

# Zero Friction Cycling

*Worlds most exhaustive independent bicycle chain lubricant and chain testing – over 300,000km of controlled testing to date.*



## Lubricant On Test : Silca Hot Melt

Cost: \$79.90 Aud from Zero Friction Cycling and other online stores.

Size – 500grams



Photo :

## **Manufacturers Description on package;**

Hot Melt wax chain lubricant with Nano-Scale tungsten disulphide

## **Directions on package**

User directed to website for full instructions, brief instructions are;

1. Always start with an ultra clean chain (old or new)
2. Melt Secret Chain Blend Pellets using the proper techniques
3. Apply to the chain using recommended method.

## **Extra information from Manufacturer website**

ILCA Secret Chain Blend (Hot Wax) brings all of the super speed and silence of our Super Secret Chain Lube in a hot-melt wax-dipped chain. Secret Chain Blend also utilizes the world's fastest, most lubricious additive, nano-scale Tungsten Di-Sulfide. NanoPlatelet WS2 has less than 1/3 the dynamic coefficient of friction of PTFE and 1/4 that of Molybdenum Disulfide (MoS2). The best part of this product is the submergible pouch! Don't want to dedicate a crockpot to hot-waxing your chain? Simply put the chain in the bag and immerse in hot water!

## **Who's it for?**

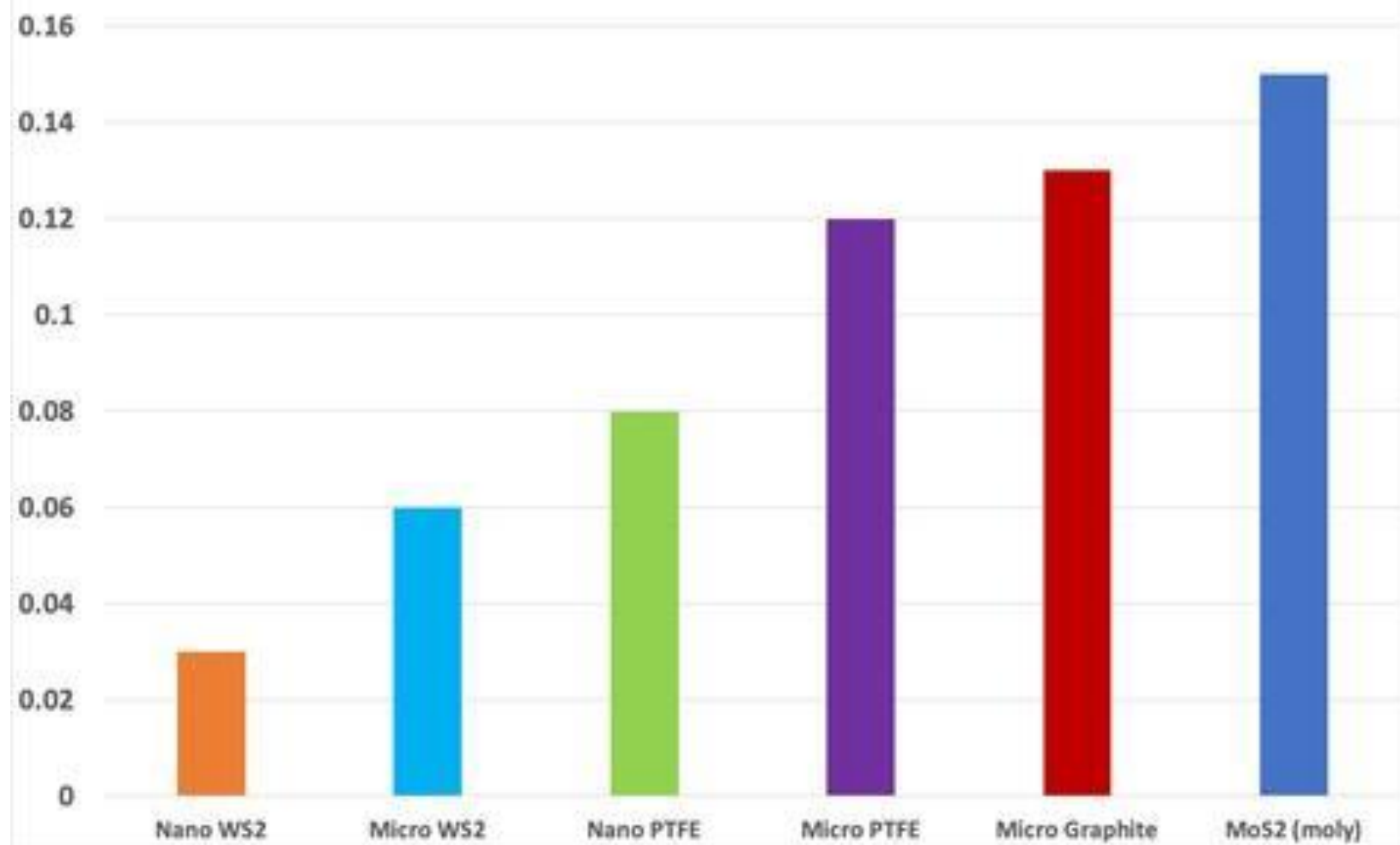
The cyclist looking to maximize performance through friction reduction, or the cyclist who loves a silent running bicycle.

## WHY WE DESIGNED IT:

When we launched secret chain lube, Josh admitted that the starting point for this product was a hot wax recipe he had used for years with pro teams that had won numerous world and Olympic medals. The idea behind Secret Chain Lube was to bring this technology to a lube that didn't require hot melting but turns out, many of our customers were already big fans of hot waxing chains, and the requests flooded in for us to release the SILCA Secret Wax Blend.. so here it is!

Consisting of highly refined laboratory-grade paraffin and a high concentration of 3 specific sizes of nano-scale Tungsten disulfide, Secret Chain Blend not only acts as a lubricant but actually acts to modify the surface of the chain, filling in all of the crevices of the metal with highly lubricious and wear-resistant tungsten disulfide particles. As a result, chains waxed with Secret Chain Blend and Secret Chain Lube will actually get faster over time and after repeated waxings. Secret Chain Blend is the only hot wax lubricant to have a specifically matched and compatible drip wax which can be used to 'top off' the wax as needed, extending the duration between hot wax applications, and guaranteeing the quietest running drivetrain possible. Using the combination of Secret Chain Blend and Secret Chain Lube can dramatically extend the chain and drivetrain component life (up to 10x).

## Coefficient of Friction





## THE ENVIRONMENT:

Best of all perhaps is that this formula would prove to be very environmentally friendly, utilizing 4 different types of wax, nanoplatelets of WS<sub>2</sub> (Tungsten Disulfide).

## SPECIFICATIONS:

- 500 g. / 17.6 oz. pouch
- The chain should be VERY clean and dry before applying ([CyclingTips has an Awesome Chain Cleaning Guide HERE](#))
- For year-round chain maintenance, top off the chain with a bottle of [Super Secret Chain Lube](#).

## Any extra detailed information re application and usage from website;

### FIRST: CLEAN your Chain

Method 1: On-bike cleaning

1. Use a degreaser and brush and begin working the degreaser into the chain links

Here is a link to the degreaser we recommend. <https://amzn.to/3eu84E0>

2. We recommend 6-8 revolutions of the chain, scrubbing all sides of the chain with the brush to work the degreaser into the links and rollers

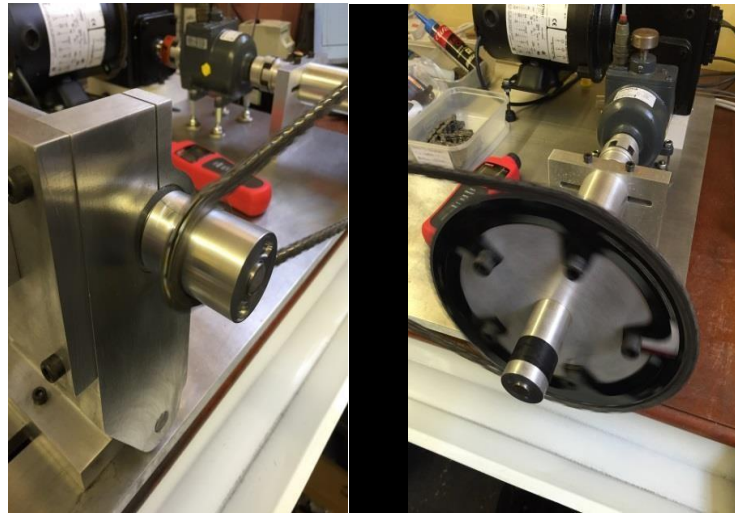
3. Hose the chain directly just in front of the rear derailleur pulley. DO NOT DIRECT PRESSURE onto cassette, hub/axle or BB areas

4. With clean brush and strong dish soap/water mixture (we like ~1 tablespoon Dawn in ~2 cups water) work through the chain again, scrubbing all sides and trying to drive out any remaining dirt as well as any trapped solvent

5. Direct spray rinse the chain again

6. Dry chain with towel/paper towels and allow to air dry in sun for at least 30 minutes OR (preferred) Direct Blow with high-pressure air to drive out remaining liquids and particulates

**\*\*Website has two further videos to guide through waxing process\*\***

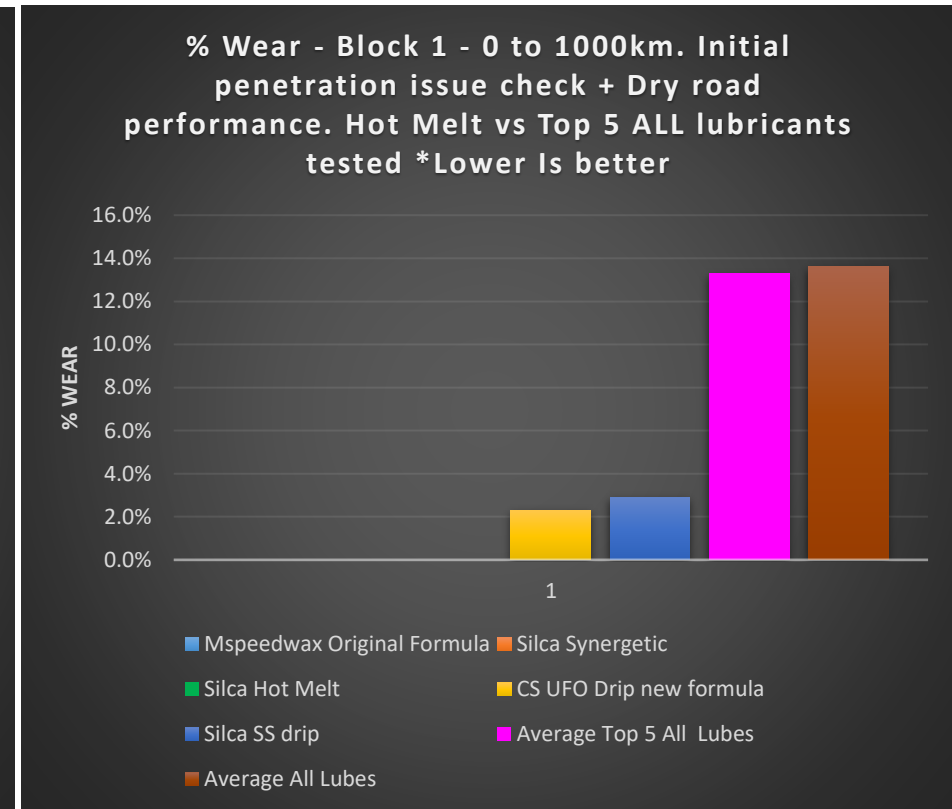


**Official Outright efficiency loss if tested by dependable FTT lab :** At this time I believe the official result for Hot Melt is 3.8w loss at 250w load which would make it currently the 2<sup>nd</sup> fastest lubricant known (based on outright efficiency results I can trust). UFO drip is in numero uno spot at 2.8 to 3w, Mspeedwax – original formula was 4.6w however they do have an updated formula which has also moved from Moly to Tungsten-Disulphide, I do not have test results for new formula.

## Silca Hot Melt Main Test results



**Test stops when net chain wear reaches 0.5mm+**



**Welcome to an updated format for the block by block results vs the old dated table, which should help you decide if the lubricant is right for you based on the type of riding and conditions you personally ride in.**

**\*\*NOTE re test graphs - Double application means that for that block the lubricant was re applied / re-waxed at double the rate of the standard test protocol. For tru-tension tungsten race this was done as the treatment lifespan of the lubricant is VERY short and it would not**

have made standard test intervals, for mspeedwax it was done as an experiment to back up the benefits of frequent re-waxing vs pushing wax treatment lifespans – the figure for MSW at standard test intervals was 12%, however that is with the old formula, their new formula is still to be tested\*\*.

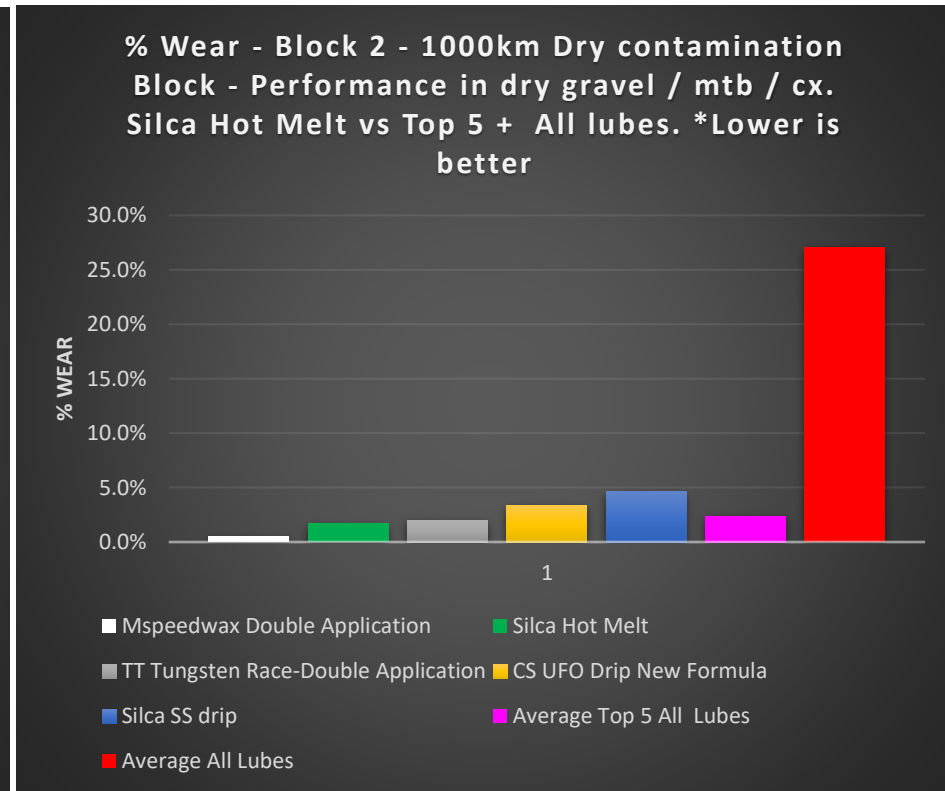
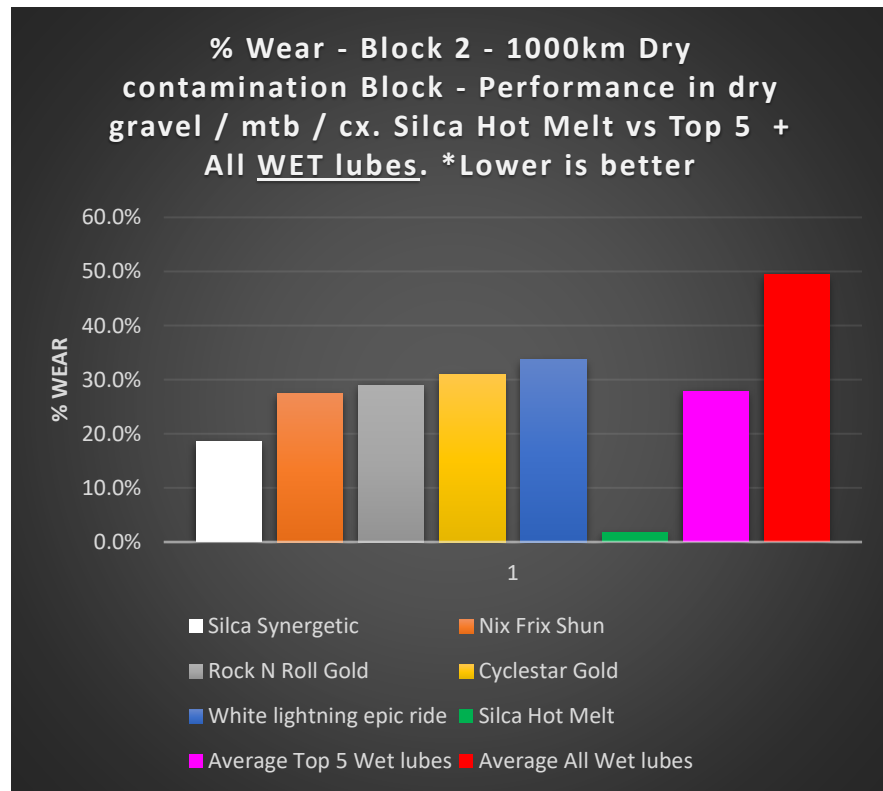
As we can see above, Hot melt being and immersive wax obviously clocked in with zero penetration issues, and showed zero wear throughout clean block 1 which is 1000km of hill and flat simulation intervals with 2 re-lubrication points (re-waxes in this case). Interval length – which for flat simulation intervals is up to 400km and over 12 hours, was no issue for hot melt.

One key strength for immersive waxes is that all parts of your chain are coated in a solid super slippery wax. Re-wax within treatment lifespan and chain metal is effectively left out of the equation. Even with the original gangster of immersive waxing – Mspeedwax – ZFC has seen real life cases of chain lifespan hitting nearly 25,000km to a genuine 0.5% wear replacement mark, and circa 15,000km is common. These figures are generally unheard of for drip lubes, albeit it will be interesting to see what we get over time from Silca ss drip, Ceramic Speed UFO Drip new formula, and absoluteBlack Graphene for dry road riders staying within treatment lifespans.

\*\*Note – whenever an immersive wax or chain coating type lubricant is on test, I will try to find time to post data for both vs Wet lubricants and vs All lubricants as above as there is often some debate with regards to what lubricant is best in what scenario (ie it is a commonly held, and very incorrect belief - that waxing / chain coating type lubricants are not suitable for wet weather riding, the test data helps demonstrate clearly what lubricants come out on top in each test block).

We can see above for block 1 – Dry road riding, that immersive waxing and chain coating type lubricants dominate. There is just ONE wet lubricant that has really stood out here which is Silca's new Synergetic which also clocked a 0.0% wear rate for block 1, which is well above what any other wet lubricant has delivered. I have had some high performing private tests where a wet lubricant came in under 5%, but there have only been a couple of those, so Synergetic is well clear here and if you prefer wet lubricants and ride dry road – that is your current best known numero uno at this time. **Hard to beat 0%.**

## BLOCK 2 – Dry Contamination – Performance assessment for dry gravel / Mtb / Cx riding.



Alrighty here we can see that vs wet lubricants the immersive waxing of Silca Hot Melt, we are simply in a different ball park altogether, and again this performance in the world of dust and dirt for immersive waxing / chain coating lubricants is often not fully appreciated even by top level mechanics in the industry with decades of experience. It is very common for mtb riders to just drip on a wet lube, and keep wiping chain and re-lubing and believing that the wear rates attained are normal. Well, they may be normal for those riders, but they are a world apart vs what can be achieved for immersive waxing, or the top chain coating type lubricants where the dust basically just bounces off vs being absorbed on contact as is the case with wet lubricant. Test – next time you are at beach, sprinkle some dry sand over the back of your hand then shake your hand and see how much sand is left on there. Next, put hand in the sea, and then sprinkle dry sand over it again. Notice any difference.....? (or get some dirt from home and do the above with dry hand / hand run under tap. The difference will be rather obvious :).

Even on a number of my absolute favourite cycling podcasts, there is a pervasive belief that waxing / wax lubes / chain coating type lubricants are for roadies for racing, and not for gen pop / mtb riders who should be just adding a good wet drip lube. Over time considering the ENORMOUS cost to run savings for immersive waxing / top wax lubes & chain coating type lubricants for offroad riding, I hope to change this too frequently and long held belief. And stop it being passed on to current / new generation of cyclists, it is time for testing, data and logic to replace incorrect legacy info. Remember you too can test – don't believe ZFC testing, use strava to track km's of your bike / groupset and a shimano tl-cn-42 chain wear checker and put your favourite wet lube vs one of the top chain coating lubricants recommended here and find out for yourself. Countless real word cyclists have done exactly this over the years since I started ZFC, and their data matches my testing – but as always if you want your own proof, it is easy enough to go & get for cost of one drivetrain. Or you can just trust the graphs above – again ZFC is independent and sells the top wet lubricants known and waxes / chain coating lubricants so I do not have any motive against wet lubricants, I am simply working hard to ensure they are used by right cycling demographics.

The trade off for many chain coating type lubricants vs wet lubricants is that for some have a relatively shorter treatment lifespan so you may need to apply more frequently vs a number of wet lubes. But this is not difficult, and also for some of the options such as in this case Hot melt – **Silca Hot melt has VERY impressive application longevity** so this should not be an issue at all re how often one needs to re-wax.

Also since I am reviewing and immersive wax product here, I need to cover that immersive waxing is often made out to be some crazy hard process (in fact by some it is almost on the verge of being vilified), and again this information is flat out incorrect and is given either due to

poor knowledge re immersive waxing or by competitors who are claiming their products match immersive waxing performance without the supposed huge hassle, danger etc of immersive waxing.

In reality, immersive waxing is oh so simple, and if you use a slow cooker/ crock pot or instant pot it is no more dangerous than boiling your kettle. It is just so, so easy. Probably the most common feedback I get from wax converted customers, aside from overall super happiness re super clean silky smooth running and amazing low wear rates over time, is just how much easier it is than what they thought it would be. Pop chain off, put it on a swisher tool, put in pot and turn pot switch from off to low. Not hard. 1 mins work. Go do fun stuff for a bit then come back when wax is melted and swish around and hang to set above wax pot so excess wax drips back into pot. 30 secs physical labour time work. Then before next ride break wax bond on links and re-install chain – 2 mins work tops. So whilst a total of 3.5mins labour time may (may..) be more than what some are doing vs adding more wet lube, remember for that in most cases you have ZERO back end cleaning maintenance, so there is no more faffing about with degreasers and brushes and cloths. And wear rates / cost to run savings that simply smash the best known wet lubes to date out of the park (exception being Synergetic for road use which is extremely low wear and cost to run). Again whilst I cannot publicly share I have tested privately a number of other “top” wet lubes, and they are not matching Synergetic or NFS, so the average wear rates for wet lubes where every particle of dust sticks on contact vs basically bouncing off and any that does penetrate is reset next re-wax – they simply cannot compete.

So if immersive waxing has been on your possible radar and you ride offroad – the savings for gravel / mtb / cx riders are all that much greater again vs what road riders enjoy. Solid lubricant in the world of dust, or wet lubricant – even on basic intuition that is not a hard one to nut out, and I apologise on behalf of the veritable mountain of incorrect (and defensively defended) information that is STILL being pumped out re waxing / wax lubes / chain coating type lubricants in the face of clear and extremely robustly tested fact. If you don't believe my testing, just ask you nearest hot melt or mspeedwax, silca ss drip or ufo drip rider how their wear rates are going – or as mentioned above – test for yourself.

Where does it go wrong?

- Do not use a shite wax. THERE IS SO MUCH CRAP INFORMATION ON YOU TUBE re DIY waxing, people using cheap hardware store paraffin or candles, this is a big part of why some mechanics hate waxing because bikes keep coming into workshops looking like they have been lubricated with gummy bears. Cheap waxes have a high mineral oil content, and candles also often can contain soy or palm oil as well – they just get dirty and gunky in short order. There is one particular video that pitches msw vs home blend wax with the home blend wax coming out on top re wear – but the test has more flaws in it (in my opinion....keep lawyers happy...) than I can list here – refer to “That oz cycle video” document in ZFC website instructions tab which covers the testing and results and you can decide for yourself if my concerns re the testing and results are valid or not.
- Ensure your chain coating type lubricant has had at least an overnight set time. If you do not give it sufficient set time it will not be acting like a solid coating but kinda still like a wet lube.
- Do not over apply many wax drip lubes or drive train will gunk up. Simply apply at end of ride chain is starting to sound / feel a bit dry, and thoroughly wipe all excess after working in (and allow overnight set).
- With immersive waxing with top known waxes (Silca Hot Melt and Mspeedwax) you do not have a set time (the wax sets in about 10 mins) and you do not have over application worries – you can re-wax every ride and all you will get is a chain that practically lasts forever.

So there is some user error that persists largely thanks to many looking for information, which is a logical thing to do, but unfortunately what will come up on you tube is almost certain to be terrible. Yes yes, im getting closer to ZFC you tube and start turning that mountain of shite info around somewhat.

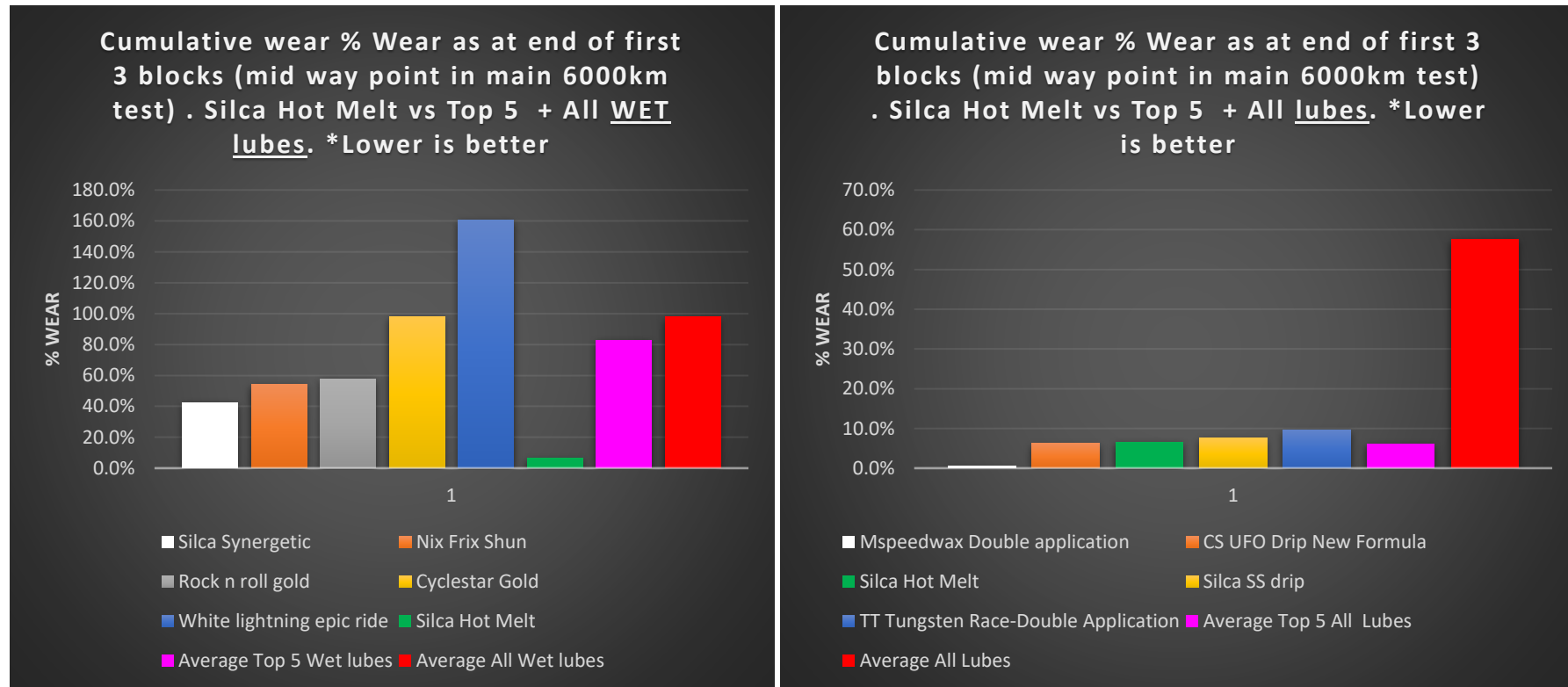
**BLOCK 3 – No Contamination – Performance assessment re clearing any contamination absorbed in dry contamination block 2.**



Ok I we have a minor test anomaly here, with Hot melt recording a 4.6% result in block 3 when really the expected result being an immersive wax would be 0.0% - I suspected initially a bit of variance re chain itself here, however the same was recorded for clean block 5 post wet contamination block 4. My main theory is the there is something with the blend of 4 waxes used in hot melt that by the end of all the contamination it is hit with in the contamination blocks, it is hanging onto a tiny amount of it for the first re-wax next clean block, which is removed back to zero next re-wax.

But we can see that overall for the immersive waxes / chain coating type lubricants – the wear rate for the top 5 reduces to just 0.5% average, so basically back to zero once contamination addition is stopped (remember there is ZERO cleaning of the chain in the main 6000km test).

## Where are we at with Cumulative Wear at halfway mark of 6000km main test?



At the halfway mark of test we have had 2 x No Contamination (clean) blocks sandwiching 1 x dry contamination block. The test gets proper tough after this halfway point, and the average numbers will get a bit approximate for the wet lubricants as many lubricants have simply used



up their wear allocation by end of block 3 or at most block 4, and so I start needing to extrapolate data for those lubricants which becomes very ballpark. This will be explained further next block.

However – by the halfway mark, looking at cumulative wear from blocks 1, 2 & 3 (totalling 3000km of testing), this is REALLY starting to highlight the enormous gulf in performance of immersive waxing / top chain coating type lubricants vs wet lubricants, with an average wear rate for the top 5 lubricants tested sitting at 6.1%, and the average for the top 5 wet lubricants tested that I can talk about sitting at 82.8%.

That's quite a gap.....

Again this highlights, especially if you run expensive drivetrain bits on your bike, the frankly ginormous difference in drivetrain running cost by choosing a proven genuine top lubricant choice / immersive waxing vs just dripping on more wet lube and wiping.

And of course I do need to also note here that the top line result is msw at **DOUBLE the re-wax rate** vs Hot melt which was re-waxed at the **standard test interval protocol**. MSW original formula result at this point in the test is 20%, so if I remove vs a double application test and go oranges to oranges, Hot melt is sitting just 0.3% off CS ufo drip – which at this point in test that tiny variation in total wear rate is well within test variance margins – ie if I re-tested both it is entirely possible the results would switch places – so those two are really both number 1.

But really we can see that there are No if's, but's or maybes about things, recording a total of 6.6% of the 0.5% chain wear allowance after 3000km of testing including a harsh dry contamination block, Silca Hot Melt is demonstrating EXTREMELY low wear, which translates to EXTREMELY low drivetrain parts wear and running costs. And your chain looks brand new every time it comes out of the pot, with no cleaning needed at all between re-waxes, and your drivetrain looks always extremely clean. The Hot melt drivetrain was looking extremely clean at this point in the test, as in near brand new looking clean.

Hopefully even by this point, the test results are really starting to speak for themselves re Hot melt performance.

Yes of course you can reduce that wear rate for wet lubricants by a lot if you did some proper regular maintenance, by I can tell you now in absolute terms, you would need to through enormous amounts of solvent & full flush clean resets (like basically after every ride if you ride in offroad) to try to bring your wet lubricant chain near the ballpark of the where the top 5 chain coating type lubricants are sitting (or where hot melt is sitting), and you would have spent a veritable fortune in solvents, as well as a massive amount of maintenance time. If you are dry road only on Synergetic you will stay super low wear, but you can see how event that top wet lubricant increases once dust contamination is regularly introduced. And you can also see on the full data table on the ZFC lubricant test web page, the majority of wet lubricants do not even deliver a wear rate in clean block 1 lower than the average wear rate for the top 5 chain coating type lubricants after 3000km including a harsh dry contamination block.

I don't mean to sound like a bully against wet lubes here (I know it must be coming across that way), alas the test data just does not lie, nor do the real world results.

This is where the "I don't have time" to re-wax argument falls over. If you want to maintain a relatively decent performing wet lubricant chain – especially if you see some contamination, it will take you vastly more hours of maintenance solvent flush cleaning vs the time involved in re-waxing which is very little, and it is truly much much easier than it is often made out to be by anti waxers who often bemoan the need to purchase and use a \$20 slow cooker as a similar effort level to changing ones headset on a fully integrated cabling bike.

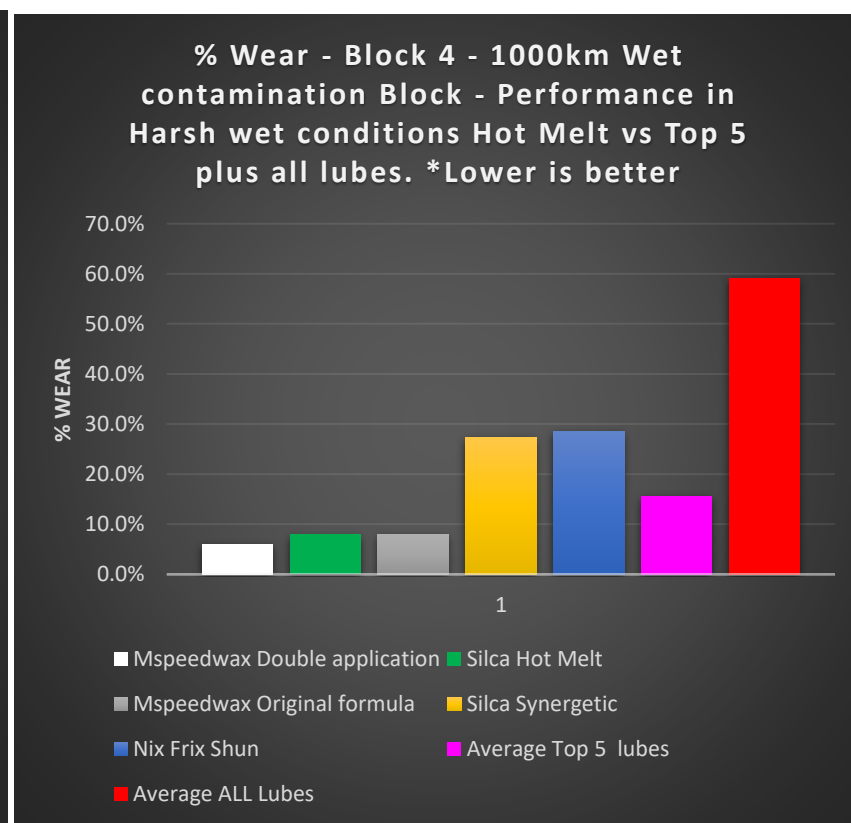
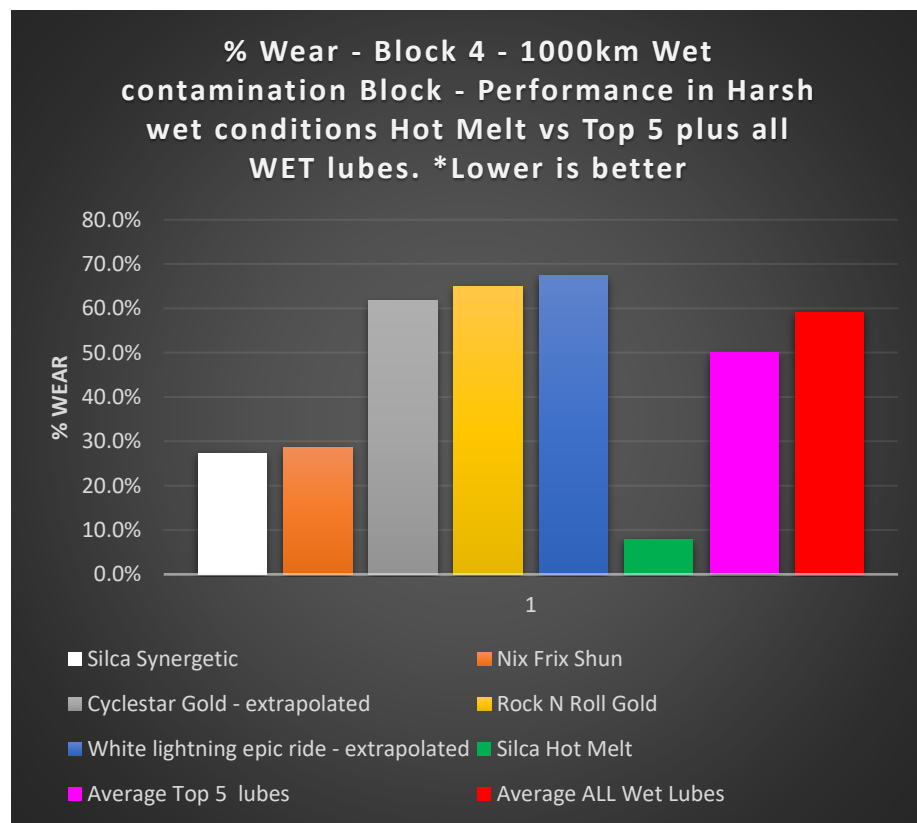
### **It isn't.**

Also – a popular option available nowadays thanks to their being some top immersive waxing compatible drip lubricants available – you have the option to use combination of drip lubricant & immersive waxing – still without the need to perform and drivetrain maintenance cleaning. Silca SS drip and UFO drip new formula as well as Tru-Tension Tungsten all weather are outstanding, and so you can wax, re-lube next 5 to 10 times with those lubricant options, then do a re-wax to reset any contamination that may have penetrated and get back to a brand new

looking chain with no cleaning. Immersive waxing all the time is still king, however the above option is not too far off, and suits some riders more who worry if they are going to be ok doing a re-wax every time they need to re-lube.

Armed with that option above, there just is no excuse for a dirty, high friction, high wear drive train – the options are there for all to see how to save day in day out a shipload of friction and wear and skip need to use solvents to maintain drivetrain.

**BLOCK 4 – Wet Contamination Block– Performance assessment riding in harsh wet conditions.**



To put it bluntly, Block 4 in the test is for many lubricants they are put to the sword somewhat. This test block results are extremely interesting, and at first blush with two top wet lubricants making an appearance in the top 5 overall, and two top chain coating type lubricants falling out of the top 5 (Silca SS drip and CS UFO Drip) – the proponents of waxes / chain coating type lubricants not being suitable for wet conditions riding may be getting ready to mount their soap boxes. But hold thyself mid step....

Firstly – the outright wear rate difference, even taking out of the picture MSW double application test, we have both Silca Hot melt and Mspeedwax Original formula at 8%, whereas the two top wet lubricants making an appearance are averaging 28%. So for a start, whilst a good

result, it is still 3.5 times greater than the wear rate achieved for immersive waxing, so immersive waxing, at standard test protocol intervals, is frankly miles and miles ahead.

Keeping your chain low friction in harsh wet conditions, I can not overstate this enough as it is just often not given the consideration it should be – it is **an EXTREME LUBRICATION challenge**. Water runs right through the chain and brings with it abrasive contamination, which even for solid chain coatings - this contamination will be pressed into the set lubricant, where it is effectively land locked. Wet lubricants may resist the water itself and not be washed off, but that does mean it is repelling the contamination the water is bringing with it. If it was, the wear rates would match clean block 1 wear rates. They do not.

This is where immersive waxing has an unassailable advantage, as each re-lube, being a re-wax, you are putting chain back into a bath of 400ml + of 100% lubricant, the old coating melts off, and chain is re-coated in a fresh layer of super slippery wax. Yes over time as each re-wax brings contamination into the pot, the wax will become less amazing and should be changed periodically to a fresh bag – but if we compare submerging chain in 400ml + of wax vs re-lubing with even a really heavy dose of say 10ml of a drip lube – that is still less than 0.1ml per link. Changing the ratio of contamination to lubricant is absolutely in favour of the chain going into a 400ml hot melt bath, vs 0.1ml of lubricant added per link on top of the existing contaminated lubricant.

Aside from the 8% vs 28% immersive waxing vs top two wet lubes ever tested result, you will again see in the next test block – block 5, the massive difference in immersive waxing re being able to reset contamination post wet rides vs what is still going on inside your chain with a wet lubricant. This is the **second key part** as to why wet lubricant proponents for frequent wet riding should hold off on jumping up on that soap box.

Unfortunately again there is a huge amount of content out there that puts waxing / chain coating type lubricants as not suitable for wet conditions riding, use a wet lube. This CAN be true – one aspect of immersive waxing and wet riding that I haven't covered yet is that post any decent wet ride you really must re-wax that day post ride (or re-lube with a wax compatible drip lube listed above). If you do not, as wax is

abraded off the outside of chains rollers first, and chain rollers are often high carbon steel and can oxidise readily – it is this need to re-wax post wet rides (or lube with wax lube) that it is frequently bundled in the it is not feasible those who frequently ride in the wet vs wet lubricants where you can park bike post wet ride, your chain wont rust, and can just head out again next ride. However, the part that is missed is that for wet lubricants – basically what you will have is a mild grinding pasted or lapping compound masquerading as your lubricant unless you fully solvent flush clean it to reset the contamination. So what is easier? Popping chain off and popping it in a pot of wax and turning a switch from off to low, or popping chain off and going through circa 10 to 15 x 200ml solvent baths? I know which one I find easier. Anti waxers will not be doing the proper maintenance, just wiping chain and re-lubing, and accepting the wear rates as perfectly normal. Immersive waxers experience one heck of a lot lower friction lower wear “normal” that will absolutely save you ton in drivetrain cost to run.

UFO drip and SS drip fell down a bit here (32.3% and 36.9% respectively) most likely because the interval lengths with this level of harsh contamination appeared to exceed those lubricants treatment lifespan. Had they been tested at double the application rate, I am extremely confident both would have finished well ahead of the top two wet lubricants – so the key if using such drip lubricants in harsh conditions in your own personal riding is to NOT push treatment lifespan – basically you should re-lube post any wet ride with these lubricants. Immersive waxing you have a much longer treatment lifespan as half of the application is not carrier as it is with chain coating type drip lubricants, it is 100% lubricant, but still you should always re-wax post any wet ride as noted above to avoid possibility of your rollers starting to oxidise

If you have a very long harsh conditions wet ride ahead, then you MAY need to consider with a waxed chain packing a bottle of wax lubricant just in case to add as a top up. It is far better to add a lubricant like SS drip and not allow it any set time vs letting your chain wear through its wax coating and get to metal on metal. Like all lubricants lifespan is reduced the more harsh the conditions. The abrasive contamination brought into the chain by water will physically abrade away the wax coating over hours of riding much more quickly than what it takes to wear through same coating in dry conditions. A chain with little to no lubricant tests at circa 20w loss, so if you start to feel / hear your wax coating has been abraded off, err on the side of caution and add wax compatible lubricant. You can add something like synergetic and then be set for ages on a wet ride, but if it's your waxed chain you are going to need to fully clean that back to clean chain metal again before re-waxing – if you leave a wet type lubricant on a chain then next re-waxes risk not be able to bond properly to chain metal to form your lovely solid slippery chain coating. Also you may contaminate the wax in pot so that should you then decide to clean chain properly, if the wax is contaminated, again – you risk poor adherence and treatment lifespan.

If you want to know more about post wet ride care, what you should do for X type lubricants – I have covered this in more depth the graphene lube detail review – I will have this covered in its own doc / video soon (ish) depending on crazy workload.

Wet lubricant proponents will think that prospect of needing to re-wax post any wet ride is bonkers, and honestly for some who train a lot, busy work, families etc – it just may not be feasible. Again a super easy option for such riders would be to use wax compatible lubricant such as silca ss drip and ufo drip and just re-apply quickly post any wet ride, and then re-wax when next have time so you can to reset contamination. This makes it basically no more difficult that using a wet lube, and vastly easier overall vs the maintenance time and solvent use needed to maintain a low friction wet lubricant chain if you ride a lot in such conditions – so the information is just.... Often far from correct, and I can only again stress there is a better kind of “Normal”

However better by miles if you train frequently in such conditions is to run multiple training chains. Again this is often shouted down as nuts by some, but it is simply a really smart way to roll. You are always going to need another chain sooner or later, especially if you train frequently in harsh conditions – on many lubricants that next new chain is never going to be that far away if you are replacing it when you should to preserve the rest of your drivetrain components. Simply pre buying your next chain, or even next two chains – costs you no more.

In fact, it is all but guaranteed this system will quickly save you some good coin. What is very common for riders who frequently train in harsh conditions, hammering the same chain, is that they rip past the 0.5% recommended wear allowance, usually taking their cassette with it. And sometimes even chainrings (or have put a good dent into wearing their chainrings such that they will only get 2 chains vs circ 6 chains through a set of rings).

It is key to remember especially with most drip lubes chain wear is not linear. Quality chains start with a low friction coating and other wear resistant treatments such as chromium plating on pins. Your chain starts out lovely and clean with your lubricant of choice (hopefully not factory grease + random shite lubricant choice). As you clock up some km's in harsh conditions, not only does the abrasiveness of your

lubricant increase markedly unless you are frequently resetting, but after a short time your low friction coating is gone, and then your other wear protective plating's will be compromised. It is not uncommon for a rider to check chain after X kms and see that wear has only just started, check again same number of km's later to find that they have ripped past recommended wear rate and now need a new cassette. That is simply because the first half off the lifespan the lubricant was less abrasive and chain had some wear protections in place, the second half the lubricant was much more abrasive and no longer had those protections remaining, so the wear rate curve can shoot up quite sharply.

Hence running multiple training chains for such riders makes it much easier to a) do some sort of maintenance or re-wax in between whilst other chain/s are on, and b) you double or triple the length of time you spend with chain at the low wear rate end of things, greatly extending lifespan of your cassette and chain rings.

Considering the cost of some cassettes (ie AXS red road cassette, eagle xx1 / xo1 cassette) – halving or cutting to 1/3<sup>rd</sup> the wear rates on these components – (assuming you aren't yet even making an improved lubricant choice) – by simply pre buying your next chain or two – I cannot see why, at all, this is often looked at as bonkers. It is a really, really, really smart way to roll – and if you fall into the category of high mileage rider who frequently rides in harsh conditions – personally I would have you in the bonkers category if you did not consider this option. On top of this if you also go from running an average or poor performing lubricant to a top lubricant choice, all of sudden your wear rate reduction is truly in the Holy Batman territory.

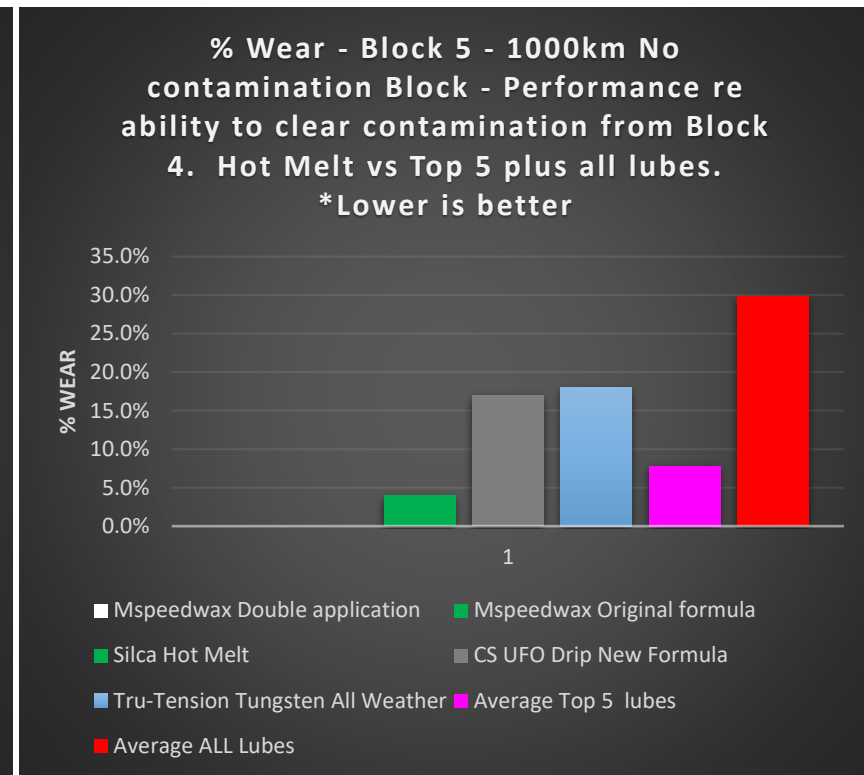
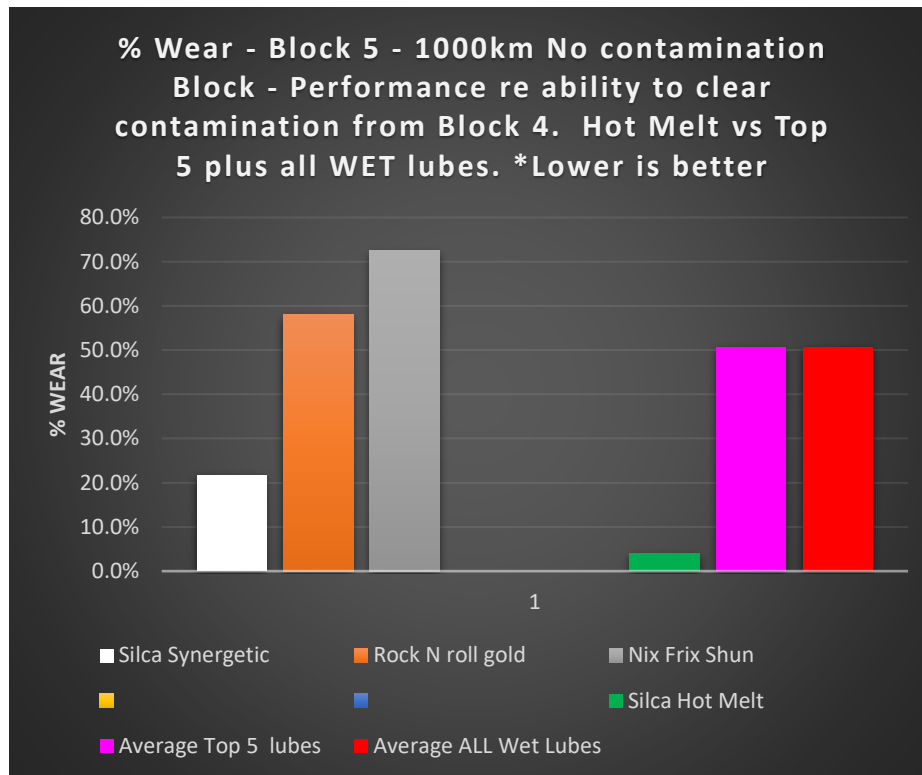
So – for immersive waxers on hot melt / msw going the super smart multiple chain route – if you cannot pop chain off post wet ride and pop in pot and turn pot on, you will at least need to pop chain off (wipe dry if you can very quickly) and wrap in a microfibre cloth (NEVER PLASTIC OR PLASTIC BAG – that is a humidifier rust catalyst path). The microfibre cloth will help wick surface moisture off chain but not let sufficient air through and gives you a few days at least before you have to worry re ensuring you get chain into wax pot – often multiple chain waxers will wax multiple chains at once which increases time efficiency nicely.



Lastly, it is worth noting that unlike most wet lubes where over time you get a build up of an abrasive paste on cogs and rings, immersive waxing, especially if you stay on top of doing frequently, keeps cogs and rings coating in a solid slippery coating of wax that is very wear protective.

Honestly most cyclists will simply not believe the enormous drivetrain parts lifespan extension that can be achieved by using hot melt in such conditions and re-waxing frequently vs wet lubricants, and simply need to experience it first hand to move from the scoffing anti waxer “that’s batshit crazy” column to the “Holy batman if only I knew about all this years ago I would have saved a fortune” column.

## BLOCK 5 – No Contamination – Performance assessment re clearing any contamination absorbed in Wet contamination block 4.



So as mentioned in block 3, Hot Melt sort of strangely recorded a 4% wear result vs the expected 0% result as soon as contamination ended.

Aside from that we have MSW both double application test and standard interval test both reverting back to 0.0%, next best to Hot Melt after that is CS UFO drip which due to a higher than most drip lubes re-application amount seems to clear contamination better than most, and Tru-

Tension Tungsten all weather makes an appearance in top 5 spot overall after recording a very impressive result overall in Wet contamination block, just outside top 5, and also seemed to clear contamination from that block well.

The story here continues however in the battle vs immersive waxing and wet lubricants re suitability for use in wet conditions. We can see that post wet contamination block, with zero cleaning just re-waxing, we are back to either 0% or 4% for the top immersive waxes, whilst wet lubes continue to grind away with what became part of the lubricant in block 4. I only have results for 3 wet lubricants in this block, all others lubricants had well exceeded wear rate allowance by this point and test stopped. Silca synergetic shows itself to be head and shoulders above the wet lubricant competition here with a pretty impressive overall result (in 6<sup>th</sup> spot overall – Top 5 overall really discounting the double application msw test). The wear rate for synergetic in block 5 was actually slightly lower than in block 3 after the dry contamination block which is interesting.

But back to the main thrust of the argument – other wet lubricants that have made it this far into the test recorded pretty woeful block 5 results, again wear rates for them continued to grow post block 4, and overall we have an average for wet lubricants of 50%, vs 7.8% for the top 5 lubricants overall made up of immersive waxes and chain coating lubricants.

So yep, I know I have been kinda **REALLY hammering home** the point, but I feel I need to as the wrong point has been continually hammered from so many different places for so long Im taking the opportunity here with the Hot Melt review to try to correct so many years of so much incorrect advice – Immersive waxing with a proven top wax in wet conditions is simply a different league altogether, not just for the wear rates recorded during the conditions so long as you remain within treatment lifespan, but also because as soon as you re-wax you reset contamination without need to do any cleaning intervention.

Again I can only stress the amount of time and solvent that would be required to try to get a wet lubricant reset back to try to match the performance of immersive waxing, and if anyone can now put their hand on their heart and say drip lubes are lesser maintenance than

immersive waxing for a similar wear rate performance after genuinely taking on board all of the above information and data, we may as well start calling the earth flat and that the sun revolves around us.

Now – I do not want to freak out / upset wet lube / drip lube users and keep bashing them over the head with a bag of wax. For a lot of riders (especially road), you will not be riding in the conditions encountered in the ZFC test which adds a lot of harsh contamination in those blocks. If you ride predominantly on road and in the dry, and you hate waxing / wax drip lubes / chain coating type lubricants for one reason or another, then using a top wet lubricant like synergetic is going to make you a very very happy cyclist indeed. We can see Synergetic recorded a worlds first for a drip lubricant 0.0%, that's it, ZERO percent – wear rate in clean block 1.

0% wear is like really low. Hard indeed to get much lower. And a 0% wear rate for any test block has previously only ever been attained by immersive waxing with a top wax.

If you continue to ride in dry road conditions, with a lubricant like synergetic I am not expecting that its wear rate is going to rapidly increase. So even performing very periodic cleaning maintenance is going to keep Synergetic extremely low wear. And its so easy to apply, and its an easy lubricant to clean, any cheap low toxicity organic solvent like mineral turps (aussie name – check for its equivalent in your country) will do it. And again, if you only get caught in the odd wet ride or spray – no biggie or need to freak out, those conditions are not like the hell of wet block 4 in the ZFC test– but again if you can live by the golden rule of resetting contamination post any decent wet ride, you will of course be doing chain and drivetrain parts a favour, and remember parts wear not only costs you watts but \$\$\$.

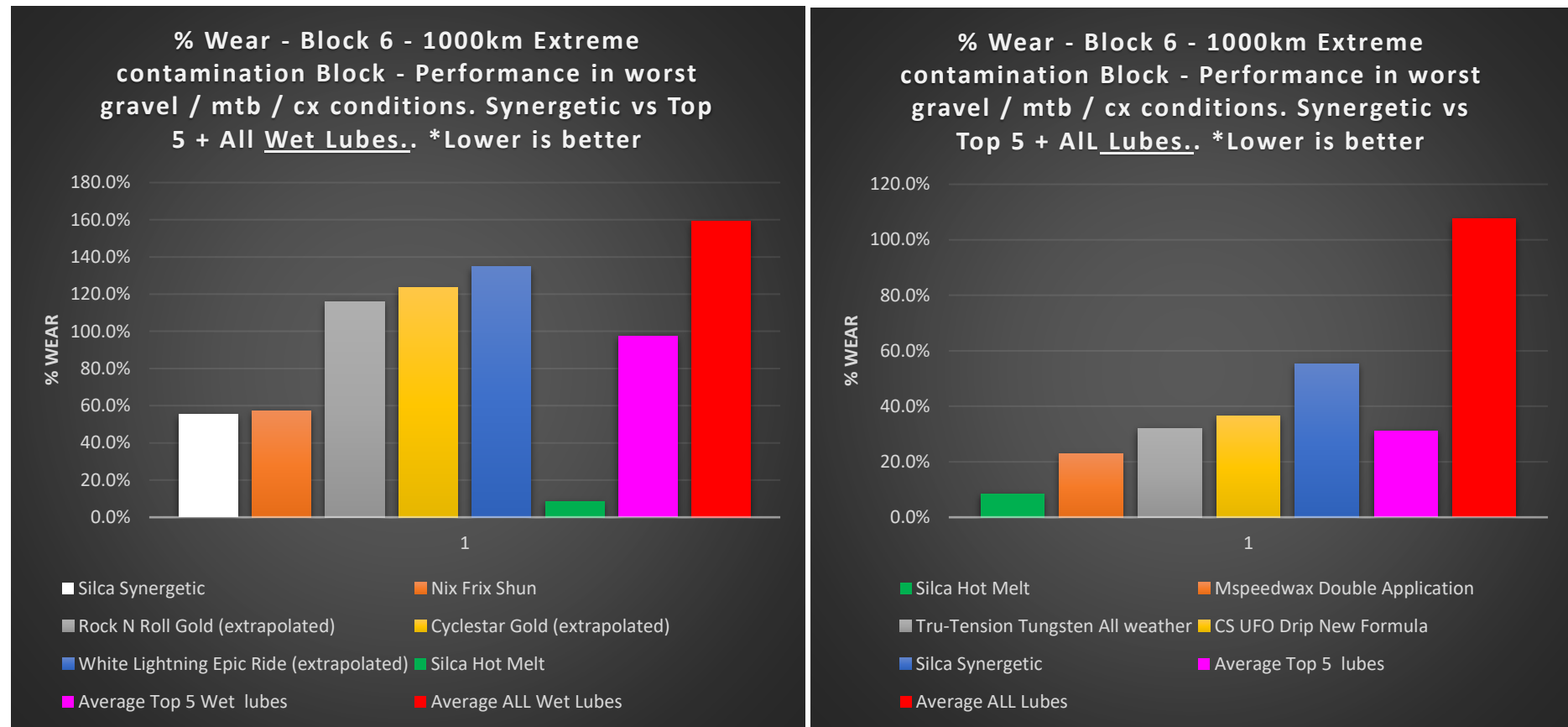
And again there are undoubtably other excellent wet lubricants on the market I simply have not had a chance to test yet that may be in the ballpark of or challenge synergetic – when I can I will be making a concerted effort to openly test more wet lubricants, a few good candidates have been suggested to me over time, and it is a bit of bugger pretty much all of the private wet lubricant tests have not delivered results sufficiently comfortable for the manufacturer to go public, a couple of them have also performed very well in block 1, and even pretty well in blocks 2 & 3, just yep – it all falls apart in block 4 & 5.

Which is ironic, considering that as I mentioned above it has been absolutely HAMMERED home by pretty much any cycling media talking on the topic that if you frequently ride in wet conditions, avoid waxing, use a good wet lube, and yet in all this time in 7 open wet lubricant tests and 5 private wet lubricant tests – a number of which are for some of cyclings possibly top tech wet lubricants – they have all fallen over in wet block 4 and continued a very high wear rate in block 5.

If you ride in dry dusty conditions, I hope the test results for block 2 really help clarify there – again, wet lubricants and dust – your call..... Im going waxing or chain coating lubricant myself. So mtb & gravel riders should really be having a solid ponder here if the typical M.O has been to just add more wet lube and wipe chain. If you havent had much luck with wax lubricants in the past, it might be worth giving the latest generation stuff a go, Silca SS drip, UFO Drip New formula, Tru Tension Tungsten all weather (which as a chain coating type lubricant was very good just not quite edging into top 5 due to the performance of immersive waxes + Silca SS and UFO) – things have moved forward indeed over the last couple of years.

And of course since this review is supposed to be about Silca Hot Melt, if you go the silca hot melt route, enormous happiness awaits.

**BLOCK 6 – Extreme Contamination Block– Performance assessment riding in extreme conditions – very wet and harsh contamination ie events containing lots of mud..**



Well, honestly this is pretty much a wow result – at only 8.6% wear – even I did not think such a low result in this block would be possible for any lubricant. It is not really much higher than its block 4 result, whereas mostly other lubricants get pretty smashed here – whilst some have

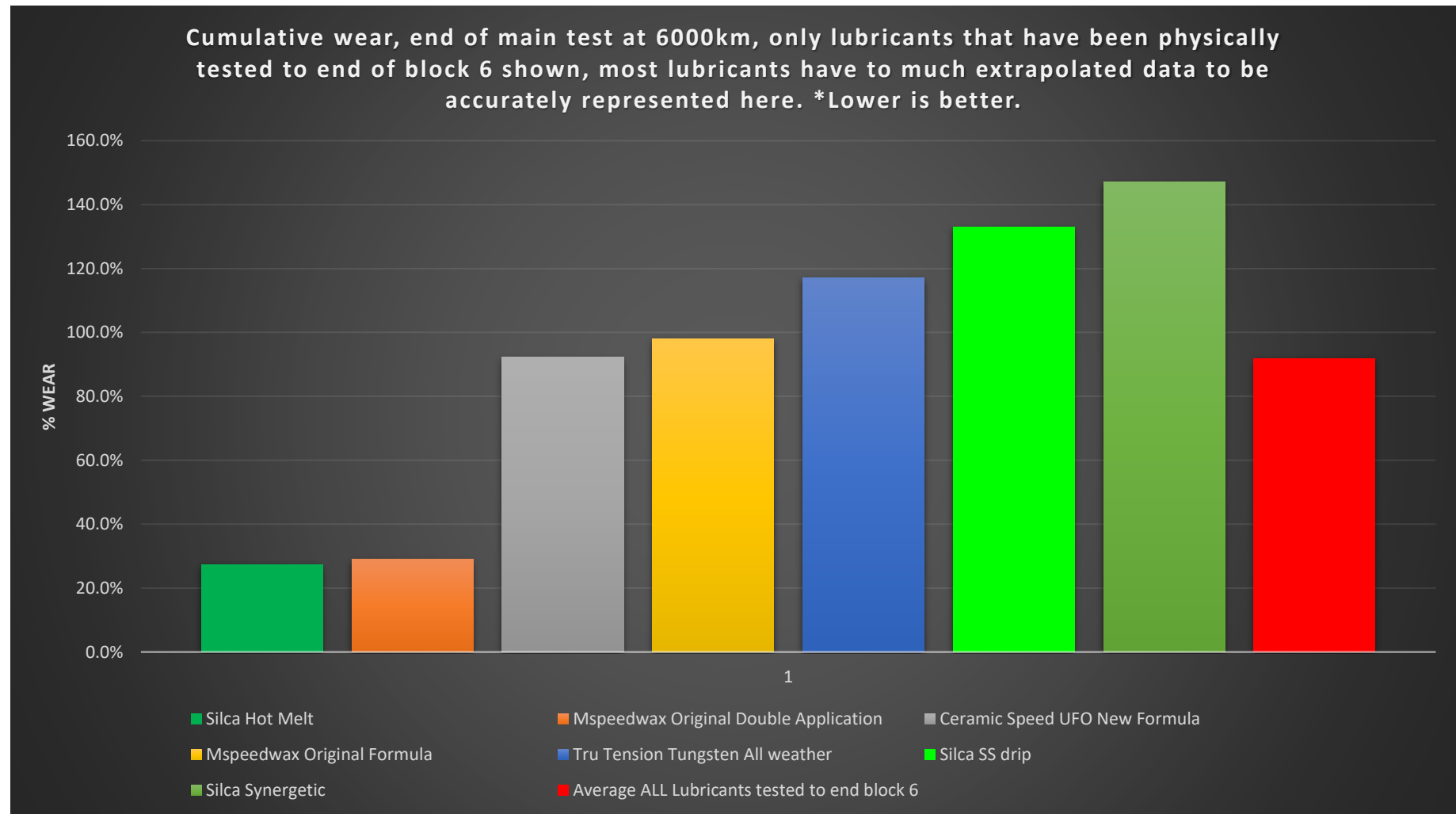
recorded results pretty close to their block 4 result, they have been more in the 30%+ range (ie CS UFO new Formula, Tru-Tension Tungsten all weather). Even Mspeedwax at double application rate still suffered comparatively here. So there is something in Hot Melt's blend of 4 waxes & its friction modifiers that has it lasting and resisting better in harsh wet conditions than I honestly ever expected to see. That is a hard benchmark that has now been set for others to beat, the next best lubricant tested to date at standard re-application rate is Tru-Tension Tungsten All weather at 32%, so the next best lubricant tested in the extreme block is nearly 4x the wear rate.

In short, it is a simply astoundingly good result. It will be some day indeed when something beats that. It is just... amazing. I'm going to need to talk a bit more in secret to Josh Poertner re this and see if I can find out just for my own knowledge what he believes is behind such a result with his wax. Im ready to sign confidentiality forms 😊

Again the news for wet lubricants is alas pretty dire – Synergetic Sneaks into the top 5 but yep, with a 55% wear rate – that's half your chain gone in 1000km, and that's the best wet lubricant ever tested by miles so far. Most others had to have results extrapolated from block 4 (doubled – which is a rough trend of what is seen with lubricants that make it through block 4 & 6 – actually its often much higher so a doubling extrapolation is likely being generous to them).

I know what I'm using for my next full mudder CX (\*\*Note however I really do need to also get to retesting mspeedwax's new formula that has also moved from moly to tungsten disulphide – the gap may be much closer than I have recorded – for the records original formula at standard re wax intervals vs doubled re-wax intervals recorded a wear rate of 78% in block six, it struggled with treatment lifespan - being abraded off by all the harsh contamination prior to next re-wax - we can see that when re-wax intervals were doubled it the wear rate for this block dropped from 78% to 23% which is very low – I thought that was not likely to be beaten, but along came Silca Hot Melt which did that rather handily, and at standard re-wax intervals.

## Total Cumulative wear end of test at 6000km with 3 x 1000km harsh to extreme contamination blocks;





Okey dokey here we are – Cumulative wear results for all test blocks through to the end of 6000km torture testing. As stated in graph title, only lubricants that were actually physically tested through to the end of block 6 are shown here – so not many lubricants have made it through. If a lubricant is not shown here it either passed its wear rate allowance by the end of block 5, or earlier, or in some cases tests needed to be stopped part way through a particular block (often block 4) as chain suck becomes too worrisome – I have had a derailleur hanger break once due to pushing through with testing when a lubricant was really not travelling well and chain suck was quite exciting.

Also, for some lubricants by the end of block 6 we have extrapolations on top of extrapolations. Ie for the two worst lubricants ever tested, Muc-Off Hydrodynamic and Muc-Off Nano – they had reached a cumulative wear rate of 126.6% and 145.4% respectively by the end of Dry Contamination Block 2!! So only 2000km into test! Their block 4 results are an extrapolation on block 2, and their block 6 results are an extrapolation of the extrapolated block 4 results – which suffice to say is ball park guesswork for how those lubricants would actually have performed – but since they failed so stunningly early in the test – again I think if anything the extrapolations are being kind to them. I do use that extrapolated data in the cost to run drive train tables for fun.

Back to Hot Melt – to reach the end of the ZFC 6000km torture test with **only 27.4% total wear**, again I can only state that this is an absolutely astounding result. Despite the relatively high cost per bag, the extremely low wear rate results for your drivetrain are easily offset and then leaving a lot of money in your pocket.

I have recently greatly expanded the cost to run modelling per 10,000km based on multiple groupset levels and by type of riding, so there is too much data to include here, however duck to the lubricant test page on ZFC website for access to full data tables.

A couple of quick highlights however;

Dura Ace Groupset – dry road riding – Hot melt Calculates out to an approximate drivetrain wear running cost (including lubricant cost) per 10,000km of just \$338.80. The lowest cost to run drip lubricant based on extremely low wear is a chain coating type lubricant - CS UFO drip at

\$626.43. The lowest cost to run wet lubricant is Silca Synergetic at \$908.97. The worst lubricant tested to date – Muc-Off Nano, calculates out to a whopping \$3754.

The average cost of all lubricants tested – again this is just for dry road riding – is \$1339. So at \$338.8, Hot melt is pretty much bang on one quarter of the average running cost for lubricants tested to date, and whilst I have tested some shockers, I have also tested a lot of the top known lubricants.

And remember, you have ZERO solvent or degreaser maintenance cost. You do have some master link cost (YBN links are 5x re-useable, if on 12spd – choices are either take a risk going against manufacturer instructions and re-use links 5x – honestly to date I have had zero reports back of sram or shimano link failure re-used 5x – and I sell a heck of lot of wax and links to 12spd riders over last years – but you need to make the call yourself, you cant snap a link and go over the bars and then claim ZFC guaranteed no failure – I do not – it is your call, just I haven't yet had a failure reported. Or if not comfortable doing this which is understandable, use silca ss drip for 5 x re-lubes then re-wax. Easy choices either way).

Cost to run figures get really exciting once we start looking at contamination blocks – skipping to the extreme contamination block results for a modicum of brevity (ha!) Silca Hot melt comes out at just 12% the average running cost of all lubricants tested to date – yes that contains a bunch of extrapolated data for the crap lubes tested – but again if anything the extrapolations are being kind to them. If im way off, Silca Hot Melt might be 20% of the average – its still astoundingly low cost to run due to its astoundingly low component wear rate.

## Single application longevity results.

One the most common questions I receive these days is will X lubricant last me for X event. The initial single application longevity test was not sufficient, it was relatively quick test tacked onto the end of the main test as I put all my focus onto ensuring main test protocol properly assessed all the key performance area's needed.

Over time it became clear the initial single application longevity test was not sufficiently well thought out, and also that this area is a key piece of data for many racers or riders participating in a groovy event, I have introduced a new, vastly better Single application protocol.

Alas – this takes a lot longer and multiple chains per test to cover road, dry offroad and extreme conditions, and so I am as I type working my way through re-testing all lubricants worthy of testing, or new tests currently completed (such as Graphene wax).

**\*\*Note so AB do not sue me, this test was not part of contracted testing, and was recently conducted on a commercially purchased bottle of graphene lube\*\***

At the time of writing I can pop in the below data, however again for full information on the test and the results head to the lubricant test page to download the full test results document.

### Okey dokey – Dry road conditions;

Lubricant	Real World Km's to Wear allowance
AB Graphene Lube	1085
Silca Synergetic	778
Silca Hot Melt	531
UFO Drip V2	394
AB Graphene Wax	140

#### Dry offroad conditions;

Lubricant	Real World Km's to Wear allowance
AB Graphene Lube	440
Silca Hot Melt	343
Silca Synergetic	230
Ufo Drip v2	360
AB Graphene Wax	140

#### Extreme conditions;

Lubricant	Real World Km's to Wear allowance
AB Graphene Lube	270
Silca Synergetic	230
Silca Hot Melt	212
AB Graphene Wax	115
Ufo Drip v2	119

From personal field testing I can confirm that Hot Melt is a longer lasting immersive wax that what we are used to, I need to properly field test as well new mspeedwax formula (as well as control test – oh my test list...), however I did just complete a couple of weekends ago a 12.5hr xc marathon event, I covered 213km, and my hot melt chain was still in the silky smooth zone, it had not even started to sound / feel a bit dry. So field testing is matching pretty well with control testing results. I have previously tested Mspeedwax original formula and depending on

conditions and chain type, it would start to sound / feel dry around the 8 to 10 hour mark in dry conditions. Hot melt has the edge over mspeedwax original formula, but yep, testing the new formula is on the priority list – stay tuned.

## Test observations and review

Wow, ok well done if you are here, it has only taken me 35 pages to get to main overall review. Ha.

On the plus side, really most has been covered in the block by block performance, cost to run and single application data, so now its time for a quick (for me) wrap.

- **It does flake quite a bit on initial pedalling. I would say more so than MSW. If you have a dedicated ergo bike – consider silca ss drip to avoid lots of snow flakes.**
- **Sans the moly we are used to in original formula mspeedwax, it is cleaner on drivetrain. Already immersive waxing is one of if not the cleanest way to roll, Hot melt without the black moly involved, is the cleanest yet.**
- **It has set a new and very very low new outright wear record for main test.**
- **It has impressive longevity overall for a chain coating type lubricant and will last all but the longest and most extreme events**
- **It has proven low outright efficiency**
- **It delivers exceptionally low drivetrain cost to run figures due to exceptionally low parts wear**
- **Hot melt and immersive waxing are unbeatable with regards to day in day out low friction if you constantly ride in wet conditions, all you need to do is simply re-wax. No cleaning needed, no solvent costs, and save a shipload on drivetrain wear vs wet lubricants.**

There is not really a negative I can list here. Overall the test results I think back Silca's claims for Hot melt, and the development that has gone into it. And it is likely a hint as to why Josh has been providing this a hot melt wax service to the top world tour pro teams and athletes for the most important events on the world tour calendar for a very long time.

The only anomaly in the test was the small wear result popping up post contamination blocks vs msw which always reverted back to 0%. That's it, that's the only teeny tiny nit picking negative. Oh and that you do get an impressive amount of snow flakes on first pedals, but that is easily vacuumed up if you pedal inside, or just blows away outside.

The Sous vide bag;

I covered this on launch – this is probably one area I'm not 100% with Josh here. I think this was a solution to a perceived market hurdle re one has to go buy a slow cooker etc – but I would like to know what percentage of customers are using the sous vide bag vs just spending \$20 on a small slow cooker.

Personally I do find that getting a good swish in the sous vide bag is definitely more of a challenge, which runs the risk of a higher percentage of friction modifiers (your nano scale tungsten disulphide) sitting towards the bottom of the bag vs being evenly distributed through the wax. In a slow cooker and bit of wire bent into a swisher tool (refer wax zen master guide), it is very easy to swish the bejeezus out your chain in wax pot and you will ensure you get all the good stuff mixed in your base wax.

Also it is harder to hang chain to set and let excess wax drip back into sous vide bag vs being able to set this up at home with a slow cooker pot.

Im not sure how much extra it costs to have a sous vide bag vs just basic packaging – I imagine sous vide bag does add some tangible cost to the RRP, and if the majority of customers are not using this bag – I think it would be good to provide both options – either basic packaging as per what msw provide to keep rrp down as low as possible, as well as the sous vide bag option for those who are going to use this option. I have a feeling we are all paying some extra \$\$\$ for a special bag we are throwing in the bin. i

Also, even IF one is using the sous vide bag in pot of boiling water vs getting a dedicated little wax pot, they still don't need a new one every time. If one is doing multiple chains and find fill getting low, or its simply time to change to a fresh bag – im not sure why the original sous vide bag cannot be topped up or wax changed over with fresh wax from a basic packaged bag of wax saving us some RRP.

Despite being overall the best lubricant tested by ZFC to date, that price per bag is still a barrier for some, and not everyone will have read this review or seen the cost to run data tables to know that for the huge vast majority of riders, that pricey bag of wax will be putting money back into their pocket as soon as they start riding on Hot Melt. So bringing down that rrp a bit if possible with a basic packaging vs a sous vide, and not having more expensive sous vide bags thrown into the bin for those who do not need them as have either bought a pot or are re-using existing bag, would be something I hope Silca consider.

So lets call that a wrap (aside from me completing the ratings per section below). As mentioned above, overall this is the highest performing lubricant across the board that ZFC has had the pleasure to test. There really is not much at all I can

fault here. When you have a lubricant that smashes the record for extreme low wear rates despite harsh a lot of harsh contamination being thrown at it, everyone can attain these super low wear rates without needing to perform any cleaning intervention post initial removal of factory grease, it is super clean, it is impressively long lasting per treatment and silky smooth for a long period per wax before starting to sound & feel dry, it will last flag to flag no problems for the huge majority of road and offroad events. It is a whole lot of big green ticks and there are no red crosses on the worlds most exhaustive test assessment.

Now you can call me a bit biased if you like as I have been in camp immersive wax for a long time so immersive waxing is just a second nature doddle to me, some readers may still have reservations re jumping into the immersive waxing world and so think I am being overly positive and not taking into account that moving to immersive waxing is just a flat out no for them, it is still in the “that’s crazy” territory. I will take that criticism, whilst I am here to be 100% independent in my testing and reviews, I am still human with my own personal preferences, and I am a human who is unable to switch off my logic circuit, and sorry die hard wet lube users / absolutely must drip a lube on a chain because that’s how its done users – immersive waxing is a doddle, it is easy, it actually saves most riders maintenance time overall as you have no back end cleaning maintenance, you have no ongoing degreaser or solvent use to maintain and ultra low friction low wear drive train day in day out – immersive waxing simple resets contamination and your chain comes out of pot / bag looking brand new every time for what is a very easy task once you have done your first one or two waxings and have moved yourself into the “what took me so long to start doing this camp”.

So yes, I am biased towards immersive waxing with top known wax’s from a) logic and b) PROVEN ultra low wear rate and low friction results day in day out with no chemicals and c) It is far, far easier than non waxers think or that anti waxers



make it out to be. Hence the top immersive wax tested to date, smashing all lubricants tested before it, is going to rate rather well...

A shout out still to the O.G (original gangster) of immersive waxing, I have had many, many extremely happy years and race wins on mspeedwax, and so will be trying to get to testing their new formula as soon as I can to see if they are challenging the new kid on the block who has strutted on to the scene being all that and a bag of chips.

And please, please – do not use / follow the advice of the many you tube channels re DIY waxing. Again the cheap waxes / candles are slow, gunky, and help give immersive waxing a bad name. For those who like to DIY vs buying name brand – I get you, I like to make / fix my own stuff more often than not as well, I just do it properly. I don't make or fix anything using cheap shite for whatever I need at the time. Ie how many buy a set of \$5 hex keys to work on our lovely bikes if we like to do our maintenance, or do we buy a quality set of tools so we don't strip bolts that then become a palava to sort out?

What perplexes me sometimes when I have talked or emailed back and forth with DIY waxers looking to get advice on how to wax or how I think their blend is going (something by the way I do not have time to help with any more, im pumping out 12 to 14 hour days to keep up with inbox) is that although their cheap shite wax didn't cost them too much, many have also bought ptfе from a different seller, plus delivery, and sometimes moly or tungsten disulphide from another seller plus delivery. By the time we add up total cost of 3 separate purchases plus delivery and their ratio mix, most times its working out to more than the cost of a bag of mspeedwax, sometimes getting close to the cost of bag of Hot Melt. And if the base wax is cheap shite, it doesn't matter what fancy friction modifiers you add to it, it will be a slow, dirty, gunky shite wax.

So whilst at first blush, many you-tube video's appear to offer good advice and instructions on DIY waxing, almost always when you properly think about it as per above – it is not great, and the reason the person is on you tube espousing X is to get views and money from advertising. The more views – which they get sometimes by trying to be controversial – ie homeblend wax beats mspeedwax = more advertising money.

If you are going to DIY because you simply will never pay & support another company bringing genuinely great products to market – which is cool – I do understand, I do DIY a lot of stuff myself (just not lubricants because they honestly are too important re performance and wear of your drivetrain, I leave that to the experts. Same as I don't try to make my own bearing grease. Or tires.) – then ensure you have a proper base wax such as Gulf canning wax which is a very highly refined food grade paraffin. Please do not buy cheap shite base wax, and for the love of your drivetrain do not use candles. And yes i can promise you over the last 4 years I have converted oh so many DIY waxers to mspeedwax and or now Hot melt, and every single time the feedback is the same – it is along the lines of “oh wow, yeah that is so much cleaner. Yeah I will stick with this. What should I do with my 5lbs of candle wax...?”

## **ZFC Overall Performance Ratings**

### **Race Day Lubricant Road – 9.5/10**

I would give it a 10/10 but.... As best as I know UFO drip new formula is still a little bit faster. However, if your race is long and wet, UFO drip may not last, in which case – Hot melt is your baby.

### **Race Day Lubricant - MTB / CX – 9.5/10 to 10/10**

As above, but with its greater treatment lifespan and there appear overall to be more longer extreme offroad events such – Hot melt has a greater chance of lasting flag to flag still in the ultra low friction zone vs a chain coating drip lube where

around half of its volume is carrier. If it is xc length, then UFO drip will have no issues with treatment lifespan and in theory be a bit faster, however if the event is very long and you have concerns UFO drip will make the distance, again Hot Melt is your baby. I think I mentioned above I recently completed a 213km XC marathon event over 12.5 hours, and my Hot melt chain was still in the silky smooth zone, had not even started to make the easily identified dry sound & feel that is the easy tell tale that your wax treatment is wearing a bit too thin.

### **Everyday Lubricant – 10/10**

Hands down winner to date. If you have previously dismissed immersive waxing, I hope the above kicks some neurons along a pathway of reconsidering. Day in day out ultra low friction and ultra low drive train wear, super clean with ZERO cleaning maintenance – all you have to do is swish your chain in a pot / bag – 3.5mins total physical labour time for a re-wax. Its not that hard for some enormous benefits re always low friction and super low drivetrain cost to run. Ardent anti waxers have shut down their logic circuits in the face of overwhelming data. They often flat out do not believe the data. I have both the test data for mspeedwax & Hot melt and also years of real world athlete data (as well as my own). Believe the drive train longevity figures. Believe the ease and low maintenance. Don't fossilise your thought trains into incorrect and outdated thinking. Just because X pro mechanic showed you THE proper way to clean and lube your chain, information likely passed to them in circa 1990, doesn't mean you have to stay in 1990 too. From the days of Friction Facts to now with ZFC testing – things have changed. Its 2021, beware advice from those who have not kept up with lubricant performance results for a couple of decades or more.

### **Harsh Conditions Lubricant – 10/10**

It does not really seem to matter to hot melt if it is dry contamination, wet, or extreme, it just delivers extremely low wear rates for the conditions, and is the longest lasting immersive wax tested to date.

### **Single Application for Long event – 9/10**

Losing 1 point to Absolute Blacks Graphene lube which has unrivalled single application longevity, Hot melt has still demonstrated that it is impressively long lasting per treatment and there would be very few events globally that will exceed a hot melt treatment lifespan – a 24hr mtb event you would want to switch chains / add lube around halfway conditions depending to be safe (changing chains is better if you have a good pit crew who can do whilst you grab a bite / put lights on etc). Aside from Absolute Black Graphene lube, I do not know of any other lubricant that could go flag to flag in a 24hr event without notable increase in friction in latter half / third / quarter , so Hot melt is not losing anything to any other lubricants here – even known long lasting lubricants such as Smoove or Squirt.

It also loses one point to Silca's own Synergetic re outright longevity for road – Synergetic is extremely long lasting per treatment and in dry road conditions shows extremely low wear – so for events like Indian pacific wheel race, RAAM etc – Synergetic may get the nod here.

But still, its up there – 9/10 aint to be sneezed at. Smart riders doing such events would start with Hot melt chain and then add Synergetic as needed for remainder of the event. Synergetic handily comes in a very small bottle, easy to pack.

## Pictures From test



End of main test at 6000km – you will have less build up on chain rings than this, the standard test protocol had re-waxing more frequently than would be required in your real world riding, and that excess can be brushed off with a stiff brush in all of 30 secs if you do end up with more excess than you want. It is a very easy brush off clean, as opposed to concrete like waxes (Wend wax).



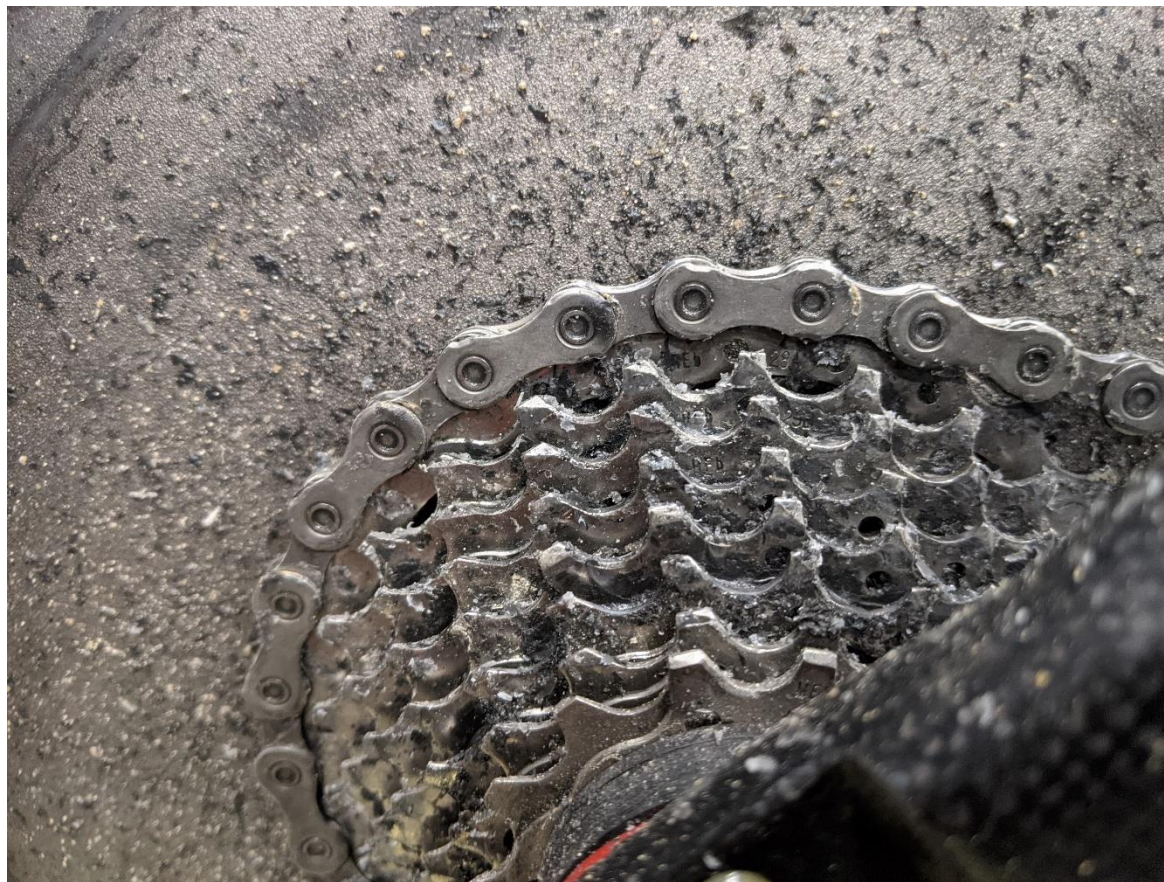


You can see the chain itself, again after 6000km of testing and a lot of contamination thrown at it, still looks brand new, with ZERO cleaning. And, at the end of all of that, it had only used up 1/3<sup>rd</sup> of its wear allowance.



For fun lets compare that to the chain from the worst lubricant tested to date, Muc-Off Nano, which had used up 145% of its wear allowance after just 2000km. Can you spot the difference.....





Again more build up on cassette here than what you will likely get re-waxing when you need to vs sticking to a controlled re-lube/ re wax protocol. You can see that with a smart trainer, the excess wax flakes do stick to the flywheel and kinda melt on as flywheel gets warm. Hence IF you have dedicated ergo bike, Silca SS Drip will be much cleaner. Outside, the excess flakes just blow away. Easiest way to clean if you do end up using a lot on ergo is just boiling water to melt them and wipe off.





Same again re jockey wheels – again your own bike will look a lot cleaner as this has been hit with a lot of contamination and water spray throughout the 6000km test which just makes this more messy – these photo's are at the end of the extreme contamination block so you can see contamination on derailleur guide tab etc which makes this pic look more messy than what you will experience.

Ok Below is my personal mtb drivetrain post the 213km XC marathon event using Hot Melt. Overall this drivetrain is now 3400km old, and I have never, ever cleaned the cassette except for jet wash post full mudders. Over the last 3400km this drivetrain has been running either mspeedwax, hot melt or silca ss drip. Again ZERO cassette cleaning and that is how it looks after a couple of years of mtb training and racing. No solvents, no cleaning maintenance time aside from what is needed to clean bike overall post mud rides, cassette is measuring basically zero wear (you can track cassette wear by measuring distance from tip to tip of cassette teeth with digital calipers. Hard to beat. Just, extremely, hard to beat. Most mtb drivetrains do not look like this after 3400km of hard training and racing with no cleaning....

