

Zero Friction Cycling



That Oz Cycle Video.....

Ok, so many thanks to Oz cycle for producing yet another poorly done test video, leading to many cyclists to question Mspeedwax and look to home blend waxing.

To be fair, many home blend waxing products, including the ones shown in Oz cycle video's – will perform much better than many big brand name lubes sold at LBS.

However the video of his home wax vs Mspeedwax needs a number of key points and miss-information cleared up.

In summary in his video he tests his home blend wax vs Mspeedwax, and finds that;

- His home blend wax had lower wear rate
- The mspeedwax chain had metal particles present in container after cleaning
- The mspeedwax chain has some spot rusting

- He concluded not only that his home blend wax was better, but also postulated (rather astoundingly) that the molybdenum in msw was possibly corrosive and causing the higher wear and presence of metal particles.

The test;

Oz cycles test consisted of him riding both chains for an equal amount of real world training km's. This may sound like a fair test, however in any proper test – key components need to be controlled.

A chains wear rate on a particular lubricant will depend on;

- What level of contamination is introduced when in chains lifespan
- What load is the chain subjected to
- What are the re-lube frequencies? Does this take into account conditions / manufacturer recommendations?

ZFC test the key variables are tightly controlled. Intervals are the same length, the same load, the same amount and type of contamination is introduced at the same points in each test etc.

Real world testing is actually very poor testing. In my time I have tested 9 chains with the same drip lube, same chain - in my ride training and attained anywhere from 4000km to 6,500km to 0.5% wear. That is a variance of 62.5%.

ZFC controlled testing has demonstrated maximum variances of around 5%.

Next – a little bit about wax. Not all wax is the same, at all. Cheap paraffin / candle wax contains a high mineral oil content. The wax base for Mspeedwax is Lab grade paraffin which is refined down to almost zero % mineral oil content. It is so clean you can literally eat it (it is also referred to as food grade paraffin). You cant eat cheap paraffin / candles without some nasty side effects.

The extremely clean nature of lab grade paraffin means that the wax is a) faster, b) much cleaner. Cheap paraffin / candles with their high mineral oil content do become gunky and dirty relatively quickly, and make the wax in pot dirty quite quickly.

We do not know from the Oz cycle video how often he changed his home blend wax / re-wax intervals etc.

However, the high mineral oil content in cheap paraffin does give that type of wax a LONGER treatment lifespan as it is coating chain in a mineral oil. Lab grade paraffin is a “shedding” type wax, it will wear off / abrade off faster, and it does not leave an oily coating on chain.

If one does a wet ride on lab grade paraffin and leaves chain, you do risk some oxidation or spot rusting, as there will be no oily protection left on outside of chain.

With Mspeedwax re-wax frequency is important, as is taking care of chain post wet ride.

Having extensively control and field tested mspeedwax (I have completed over 100,000km of mspeedwax use across road, tt, mtb and cx / gravel riding and racing), I have;

- a) Never had a rusted chain because I simply swish chain in boiling water when I get home, dry and pop in pot – 5 min job. A heck of lot easier than cleaning a drip lube chain post wet ride with solvents.
- b) Never ever had any metal particles present

And c) – Remember I prepare fully optimised race chains as well as re-optimize race chains brought back / sent back to me from top level athletes all over the country for re-optimisation – I have never once seen metal particles. Race chains are heavily race powdered with molybdenum and ptfе mix.

From my somewhat extensive experience in waxing, lubes, chains – why did Oz Cycle obtain greater wear with mspeedwax chain?

Quite simply he ran chain too long between re-waxes. This is why chain showed some rusting, and this is why he had metal particles present. He simply ran out of wax on a treatment/s and was running for x period on some rides metal on metal inside the chain.

It is also worth noting at his point that whilst Mr Oz showed him taking great care with end of test wear measures, I do not believe he took a start measure. This is critical to ensure you obtain a net wear measure. Shimano chains typically measure from 0.05 to 0.15 above base zero point when new. A difference of 0.1mm per 10 links is equivalent to 20% of one's total wear allowance of 0.5mm. Not taking a base start measure before any test is again a very poor level of test protocol.

Why did Oz cycle blame Molybdenum for the wear / presence of metal particles?

On Oz cycle knows that one. Moly is used extensively in industry as a friction modifier, it is even used in some jet aircraft engines. If it caused corrosive wear of metal, that would be somewhat of an issue..... That would be known, the issue would be easily found on the internet, moly would not be used in industry as extensively as it is – Honestly of all the rubbish I've seen on you tube – that particular conclusion is up there.

Again – I have over 100,000km of personal mspeedwax experience, I have thousands of customers on mspeedwax, I have extensive experience and many athletes on race chains – I have never ever ever seen metal particles post ultrasonic cleaning to re-optimize mspeedwax chains.

This is again another video that appears on the surface to be in depth testing with valid conclusions and outcomes, but if you can find me one proper scientific test where ALL the main variables are left completely un-controlled such as this test, let me know.

You may have seen another Oz cycle video re waxing where he is standing by his slow cooker pot with a thermometer waiting for the wax to cool down to near 60dg Celsius (wax solid set point), he then removes chain and dunks it in cold water to “lock in as much wax as possible”.

Pressures inside chain from rider load reach into the thousands of psi. Locking in more wax just means more excess wax pressed out and flaking off making a big mess. After 10 mins of riding you will have the same amount of wax inside chain doing Oz cycles method – which would be boring and laborious indeed, vs just hanging chain to set after removing from pot at 90 degree’s Celsius and hanging to set on a 40dg day.

In short – Oz cycle has – in my personal opinion not a statement of fact, a very poor understanding and knowledge re immersive waxing. His testing leaves much to be desired, and his conclusions I believe are guesswork at best.

“But he doesn’t sell his home blend wax so he has no vested interest in the results?!”

Yes he does. The more controversial his test video, the more shares, the more views, the more subscribers, the more money from advertising. Remember if he is not making money from a product, you are the product he is making money from.

Sadly there is more voodoo and miss-information about immersive waxing on the internet and you-tube than pretty much any other cycling topic I can think of, and the last thing we need is a relatively high profile channel pumping out more terrible information / miss-information.

I would probably be asked to test one of around 4.7billion different home blends of wax per week, including lanolin blends, bee’s wax blends, car polish wax blends and on and on.

I am often asked why don’t I just test Oz cycle wax? (I did offer this to steve of Oz cycle, he advised he was sending some over, he never did). Firstly, knowing a bit about wax, I already know what the answer will be within a pretty decent ballpark. It will be good, but dirtier, gunkier and higher

efficiency loss vs mspeedwax. Remember Friction Facts / UFO did a fair ol bit of testing on wax when developed the first ever race chains. I also see MANY home blend wax jobs through the workshop, and excuse the pun, they do not hold a candle to mspeedwax.

Unless the base of the wax is lab grade / food grade paraffin, there is no point testing a home wax. It will be some variation of being a pretty decent chain lube, it may well last longer per treatment and provide more oxidation protection than mspeedwax, but simply use mspeedwax as per instructions and the difference over time re cleanliness is night and day, as will be the wear rates and low friction running.

It is also worth noting at this juncture a few other very important points.

- MSW and Friction facts tested to find optimal ratio of PTFE and Moly to add to lab grade wax, above which adding more didn't produce a viable reduction in friction for the cost. Oz Cycle recommends to add 50 (FIFTY!!) grams of ptfе. Holy batman.
- When you source wax and ptfе from anywhere on the internet, you really do not know what you are getting. Ive even had some customers who never even received their ptfе from china despite ordering multiple times. And if you do get it, will particle size be correct etc?
- I have covered cheap paraffin, but candles are often way worse again as they can contain soy wax and / or palm oil.
- Sourcing multiple ingredients from multiple places often incurs multiple shipping costs. Just how much are you saving really vs simply a proven extremely high quality product that has probably been the most tested and proven chain lubricant known to date?

One may note that the newly released Silca Hot Melt wax also uses lab grade paraffin. Have a ponder why they do not use cheap as chips paraffin or candles.

What is also disappointing is that Oz cycle did not contact neither myself nor mspeedwax for input after his test results – he just runs to press with his rather stunning results and conclusions for more clicks and shares. I feel strongly that anyone in the testing space, putting themselves forwards as a responsible and reliable test – has a strong responsibility for the accuracy of the test results, conclusions and content they release as it may be seen by and influence the decisions of thousands of cyclists. It may unfairly damage the reputation of some honestly very good companies and products.

When I do a test, I contact the manufacturer with regards to my results – most especially if the test has gone poorly, to give them a chance to help me understand the results (the one exception being white lightning epic ride, that had already been established before my testing as terrible by friction facts – it was just tested as part of obtain base control data to help benchmark other lubricant tests).

Thanks to Oz cycle video's, I am the one left to frequently answer questions re his bodgy testing, wax instructions involving standing over your wax pot with a thermometer and some cold water, and

switch people over from a gunky messy not quite as hoped, very time intensive wax experience using candles, to a proper immersive wax experience with mspeedwax.

Honestly, it is pretty annoying. There is enough miss information out there already without someone playing at providing reputable information and in depth testing when all they arrive at is terrible inaccurate testing and pure guesswork re conclusions.

ZFC works very hard to improve the level of information available so that cyclists can make the best decisions for themselves that will save them friction, wear and running costs, and maintenance costs. Against the already powerful marketing behind a lot of truly terrible lubes and the amount of rubbish on you tube – it is like trying to turn the titanic with a paddle already. The last thing anyone needs is another higher profile video channel pumping out rubbish.

Sometimes you really do get what you pay for.

Oz cycle needs to up his game from simply putting in a huge amount of time and effort into his tests which is what wins him a lot of fans, to simply turning on a lot more neurons and raising the quality of his testing and information. Take start measures. Control key variables. Research conclusions / postulations thoroughly and contact relevant parties for information. These are the absolute basics of any test, and he missed every single one of them.

You can help the fight against miss-information by sharing this document to all of your cycling friends, and ensure they know where to go for proper independent information from an extremely robust peer reviewed control test protocol that is widely referred to in industry, and widely used by some of the biggest name manufacturers in the industry to bench mark their lubricant performance during development stages.

ZFC is fiercely independent and uses control testing to decide what to stock and what to not. This has brought a strong retail side to the business with as best as I can tell 100% customer loyalty and retention because every purchase is for a robustly proven best in class product. This then funds the testing side of the business, and if a better product comes out, it will replace an existing product line, ie when Smoove replaced Squirt.

Testing to find and stock the genuine best in class products which then funds further testing has proven to be a very successful business model where everyone wins. You are not the product, the genuine best products known are the products.