whom deserves your hard earned \$. If a product tests genuinely outstanding, ZFC will look to stock, and even if cannot stock, will still provide a glowing review and recommend. If it tests very poorly and manufacturer claims look dubious to something worse than dubious, ZFC is passionate about highlighting that too. It is not only your hard earned \$ at risk buying a crap lubricant marketed as the number 1 lubricant, it is watts you have busted your arse training to achieve at risk, and it is your possibly very expensive drive train components at risk.

Summary of current testing battle

Zero Friction Cycling is fiercely independent – ZFC business model is to select the genuine best products based on objective test data. As such ZFC has what we believe to be an extremely robust test protocol to assess many aspects of a lubricant's performance that short clean lab testing does not assess, as well as staying up to date on what lubricant testing / claims are being conducted around the world.

Looking at simple facts, ZFC testing results correlate and confirm the testing methodology introduced by Friction Facts when Friction Facts was also completely independent. To the absolute best of my knowledge, the same testing methodology is now used by Ceramic Speed who purchased Friction Facts + Jason Smith. ZFC testing results correlate with recent efficiency testing results conducted by Ceramic Speed for UFO / UFO drip, as well as raises very large concerns from test results published by Muc-off / and some Wheel energy's test results.

For a further final input on where to bank your low friction chips – I recommend you listen to the approx. 4 minute section from Marginal gains podcast below. If you think that the top brains and teams at world level are going to run with wax & powder chains for all world record attempts, key time trials and grand tour stages etc if said wax and powder lubricants increase by 10w over 4 hours with notable friction increases starting at just 18 minutes, that is simply not a match. Josh Poertner of Marginal Gains / Silca is hired by some of the top teams in the world for world record attempts / key tour stages / world championship races etc for expertise in reducing friction that is generally open or known – such as filling tires with large molecule gas (they do not release what gas it is), epoxying tubulars to rims to reduce losses from hysteresis which are greater in layers of tubular glue etc etc. Over decades of experience and quantified testing – Josh Poertner has amassed a knowledge of key marginal gains to make bikes go as fast as possible for a given power input. Josh nor Silca sell a wax based lubricant, so you can place a fair amount of stock into the following quote from marginal gains podcast;

“Lubricants are a massive massive deal in truly every single mechanical thing in existence, and they are so frequently overlooked”

“How much difference can it really make? The answer is A LOT”

“When we work with someone doing an hour record, a Tour de France time trial, Ironman World Championship, the Olympics, every single one of those riders is using wax chains”

Link to marginal gains podcast here;

<https://pca.st/3TOB#t=2759>

**Note – wax chains does not include products such as Wend Wax. I would refer you to the Wend wax detail review prior to purchasing, and I have had some initial test results for wend factory waxed chains by both Wheel energy and Ceramic speed – and the results were..... Concerning. Loss results straight off the bat were very very high.*

So the questions to ask yourself is;

- Do I believe the information typed above and the information in the podcast link above from Marginal Gains which covers how every World Record attempt, key Time Trial or TDF stage rider they work with the rider is on a wax & powder chain – would riders be put onto a lubricant that gains 10w in 4 hours?
- Why in muc-off's own race chain launch brochure do they have their budget c3 dry lube smashing their own very expensive race chain performance (refer print screens below from NTC launch brochure – page one has NTC race chain performance fairly stable at close to 4w, another page in same launch brochure has c3 dry lube at 2.9w. I have asked Muc-Off re this, no reply.

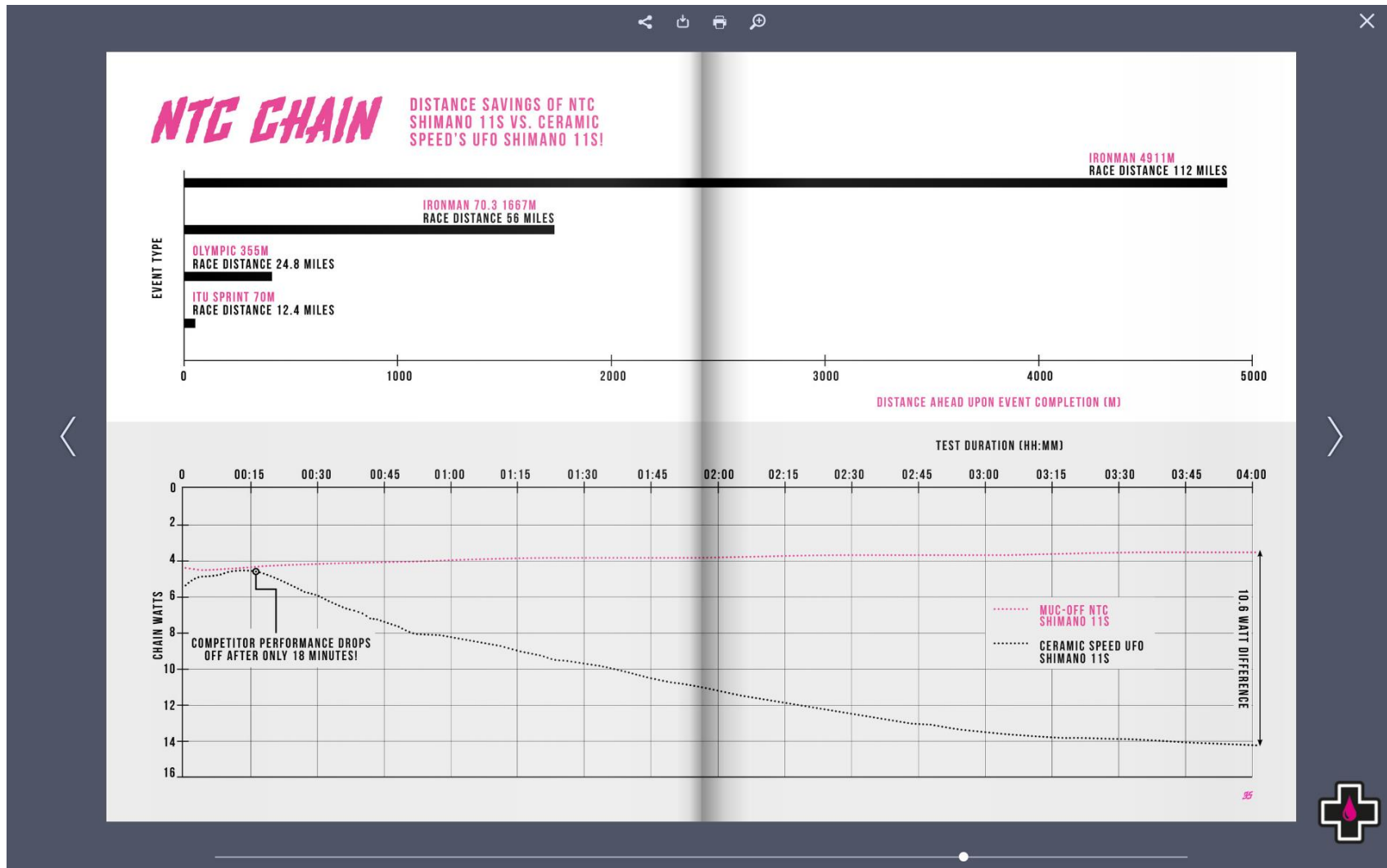
A sub 3w lube would be a phenomenal leap forwards in chain lube tech, and yet here Muc-Off have it included in their NTC race chain launch brochure without even mentioning it once, it is just shown in a graph.

This makes no sense.

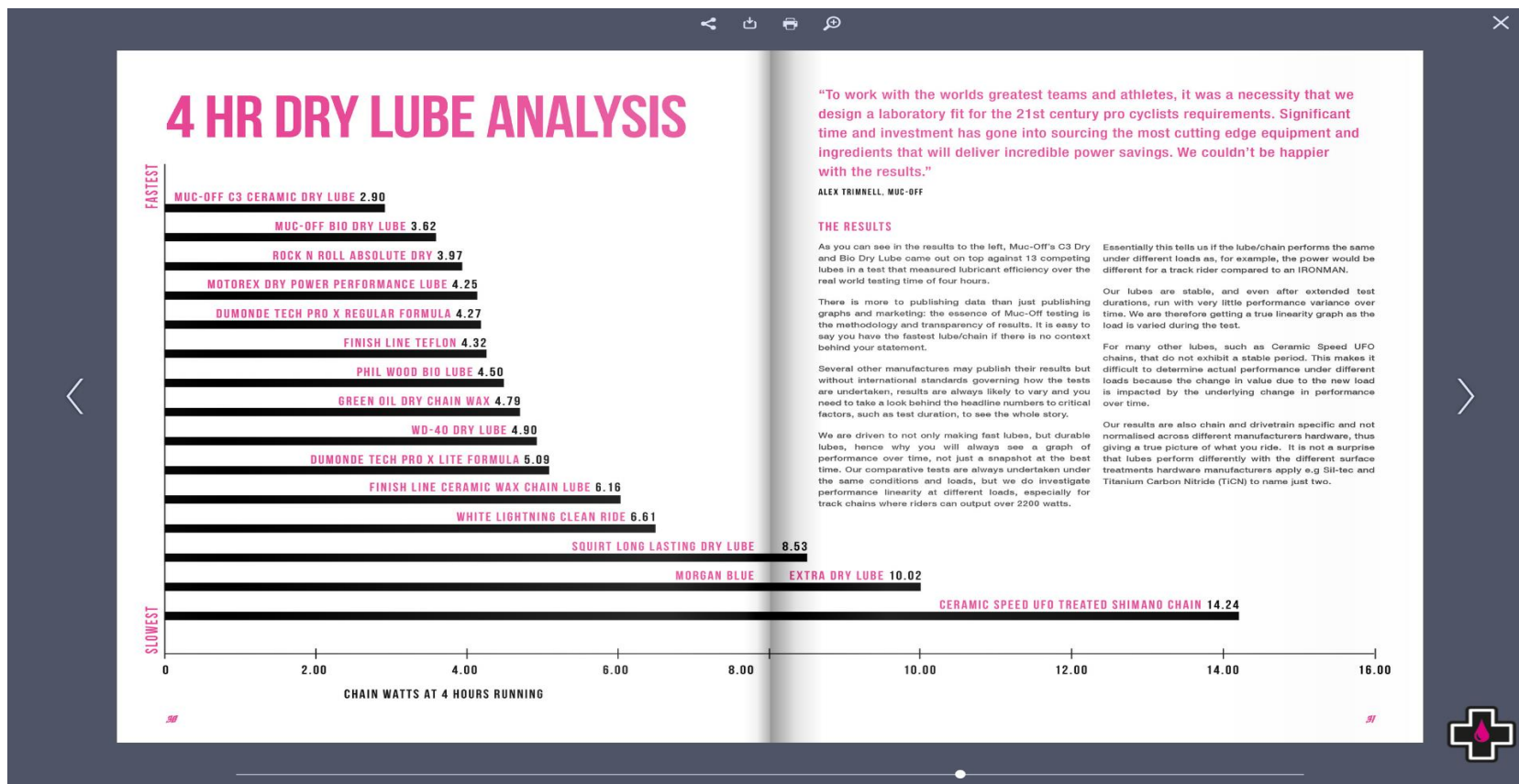
When one is presenting as having the highest level efficiency testing in the world, results that do not make sense on multiple fronts to ZFC raise big (aka gargantuan) red flags.

Refer to following two print screens from NTC brochure;

Here we see their NTC race chain averaging pretty much 4w, and showing UFO with a literally unbelievable 10w loss increase over 4 hours in clean lab.



And here we see another graph in same launch brochure showing their budget c3 dry lube with an astoundingly low 2.9w. Considering the wear rates I have seen with customer's chains and drive trains on this lube, if it actually achieves 2.9w I will eat one my cassettes. Also – if c3 dry lube does achieve 2.9w, why oh why would you include it in a launch brochure marketing a very expensive rae chain that achieves 4w? I'm pretty certain if c3 dry lube attained 2.9w, it would be re labelled and packaged as the world's fastest chain lube, and the price per bottle would be increased by about \$100.



How big is your red flag? **Mine needs its own postcode.**

- So the final question to wrap this testing battle re-cap is based on the above, with whom do you bet your hard earned \$\$ and your low friction purchase hopes? It is rather clear who's testing ZFC feels extremely confident is 100% correct, and who may have either somehow accidentally tested incorrectly and rather unbelievably ran to print with ridiculous figures, or who may have done something even more concerning.

Again, it is your money, your chain, your watts & friction losses, and your drive train wear rates. ZFC works very hard to bring you the best objective & completely unbiased information – what you do with said information is your call. If the information above seems not so objective and a little one sided, that is simply because the information being presented from one side is simply so concerning there is frankly no way to present it objectively without laying out said concerns as they are. If you believe ZFC has not been objective in this testing battle summary as things stand at time of writing this review, feel free to go and purchase an NTC chain and a bottle of Muc off nano, purchase a Ceramic Speed UFO chain and bottle of CS UFO drip. Use both chains and lubes as per manufacture instructions and track km's attained to a particular wear rate (0.5%). Whilst there are so many variables in real world testing that I typically would never endorse or recommend as a way of comparing lubes in real world training, the wear rate difference between Nano and UFO is so gargantuan that unless you ride one chain always indoors on an ergo and the other chain always along a sandy beach, I know what the outcome of this test is going to be.

It is key to remember that chain wear is hardened steel being worn down from abrasive friction. If one lubricant is recording a vastly higher rate of wearing through hardened steel– that just flat out takes a lot of friction. If another lubricant delivers outstanding lifespan through very low wear rate – well, that's a pretty big hint as to how things are sliding along inside the chain.

So – with another one of my famously long pre-ambls over, I hope I have painted a sufficiently clear picture of the testing claims and battles currently raging, and to the absolute best of my knowledge and fiercely independent assessment – where I would be betting my low friction chips and hard earned \$. **With that covered, let us now move onto how UFO drip performed in ZFC's torture test;**

ZFC Overall Performance Ratings for UFO Drip

Race Day Lubricant Road – 10/10

Ceramic Speed had a very narrow product focus brief for UFO Drip, and that was simply to create the fastest chain lubricant in the world that one can drip onto their chain from a bottle. They did not have a specific lifespan per treatment aim, just simply be the fastest one can buy. Testing post final formula led them to stating a 200km lifespan recommendation in normal dry road conditions. This is pretty short when comparing to most other drip lubricants on the market (a number of dry lubricants are lower, ie white lightning clean ride needs about half a bottle added every 60km or so as there is so little actual lubricant per volume as most of the fluid is just carrier). However, this lifespan is sufficient for most road race events and also most cx / gravel events assuming good conditions.

UFO drip has the lowest reported efficiency losses where ZFC actually believes the test results at 3.8w vs Mspeedwax's 4.6w. Mspeedwax has been ZFC's benchmark – remember the 4.6w figure from Friction Facts days was not fully optimised race prep chain, just a cleaned and Mspeedwax treated chain – so that 4.6w figure has been numero Uno for a long time until UFO Drip which should be circa 4w straight out of the bottle.

For fun, whilst as above I have rather large concerns with Wheel energy's test results for longer tests due to possibly same issues re chain tension on bottom span of chain, I did send off a chain I simply cleaned and UFO dripped and the wheel energy test result was 4.01w, so some ducks are lining up in a row there.

In short, if your road race is under 200km or your cx / gravel race under around 4hrs – UFO drip is very likely the fastest lubricant you can pop on your chain for race day, as per marketing claims, and as per product brief. But it does cost some \$\$ per treatment. If you have a dedicated race chain however (and if you race and you don't have a dedicated race chain

you need to ask yourself why on earth are you racing on the same chain you hammer away in training, and then have a dedicated race chain) then used only for racing for many this cost per treatment will not be prohibitive, and deliver simply the lowest friction you can apply to a chain at home.

Setting to an actual solid coating (hence why CS refer to UFO drip as a chain coating not a drip lube), it is also exceptionally clean, it is the only lube in a bottle to match Mspeedwax re cleanliness. A lot of people love beautifully clean drive train – UFO drip delivers magnificently on that front – IF YOU APPLY CORRECTLY – more on that later.

Race Day Lubricant - MTB - CX length races only– 10/10

The treatment lifespan is sufficient to last through CX / MTB xc length races and will deliver exceptionally low friction for such race events, and as mentioned above – like Mspeedwax setting to a true solid coating will deliver the highest level of contamination resistance possible as well as remain as clean as is possible for lubricating an externally exposed component.

Full mudder cx events that are longer in nature such as national level elite round that may be up to an hour may stretch the lifespan of UFO D as the amount of abrasive particles getting inside chain and abrading off the coating is high. To maximise ensuring you have lowest friction possible treatment for as long as possible into the race, it is a very smart idea to have keep your dedicated race chain for the race only, do your warm up and practice laps on training chain. Doing 2 or 3 full very harsh conditions / full mudder sighting laps will already be very hard on your chain – whether using UFO D or any lube you choose. For many lubes the you could expect a multiple watt friction increase by the end of doing your practice laps, not exactly what you want to take into your race where you will be subjecting chain to whole bunch of

extreme punishment. So practice laps on training chain, fresh clean ultra low friction chain popped on between practice and race. Changing chain takes 2 minutes. 2 minutes work to save multiple watts – kinda worth it!

Everyday Lubricant – ?/10

Ok here is where it gets a bit tricky.

We can see from the test that UFO Drip remained exceptionally clean throughout the 6000km main test block, and the main test block throws a huge amount of contamination at the chain. Only lubricants that deliver a truly solid coating of a shedding type wax can deliver such long term cleanliness.

Other wax based drip lubes such as Squirt / Smoove – set to a plastic type semi solid state and are non shedding. Being non shedding means they are much longer lasting per treatment, but it also means that contamination which does penetrate the softer set lubricant is effectively land locked, and the lubricant added tends not to go anywhere. Adding more lubricant does not shift any contamination out of the already pressed in contamination sitting inside existing set lubricant.

As such I tend to mostly recommend lubes like smoove / squirt as a good option if you are planning to go flag to flag in a long harsh conditions enduro / xc marathon event etc. As a daily lube, your drive train will get gunky over time.

This is not the case with UFO Drip. I was very curious as to how it would perform as contamination was added with regards to how it would clear contamination between re lubes. To date no drip lube tested has shown any remote ability to clear

contamination (although they all claim it of course). With Mspeedwax, contamination in the chain was reset back to zero each re lube because each re lube is an immersive re wax, melting off the old wax and re coating the chain anew.

With UFO drip, it is inevitable that after contamination has been added during the intervals that some contamination will have been pressed into the solid lubricant – this is also confirmed by the fact there is a higher wear rate during contamination blocks vs clean blocks – this can only come by contamination penetrating into chain and causing abrasive wear (note that the rate of wear was vastly lower than other drip lubes so the amount of contamination penetration was vastly lower in turn).

What I was very curious about was how would UFO Drip clear this contamination that is now pressed into a set lubricant – something no other drip lube has been able to do. Prior to the test, if I was forced to place a bet – I would have bet that contamination that has penetrated would not be cleared without needing physical cleaning intervention.

I was half right. Interestingly we can see that after the dry contamination block 2 where wear rate increased to 15% for that block vs practically zero for clean block 1, the wear rate returned to near zero for clean block 3. This showed that only a small amount of contamination entered chain, and what did enter was able to be cleared.

Likely this ability is due to a) the relatively high amount of lubricant that is applied each re lube, and b) part of the lubricant appears to be a powerful solvent that is designed to evaporate leaving behind solid coating when dries and sets. When re applying lubricant a lot of grey liquid would be dripping off bottom of the chain, so new lube is getting in, having some solvent effect on existing coating, and flushing out some of the old contaminated coating.

We can see however that post wet contamination block the wear rate change from wet contamination block 4 to clean contamination block 5 was statistically negligible. Why the difference? Contamination block 4 is pretty harsh, and it would appear there is only so much adding 10 to 15 ml of lubricant can do. In dry conditions riding just re lubing re-sets contamination admirably well, post wet rides –as the chain is being hosed by gritty water from the road and water provides the medium to transport a lot of contamination deep inside the chain – just a re lube with any lubricant is going to be insufficient to clear such levels of contamination. The only lubricant to reset wear post wet contamination ride was mspeedwax being that a re lube is an immersive re wax.

However, as you will see from the pictures soon to be shown below, the chain did still remain exceptionally clean looking which is somewhat different to other lubricants (except mspeedwax).

But, back to UFO D as daily lube – the above long segue was to cover off that simply re lubing without solvent flush cleaning intervention, UFO Drip performs the best of any drip lube tested to date.

But here is where we get to some of the fun parts of trying to use UFO Drip as your daily lube.....

- Price – there is no getting around it - \$89.90 (likely plus shipping) for around 15 applications or circa 3,000km is expensive. It is about \$6 to \$7 an application.
 - A large portion of this cost is offset by exceptionally low parts wear, with total drive train running costs per 10,000km coming in competitively low.
 - Some of this cost will also be offset by the exceptional cleanliness negating the time and cleaning product cost to maintain a clean low friction drivetrain

- Lifespan per treatment is low – rated by manufacturer at 200km in normal road conditions requiring frequent application.
- Applying the lubricant can be very easy, or it really can be a bit of an intensive process. If the climate is warm, and wherever you store your UFO D and bicycle is warm (above around 25dg C+) then applying is as easy as drizzling on whilst back pedalling, wiping off excess lube, and leaving over night to set, and you have day in day out very low friction and an outstandingly clean drive train. However;
 - If UFO D is mildly cool – say 20dg, and chain is mildly cool, then you have a little extra work to do. As a minimum you are going to need to heat the lube in a cup of hot TAP water (not boiling water). UFO D's viscosity is highly temperature dependent. Above around 25dg c it is water like viscosity and application is a doddle. Below that it thickens rapidly, and applying when applying in this state UFO D has poor penetration and mostly just sets on the outside. This may have you getting 20km down the road and having a very dry sounding and feeling chain as little to no UFO D has penetrated inside where lubrication is needed.
 - If lube & chain is cooler than around 20dg C, then alas you really need to put some work into warming up your chain as well as the lubricant. If where you store your bike it is say 15dg in winter in an unheated room, or 10dg or less because bicycle is stored in a shed or garage etc, then warming the lubricant only is **not sufficient**. As soon as the warmed and low viscosity lubricant hits cold chain metal it thickens instantly, again leading to very poor penetration and all the lube setting on the outside of the chain.

There is simply no short cutting this if you want to have proper penetration and the awesome low friction UFO Drip delivers. You are going to need to either store your bike somewhere nice and warm in colder temps, or you are going to need to bust out the hairdryer / heat gun and spend no small amount of time heating the chain whilst you have UFO Drip itself heating up in a cup of hot water. If it's quite cold, heating the chain

takes some labour time, no doubt about it. Trying to heat a really cold chain on bike that has really cold cassette and chain rings is tough – the rings and cassette act as heat sinks sucking the heat from chain as you back pedal it through the drive train. Once things get below around 15dg c – I found it much more time effective and application effective to simply pop chain off bike and pop into a medium size aluminium bbq container. This enables you to heat up chain very easily with hair dryer or heat gun. Wearing gloves I would then pull chain over fingers drizzling on UFO D. Took a bit of practice to get the right method and ensure it was working in and then wiping excess – but it was easier than sitting there for 10 minutes with a heat gun trying to heat up a whole bunch of cold metal components.

It is also not uncommon that if UFO D is stored somewhere cool - post previous application some lubricant may solidify in application nozzle. When you go to apply, nothing happens – nozzle clogged. It is an easy fix, just blow hairdryer on nozzle for 10 secs or pour some hot water over nozzle and voila – solidified lubricant will melt back to water like consistency, nozzle is unclogged, apply away – but it catches people out and unclogging by sticking stuff down the nozzle is nowhere near as efficient. It breaks it up a bit, but there are still lots of solid particles – you got to apply and a bit comes out then a chunk blocks nozzle again – shove something down nozzle to clear and same thing happens over and over a few times – that gets old. Heating the nozzle solves the issue quickly and you can then apply hassle free.

In summary – if you live somewhere warm, or you heat your house including where your bike and lube is stored to 25dg c +, then application is a doddle every time. If things get cooler, then you can have a mild to decent amount of work ahead of you each application, and if using as your daily lube, those applications are frequent.

Unfortunately for me as timing would have it, I was testing UFO D through winter, and so each application I needed to heat lubricant and heat the chain. I was applying very frequently because the test machine rips through the kms' so I can tell you it got painful quickly. Had I run the test in summer, I would have saved a heck of a lot of time to conduct this test, but it had to be done when I had a window to get it done.

And don't forget you need at least 8 hours set time after application. For those at home this is typically easy, just apply the night before ride not the morning off ride – but if you are the forgetful type and often find yourself about to jump on bike and then thinking o crap I need to lube chain – then you will need to work on that if choosing UFO D as your daily lube.

Overall due to all of the above, it is hard to recommend UFO Drip as a daily lube except for those who have lots of money and whom live in year round warm climates. It is apparently exceptionally popular in Dubai with a never ending stream of pallet loads of UFO D being shipped in as neither money nor warm temps are a much of a problem for the cycling demographic there. If you live in Canberra or Hobart or during other capital cities outside of summer, store your bike near your main heater, and in summer store your bike in a room not nicely cooled by air conditioning.

I have already had numerous customers attempt to use UFO D as a daily lube but given up, and so the main recommendation that works brilliantly is use mspeedwax daily lube, and use UFO Drip as race chain / race day lube.

UFO D appears to play very well with mspeedwax, just run that UFO D treatment fairly dry and you can re wax without any intervention – however I still would recommend a quick run though of a) boiling water rinse first to melt wax, dry with hairdryer / heat gun / air compressor, quick mineral turps flush clean to solvent clean any lubricant components that are

not wax, dry, finish with methylated spirits rinse to ensure no film left so mspeedwax has access to bond to clean and clear chain metal without trying to fight through a film or membrane before it can bond to chain metal (Hence why still overall I would recommend second dedicated race chain to avoid mixing trying to wax over the top of a different lubricant just in case).

So – that is why for the daily lubricant rating I have put a question mark. Depending on where you live and time / patience if bike / lube sitting somewhere cooler than 25dg c – UFO D can either be an astoundingly awesome daily lube if your pockets are deep enough, or it will soon drive you round the bend a bit heating up chain and lube for every very frequent application, and don't forget unclog the nozzle.

One final very important point to cover in wrapping up the everyday lube comparison. In reality the main lubricant that UFO Drip may be compared to and that customers weigh up against is Mspeedwax, and there are a couple of very pertinent points that need to be quickly covered for this comparison.

- UFO drip has recorded the lowest total wear rate for main test, being one of only two lubricants to complete the full 6000km main test at the time of writing. At the end of the 6000km main test, Mspeedwax was at 98% of total wear allowance, UFO drip was at 77%. However, UFO Drip was re-applied at double the rate vs Mspeedwax. Unlike many drip lubes where doubling the application rate for this test would not improve test results and just result in more mess, re waxing Mspeedwax at double the application rate would have greatly reduced the recorded wear rate for the main test. With Mspeedwax - every re-wax in an immersive application that resets contamination back to near zero each time, and for "X" kms after each re wax as all components of chain are sliding on solid super slippery coating leaving chain metal out of it, there is a period of zero wear. I have conducted a field test of re-waxing every 100km and after 3000km of testing chain wear was still at 0.00. So in summary, whilst in this data sheet it shows

UFO Drip with a lower total wear rate, Mspeedwax would likely achieve an even lower total wear rate if re-wax rate was doubled to be in line with the application rate of UFO drip.

- Immersive waxing on the surface appears to many to be time intensive, but overall for almost all riders immersive waxing saves on drivetrain maintenance time. It takes very little effort to pop a chain off and pop onto a pot of wax and turn switch from off to low setting. Then sometime later when wax has melted swish around and hang to set. Then prior to next ride break wax link bond and pop chain back on bike. Total actual labour time is typically 4 to 5mins. This is longer than dripping on a lube and wiping chain, but for this few mins extra time at front end, you have zero cleaning time and cleaning product cost at back end. So versus all other drip lubes on the market mspeedwax saves time, a lot of money, and you have an always clean drive train . Versus UFO Drip, the comparison will be highly dependant on what temperature your bottle of UFO Drip and bicycle chain are typically at. If you do not need to heat lubricant and chain, then applying UFO Drip is as fast and easy as the easiest of drip lubes, and like Mspeedwax you will have an always beautifully clean drive train needing no cleaning maintenance other than wiping excess on application – just take note you need to re lube frequently. However if you need to heat UFO D and chain each application – this is definitely more labour intensive than immersive waxing, and again you need to do very frequently making UFO Drip as a daily lube if this is your situation a lubricant that is a bit of hard work. You still get some time back on the other end with no cleaning time & cost, but yep – heating the chain and UFO Drip every 200km for many turns out to be a bit of challenge.

Harsh Conditions Lubricant – 10/10 – if the event is short.

As long as the event is within the treatment lifespan of UFO Drip you will have an ultra low friction chain and one that like mspeedwax will resist friction increases from the crap conditions to highest level possible being a true solid coating as well as being a shedding type coating. Shedding type waxes / coatings are a double edged sword – the shedding helps keep chain clean and low friction as contamination is typically lost along with the lubricant being shed, however this comes at a cost re lifespan – the harsher the conditions the shorter the treatment lifespan. Non shedding type lubricants such as smooove / squirt are a double edged sword in the other direction – contamination that is pressed in goes nowhere – it is landlocked in a plastic type state lubricant so friction will rise continuously from km zero – however treatment lifespan is much longer.

UFO Drip is a bit like racing qualifying tires – astounding performance but for a specific short period only.

Single Application for Long event – ?/10

It is going to depend what you call long and what the conditions are like. Will it make it through something like 3 peaks? Probably if the conditions are fine. It is officially rated to 200km, but getting to 235 it can stretch that far, and if friction has started to increase over the last 35km, it is still only probably increasing to around where normal good drip lubes sit on a good day post good maintenance, and for the preceding 200km you would have been running well under other drip lube performance so as an average you are on top by a good margin. If it's a wet 3 peaks, forget it, you might have 6 hours of riding with more or less no lubrication left, and so a longer lasting lubricant such as Nix Frix Shun would be my choice for a long wet road ride (note for many wax emulsion lubricants such as squirt – the carrier is water. After application the water evaporates leaving the slack wax behind. Wet rides the slack wax will over time be re softened by water and can be washed off. Nix Frix Shun proved extremely long lasting and resistant to water, and is a very low friction drip lube for applications that may exceed UFO Drip or mspeedwax treatment lifespan).

Cost to lubricate (based on blocks 1-5)

The large 180ml bottles do not actually last that long as you should be generously drizzling on every application, using circa 10 to 15ml. On average expect 15 applications per bottle. I used 2.5 bottles to complete the first 5000km of main test.

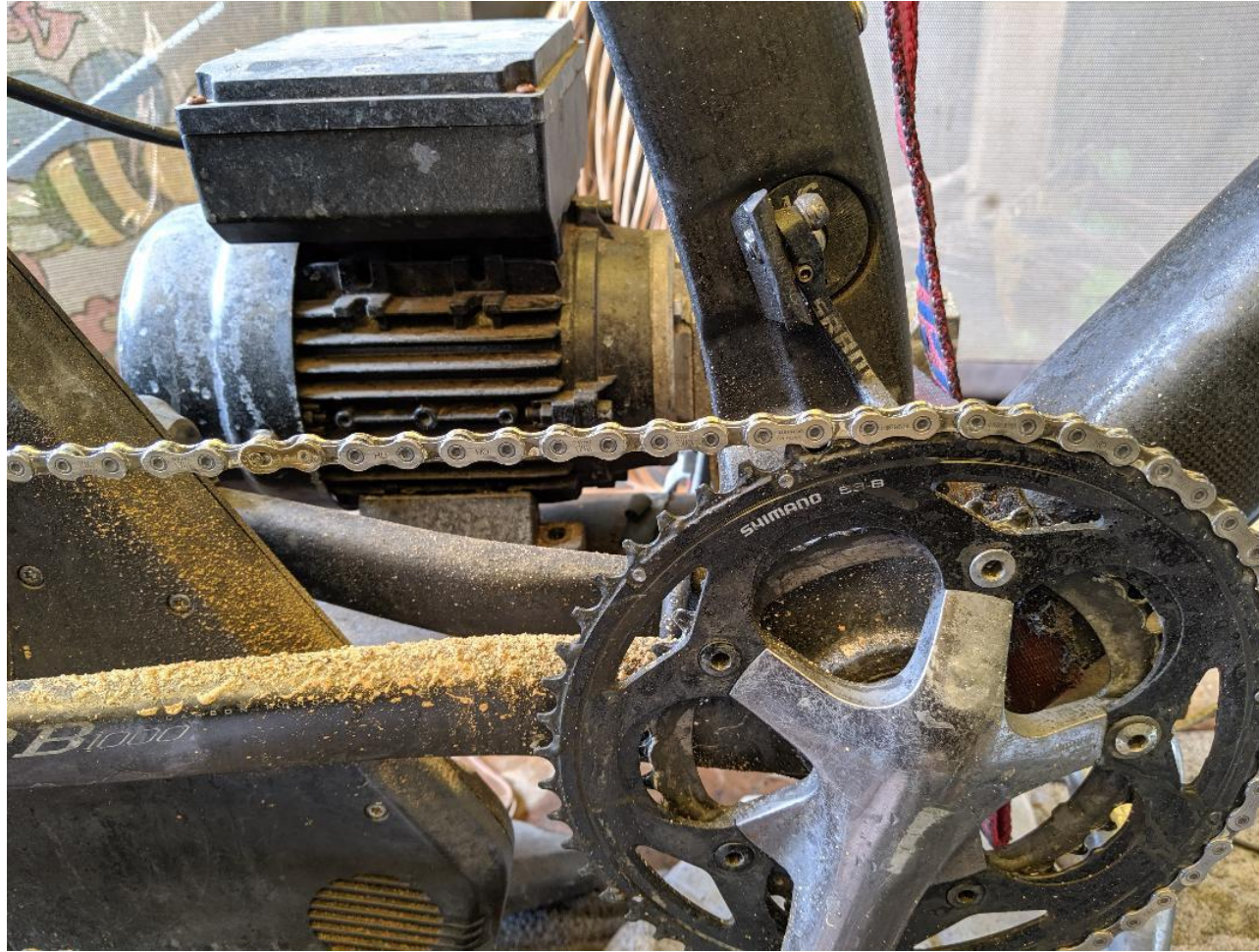
Extrapolated drive train running costs table per 10,000km based on blocks 1-5.

(Cost per km of lubricant & assume 2 x chains @0.5mm wear per cassette & 6 x chains per set of chain rings. Australian online + Lbs store RRP prices of ultegra cassettes and chain rings) .

Lubricant cost per 10,00km – 2.5 bottles @ 89.90 per bottle.	Chains per 10,000km (\$40 per chain) – 42.4% chain wear by 5000km = 84.8% by 10,000km. \$40 x 0.848	Number of cassettes worn per 10,000km & cost (\$90 per cassette)- at two chains per cassette, 11,792km per chain = 23,584km per cassette. (10,000/23,584)*90	Chain rings cost per 10,000km (\$195 set). 6 chains per rings set = 6 x 11,792 = 71,832km. (10,000/71,832)*195	Total Drive train running cost per 10,000km
\$224.75	\$33.92	\$38.16	\$27.14	\$323.97

*At the time of this review, despite the very high cost of lubricant, due to the exceptionally low parts wear when ensure you do not run a treatment beyond its lifespan, the total cost to run per 10,000km is actually lower than expected – it is currently ranked 5th out of 11 lubricants tested, with Mspeedwax in first place at \$207.25 cost per 10,000km, and Muc-Off Nano in last place at \$1,124 per 10,000km due to combination of very expensive lubricant combined with phenomenal parts wear rates.

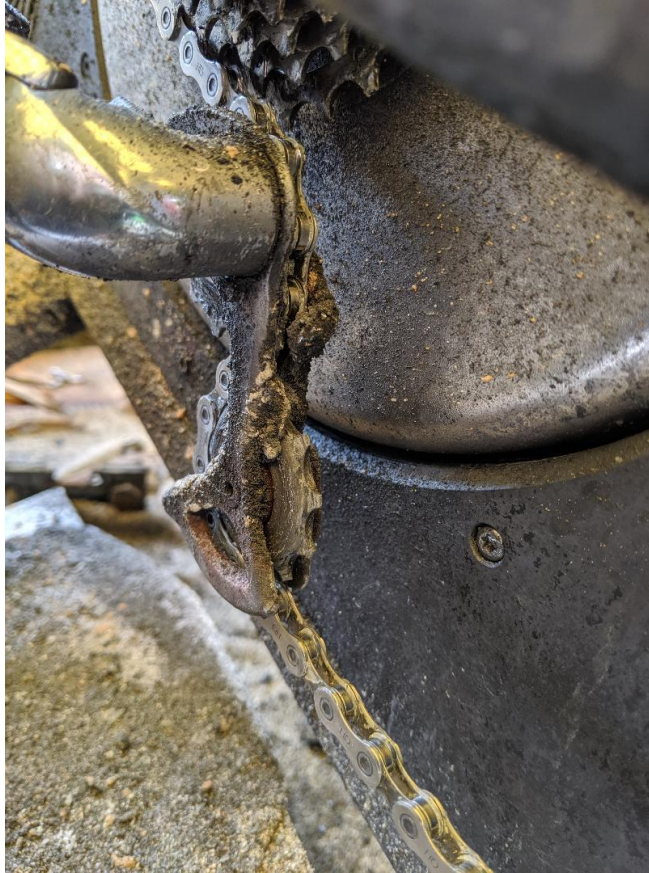
Pictures from test



End of main test – 6000km – post extreme contamination block. Note the amount of contamination on chain stay, yet not so much on chain and chain ring.



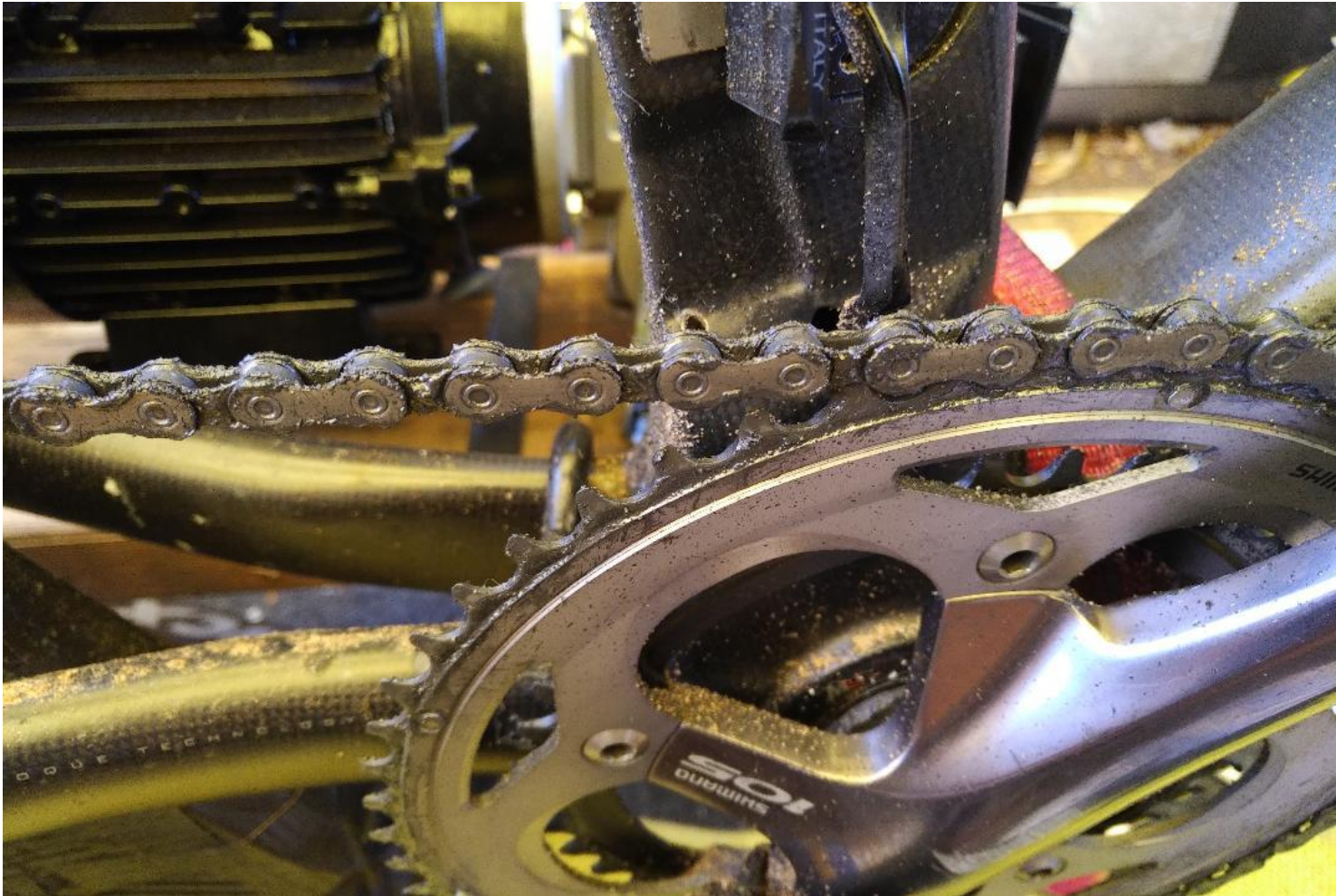
End of main test – 6000km. You can see the chain itself is still very clean for 6000km with zero cleaning intervention and a lot of contamination. The messiest part with these tests is always the trainer flywheel as the excess lubricant when flung off sticks to flywheel that gets hot and melts it on there. We can see a mild build up of UFO D on cassette cogs, but again, this is by now 3 bottles worth of application and no cleaning and lot of added contamination – that excess was brushed off in about 60 seconds with a wire brush post main test – it was an extremely easy clean. Other wax based drip lubes are a tough clean (especially wend- that is really tough. Mspeedwax any build up over time also just brushes off with a wire brush in a jiffy – no solvents needed).



More build up of UFO D on jockey wheels vs other area's. The larger amount of ufo Drip that is applied when drizzling on led to a bit more excess build up here – in real life application you would simply wipe excess off with cloth after application, but for main test no cleaning of components is allowed to ensure like for like comparisons of lubricants with zero maintenance.

Some Pics comparing UFO DRIP to some high profile Competitors;

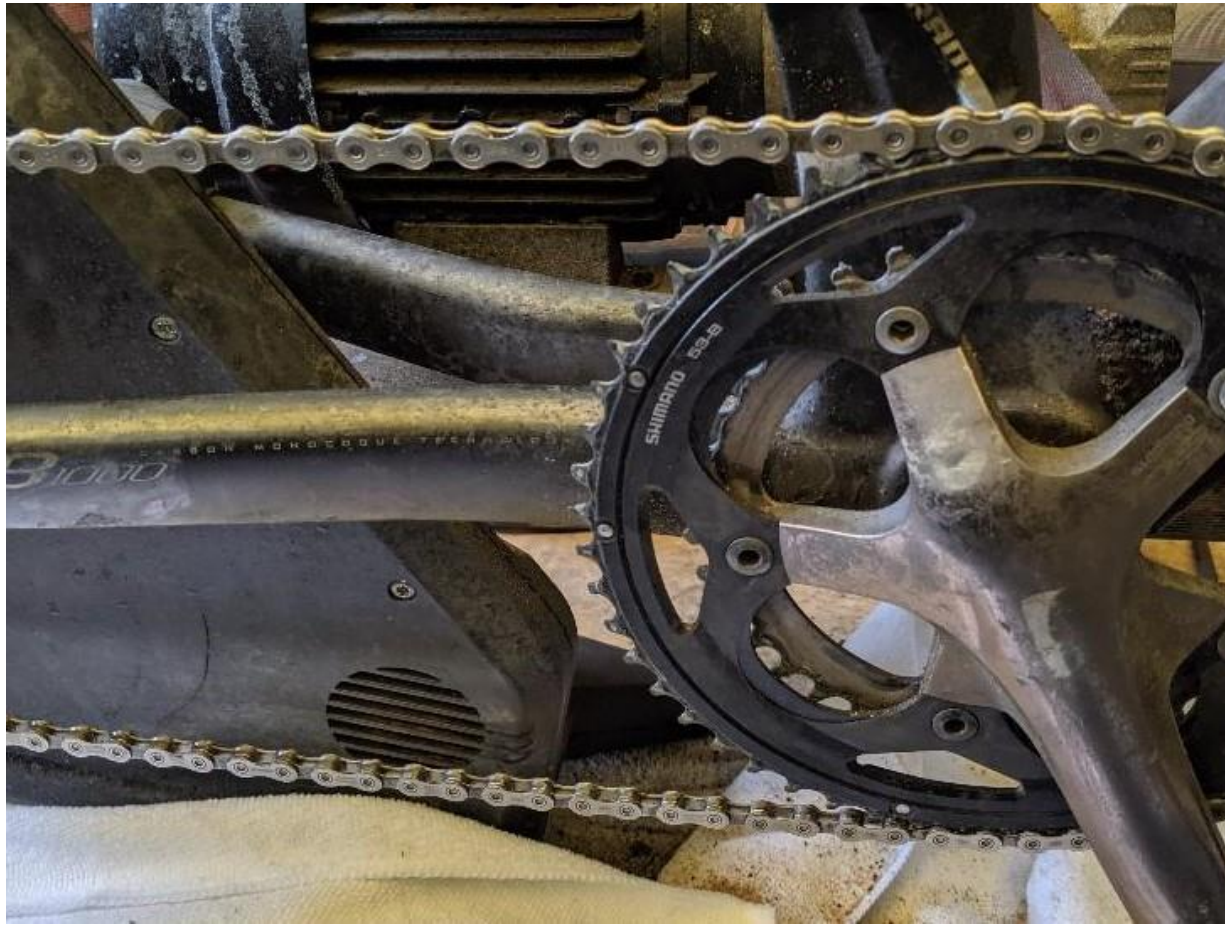
Muc-Off Nano Lube after only 2000km (end of main test for that lube as had already ripped way past wear chain wear allowance)



Wend Wax after 3000km (end of main test for wend as had surpassed wear allowance)



UFO Drip after 2000km. Only 11.7% of wear allowance used at this point in test. At same mark Wend had used 69.4% of allowable wear, Muc-Off Nano 145.4%. This proves UFD is not only clean on the outside, but clean on the inside where it counts. A clean chain is a fast chain. A chain whose steel components are being abraded through at a prodigious rate is obviously a very high friction & slow chain.



Best internet reviews for UFO Drip here;

<https://road.cc/content/tech-news/228957-ceramicspeeds-ufo-drip-chain-coating-%E2%80%9Cgenerates-less-friction-any-other>

<https://www.triradar.com/gear/ceramicspeed-ben-price/>

Lubrication is simply a massive deal for your chain and drivetrain friction and lifespan. If you wish to learn more so as to be able to make the best decisions for your own drive train running & maintenance from being a professional athlete to intrepid commuter – click on the below link for key learnings from lubricant testing round 1.

Remember Zero Friction Cycling is completely independent. We do not select lubricants based on brand name and marketing claims and then set about reviewing them in a positive way. A huge amount of time, resources and money is devoted to testing projects so that ZFC knows what to stock, and what to not. ZFC does not care who makes a brilliant product – if it tests amazingly and matches marketing claims, ZFC will be on the blower to stock in a New York minute. To date after years of work, you can see ZFC product selection is still quite..... select 😊 Few products make the cut, those that do are exceptionally good products. Stocking only the best based on tangible data vs a whole bunch of “meh” or worse performing products based on marketing hyperbole = always super happy customers and 100% customer retention rates.

So ZFC business model is product performance led based on controlled testing and data. It is not brand name led. It is not marketing claims led. It is not based on pretty on trend coloured products hammering Instagram.

Many cyclists try one lube after another after another trying to find something they are truly happy with.

That search ends at ZFC.