

### How to apply Wax or Wet Drip lubricants

This may seem basic, and in many cases it is, in other cases such as some wax drip lubricants that have significant penetration issues – ensuring proper application of your chosen lubricant may require a bit more attention than you thought.

Also, in case your lubricant application had moved off into a strange direction thanks to Instagram marketing or cycling forums on chain lubrication which typically still contain a lot of bonkers input – hopefully this guide will get you back onto what you should ACTUALLY be doing.

Please use this lubricant application guide in conjunction with lubricant maintenance guide which can be also be found in the instructions tab on Zero Friction Cycling website

https://zerofrictioncycling.com.au/

### **Quick Marketing Bullshit cover off.**

<u>Skip to Wet lube application – Page 5, or Wax lube</u> <u>application – Page 10 - if below is of no interest</u>

First I need to knock out a couple of pervasive marketing concerns in this space – in case you have been following one of these paths.

**UV light (Muc-Off)** – using a UV light to ensure all of the OUTSIDE of your chain is coated in lubricant is a horrendous idea. You need lubricant inside your chain. The outside should be as free of drip lubricant as possible as this just attracts so much more contamination. More contamination = more abrasive friction = more chain & component wear.

**Ceramic Lubricants** – There are not many ceramic lubricants on the market as a general product type, however there are a couple of high profile ones (Muc-Off C3 Dry and C3 Wet, Finish Line Ceramic Wax). I have just released a marketing spotlight document (latest news section) covering ceramic lubricants and claims so I wont re type a lot here – in summary I will say there is, in my opinion, a very very large lack of evidence to support that ceramic lubricants remotely match claims re coating the wear surfaces of chain in a ceramic coating that prevents / reduces wear. Refer to this topic covered in latest news for deeper investigation and information.

**Aerosol lubricants** – why? That is just a really inefficient application method that ensures a lot of the lubricant ends up not going onto your chain. If I had a method for your tire sealant that ensured a good portion ended up on the floor.... Would that option appeal to you? Get a **proven** top drip lubricant that you can drip efficiently onto the chain. The wasteful nature of aerosol and higher cost to make an aerosol vs liquid in a bottle greatly increases cost to run over time. Even if your wear rates on that lubricant are ok, you are paying A LOT more over time in lubricant cost vs its equivalent in a drip lube bottle. Aerosol makes no sense for bicycle chains.

**Traditional** – "Dry" lubricants like Finish Line Dry, Muc-Off C3 Dry, White lightning clean ride etc. They just contain too little lubrication by volume and typically deliver very rapid chain & drivetrain wear rates.

**Really bad stuff you see on Instagram or similar.** Not all products advertised on Instagram are terrible, or just not great – however far too many I see are just really bad. Mostly it seems that the products are aimed at the cycling demographic who know near zero re the running of

their bike and drivetrain, and so the marketing is able to fill that lack of knowledge with their invented knowledge, taking advantage of a marketing angle that will likely lead to quick sales on products with very high yields. This is true across pretty much all consumer product demographics – there is a lot of really predatory marketing on Instagram & similar for clothing, household goods, everything really. My recommendation is to not buy anything you see advertised on such platforms without doing some solid google reviewing from multiple sites and multiple REAL world user reviews. A lot of companies marketing on insta will also being paying a stack of people to say amazing things about the product – so you really should do some due diligence, and check with known INDEPENDENT reviewers of products in that category, as well as ensuring your own logic circuits are switched on – before pressing go. Over the years I have bought a few things from flashy marketing from insta (clothing, toys etc) just for fun and to see, and there have been some hits with some genuine great products and I have been really happy to find a great company in that area I didn't know about before, but mostly they are big misses with terrible quality and no service – the entire set up is to make quick bucks off flashy marketing.

In some cases, really there would be no shortage of companies on insta executing something close to a consumer scam where what is shown that the product can do vs what it actually is and can do are just not even on the same planet, and these companies exist to make enormous margin off people who do not do their homework – always going to be plenty of those.

Don't you be one of those.

Terrible information on cycling forums re chain lubrication and maintenance. Insert a deep sigh here. This will be an area I tackle in future when I can, but for the most part – reading forums on chain maintenance, it is just.... Really bad. So, so bad. There are of course some coming in with solid input, but oh so much of it is X person stating they find X product to brilliant, or Y maintenance process but of course there is zero tangible data to support such a claim, and often the recommendations can be for known terribly high wearing products etc, or using candles for DIY waxing – and I am scratching 1% of the bad information surface – forums on chain lubrication are really fraught with a lot of terrible information or just completely unsubstantiated information – you shouldn't follow either of those things.



Please – No.



Please – No.

# **Wet lubricant Application**

Typically applying wet lubricants is very easy. I have not really come across wet lubricants that have initial penetration issues – there have been some, but not something you generally need to worry about.

There is some very terrible advice from some channels that one should NOT remove factory grease (thanks GMBN – great job. Alas they are far from alone) as that is the only time the chain can be fully / properly lubricated deep inside.

This is extremely incorrect. Whilst a number of wax lubricants DO have penetration issues to get deep inside the chain, for wet lubricants this is not an issue. Your chain is not water tight – correct application should pose zero penetration issues.

Main issue with wet lubricants is **OVER** application which attracts a lot more contamination. The other main issue is using wet lubricants in off-road / dust conditions, which – with few exceptions – it is a complete mismatch of product to purpose to run wet lubricants in the world of dirt and dust.

(Wet lubricants tested to date as not terrible offroad are Rex Black Diamond, Silca Synergetic, Revolubes, Silca Synerg-E – however they are still multiple times greater wear rate vs proven top wax lubricants. For other wet lubricants tested it mostly ranges from - not great - to just eating your drivetrain, as they absorb so much contamination so quickly – in general – every particle of dust will stick to a wet lube chain and become part of the lubricant – this is just physics – you can test this – get something and sprinkle dirt over it, then shake it. Repeat after wetting the same object. Things will be clear).

The best wet lubricants tested to date provide outstanding low friction, low wear lubrication whilst requiring VERY LITTLE actual lubricant to be applied. This is also much cleaner for your drivetrain (at time of compiling this document the top recommended wet lubricants are Rex Black Diamond, Silca

Synergetic, Revolubes, Silca Synerg-E. No doubt there are others, I just haven't been able to test them yet).

#### **General best practice for wet lubricant application is;**

Follow chain prep guide to remove factory grease.

Have the chain in a large cog, large chainring for maximum opening of link parts.

Shake bottle vigorously - Apply one drop per roller on the bottom span of the chain.

Back / forward pedal at least ten times in the largest cog & large chain ring.

Back / forward pedal at least ten times in the smallest cog & the small chain ring for maximum link articulation.

**THOROUGHLY** wipe excess lubricant from outside of the chain with an absorbent cloth (ie microfiber).

The above steps are really BEST PRACTICE for initial application on a perfectly cleaned chain, or <u>post cleaning maintenance</u>. For normal re lube – just apply a drop per roller in any gear, back pedal 10 times to work in and thoroughly wipe excess. Easy as.

Some extra best practice tips on re lubing below;

**Ensure wipe excess lubricant from outside of the chain each ride** (or at least before the next re-lube).

If you are riding off-road / beach roads etc where abrasive dust is likely, spray some alcohol onto your cloth (methylated spirits, isopropyl etc) before wiping chain to help lift off contamination vs wiping contamination in. Finish wiping with dry part of cloth. Ensure this is done before the next re-lube, or abrasive dust on the outside can easily be dragged inside to main load / wear surfaces – which is bad. Get to know lubricant treatment lifespan for your riding. Over application of wet lubricant leads to a very externally wet chain, which will attract much more contamination much more quickly. A very good wet lubricant can still deliver higher than desired friction and wear if it is overapplied, thus greatly increasing its rate of contamination gathering.

When the chain starts to sound and feel a bit dry – it is time to re-apply. Err on the side of re-apply before long rides if unsure – just wipe off excess. Lubricant treatment lifespan will be fairly unique to YOU. Your average power, average speed or kms attained for that power, amount of high intensity intervals, amount of contamination, type of contamination etc etc – will greatly impact a particular lubricant's treatment lifespan. Same lubricant could be 400km for you, 200km for someone else, 800km for another. Get to know it over time for YOU. This will enable you to really fine tune re having perfect low friction lubrication, without overapplication and wet mess gathering contamination, or running too dry and risking higher friction and wear.

Ensuring excess is wiped clean post or pre each ride for wet lubricants really helps – takes 10 secs, get into the habit.

Follow the Maintenance Guide (instructions tab) with regards to maintenance intervals and options. Periodic maintenance is essential to maintain low friction low wear running. Remember your chain is your hardest working mechanical part by orders of magnitude vs your bearings, and your bearings get to run in a lovely sealed environment. Your chain and its lubricant is COMPLETELY exposed to the environment. Due to very small part size, surface load pressures are extremely high. Lubrication of your humble bicycle chain is actually quite an extreme challenge – rarely is such a hard working part in a machine just completely exposed to the environment. If you let your chain become high friction, remember it can take out with it much more expensive components such as your cassette & chain ring/s. Not cool, and absolutely avoidable with just a little learning and a little attention.

### **POST WET RIDE CARE**

ZFC STRONGLY recommends some level of flush clean maintenance post ANY wet ride – **if this is practical.** If it is not (ie - you ride almost every day in wet conditions) – balance maintenance time / maintenance cleaning cost vs the friction & wear increase to components of not doing.

Just remember, the water will run right through your chain, the abrasive contamination it brings in with it will be brought deep inside the chain and become part of the lubricant as it is pressed in at very high pressures from your pedalling load, deep in the chain on main load & wear surfaces. No lubricant film / membrane / coating is strong enough to prevent abrasive contamination from being pressed through and abrading / wearing on high load surfaces causing friction and wear.

If you do not remove this contamination, it is not really going anywhere. Some lubricants do offer some minor level of flush cleaning on re application, but note - this is very small. Typically – depending on the lubricant – an application will be between 1 & 5ml. Most chains are over 100 links long, so this is less than 0.01 to 0.05ml per link. There is only so much flush cleaning this can achieve, vs performing some actual flush cleaning maintenance to reduce / reset abrasive contamination. A relube post wet ride will help reduce wear as you are going to flush out a small amount, but in such a hard working part even small differences multiply out to a tangible friction & wear difference – as well as improving the ratio of lubricant to contamination. However it is very important to note that this ratio will continue to degrade if you just keep riding and re-lubing without doing some maintenance to properly flush clean and reset. Or if you cannot properly reset, any level of reset intervention is beneficial vs none.

Again YOU need to find the balance based on the conditions you ride in, and the cost of your components. If you ride 10spd Tiagra, sure, maybe it's not really worth worrying too much, the cost of frequent maintenance could quickly add up to more than the replacement cost of some of the components. Just keep an eye on chain wear and replace the chain by 0.5% max.

 However if you have expensive components – in ZFC opinion it is NUTS to not be on top of ensuring your lubricant is remaining low friction and wear. With many cassettes costing hundreds of \$\$, and chain rings even more – factor in your riding and consult the Maintenance Guide – Instructions tab.

Again if you want a partial idea of what is happening inside your chain, take the seals off all of your wheel and bb bearings and go for a solid wet ride, and then see how they are feeling the next day. Silky smooth? Or Gritty, rough and notchy? Would you keep riding your bearings like that or are you going to flush clean them and re-grease?

Remember for your chain it will be MUCH worse as it is - a) performing VASTLY more workload and at much greater load pressures and - b) it is much more exposed vs your bearings.

DON'T underestimate the cost to run difference between running a Proven top lubricant choice FOR YOUR RIDING, proper application and some basic maintenance, vs.... not doing the above.

- For one, life is too short to ride around on high friction / high wear chain & drivetrain when this is easily avoided with just a small amount of knowledge and a maintenance plan that suits.
- For two cost of run difference can EASILY be hundreds or even over \$1000 per 10,000km cycling. What is more fun to spend your hard earned money on? – That new helmet, or glasses, or kit, or jacket for winter, or shoes, or any number of cool fun things – vs spending that money burning through drivetrain components at 2 or 3 or more times the rate – a rate you could easily avoid. I know what I prefer to spend my \$\$ on!!

### Wax Drip Lubricant Application

Alrighty – a lot of what is typed below is going to be cut and paste from above, as there is a lot of cross over – at the end of the day, we are just applying a lubricant to the chain.

#### What differs for applying wax drip lubricant vs wet drip lubricant?

SOME wax drip lubricants may have significant initial penetration issues. Some have zero penetration issues. If your lubricant does have penetration issues, the recommended application process is more involved for initial application post proper chain clean (factory grease removal or maintenance clean).

Almost all wax drip lubricants have a set time. A key advantage of many wax lubricants is that they set to more like a paste / semi solid, or even a proper chain coating (close to solid). This has vastly greater dust contamination resistance vs wet lubricants. However if the set time is not observed and you ride the lubricant wet, you will have the contamination gathering of a wet lubricant (and other aspects wont work as designed such as it may not be as low friction / speedy as there may be some viscous friction that may be absent when it is set).

- Take note of manufacturers instructions and allow that set time AS A MINIMUM.
- Many wax lubricants use water as the carrier fluid, which then evaporates leaving the wax behind inside the chain. Set time will vary based on temperature and humidity. Allow more set time if it is cold, or humid, or both.

Over application of wax lubricants typically doesn't risk a rapid increase in contamination gathering and wear which is more a more prevalent issue for wet lubricants, however some wax lubricants if over applied can really gunk up. Aside from being unsightly, in worst cases it can affect shifting performance if too much excess wax is built up gumming up pulleys, cogs and the chain.

For the wax lubricants that DO present significant initial penetration issues, this may or may not be much of an issue for you. If you only ride dry road conditions, a good wax lubricant has such high contamination resistance, that such riding presents little trouble for the lubricant. As such, maintenance intervals can be very infrequent (thousands of kms). \*\* Note this refers to cleaning maintenance - observe re lubrication recommendation frequencies for the lubricant by the mfg / zfc product pages\*\*

However, if you frequently see wet conditions and as such should be resetting the contamination the water trucked right into your chain, then getting past the penetration issues each time will be a time consuming pain indeed.

Due to the time every test takes, ZFC most certainly does not have a deep compendium on what lubricants have penetration issues and which do not. I will list the known below. If your chosen wax lubricant is not on this list, I would assume a significant penetration issue approach until proven otherwise.

The initial penetration issues seen are not trivial. I certainly do not want to list a product as having penetration issues, and advise you to undertake a whole bunch more faff to try to negate, if the issue was not clearly seen in testing.

- The issue makes itself present by notably high wear rates in the initial phase of the main test. If there have not been penetration issues, initial wear rates should be very low.
- The issue also presents itself by demonstrating a reduction in wear rate as the test continues, as opposed to the expected increase in wear rate as the lubricant performance is compromised.
- The issue also presents itself when initial wear rates are compared in the same test AFTER the lubricant has been applied via immersive application or advanced application technique.

- Lubricants listed to date WITH initial penetration issues have tested in block 1 of main test with wear rates between 19% and 22% (basically 1/5<sup>th</sup> of chains recommended wear lifespan).
- The same lubricants after following advanced technique have had this wear rate reduced to 10% to 12%
- The same lubricants applied via immersive application have all recorded sub 5% wear results.
- Wax Drip lubricants <u>WITHOUT</u> initial penetration issues have recorded initial wear rates of 5% or lower when applied normally via manufacturer instructions.

Remember from the Friction Facts testing where lubricants like Squirt performed very impressively – well, all of that testing the lubricants were applied via ultrasonic at 38dg Celsius. Friction Facts wanted to eliminate the penetration variable, as he was not testing penetration, he was testing the performance of the lubricant assuming the chain was perfectly lubricated.

# Wax drip lubricants with ZERO penetration issues – apply as if it was a wet lubricant, just observing set times.

- Silca Super Secret Drip Lubricant
- Ceramic Speed UFO drip
- Effetto Mariposa Flower Power Wax
- Tru-Tension Tungsten Race Lube

#### Wax drip lubricants with moderate penetration issues – refer to advanced application technique covered further in the document.

- o Tru-Tension Tungsten All weather
- Session Components S-wax

Wax drip lubricants with SIGNIFICANT penetration issues – refer to advanced application technique covered further in the document.

- o Squirt
- o Smoove
- Allied Grax
- o absoluteBlack Graphenlube

Wend wax - \*\*I will quickly cover the issues with Wend rub on wax at the bottom of the document. ZFC's strong recommendation is to AVOID wend wax\*\*

## Advanced Application Technique – Wax lubricants WITH penetration issues.

Initial lubrication post full chain clean (factory grease removal, maintenance flush clean)

Follow chain prep guide to remove factory grease Place the bottle of lubricant in a cup of hot TAP water (**not** boiling water). Heat chain with hair dryer or heat gun for approx. 2 mins IF ambient temp of chain is below approx. 20dg Celsius. If the chain metal is cold, heating lubricant will not be very effective as it will instantly cool to the temp of the chain metal on contact.

Have the chain in a large cog, large chainring for maximum opening of link parts.

Shake Bottle vigorously - Apply one drop per roller on bottom span of chain

Back / forward pedal at least ten times in largest cog & large chain ring for maximum opening of link components.

Apply one drop per roller on top span of chain

Back / forward pedal at least ten times in the smallest cog & the small chain ring for maximum link articulation

**THOROUGHLY** wipe excess lubricant from the outside of the chain with an absorbent cloth (ie microfiber)

Allow set time specified as a minimum – in general this means applying wax lubricant at least night before ride.

**Bonus Tip** - A number of wax lubricants can benefit from repeating the above AFTER the initial coating has set. This may result in a notable increase in treatment lifespan. With a wax drip lubricant there is only so much you can apply before it just starts dripping onto the floor. A bit like spray painting – multiple coats is how you build more paint on the surface vs trying to do it all at once.

This tip is generally not necessary, however, as it is a best practice guide – double application with some wax lubricants can yield benefits in treatment lifespan – which may be of use if you have a particularly long ride planned, and if the chain has just been fully cleaned so there is no previous layer being added too. This is especially so for a product like Silca SS drip that is pretty slippery and starts to drip off chain onto floor as soon as trying to get too much onto chain, and will be a less noticeable difference for other lubricants where a heavier application is able to be done. Follow the chain maintenance guide re what to with your chain and choose the wax lubricant going forwards after initial prep and advanced application technique.

#### I want to apply my wax drip lubricant immersively – how?

If you have one of the above, or an untested wax drip lubricant, and you want to take the safest approach post clean and apply immersive, it is pretty easy if;

Lubricant has a removable nozzle.

You have or can get a 250ml to 500ml screw top or click lock container and a small funnel.

From there;

Put CLEAN chain into container

Remove the nozzle and pour lubricant into the container.

Again it will help if the chain and lubricant are above 20dg Celsius Shake vigorously in all directions, then gently in all directions to avoid air bubbles.

If the lubricant volume did not submerge the chain, flip the chain over and repeat.

Remove and use fingers running down the chain on all sides to get as much excess back into the container as possible.

Wipe excess THOROUGHLY with absorbent cloth and hang to set. Pour lubricant back out of the container via a small funnel into the bottle.

Do not leave in the container – some wax drip lubricants are fine, some are not, and the extra air exposure in the larger container will cause the lubricant viscosity to become far less viscous than desired.

\*\* Although not a lubricant in this section as it does NOT have penetration issues, please not **you cannot immersive apply UFO drip**, as even decanting back into bottle, the amount of air exposure in the process will cause UFO drip to become much less viscous and future applications may have issues.

## Wax lubricants WITHOUT penetration issues.

Alrighty things are pretty easy here – it is basically same as wet drip lubricant application, just observing the lubricant's recommended set time

Follow the chain prep guide to remove the factory grease

Have the chain in a large cog, large chainring for maximum opening of link parts.

Shake bottle vigorously - Apply one drop per roller on bottom span of chain

Back / forward pedal at least ten times in the largest cog & the large chainring.

Back / forward pedal at least ten times in smallest cog & small chain ring for maximum link articulation

**THOROUGHLY** wipe excess lubricant from the outside of the chain with an absorbent cloth (ie microfiber)

Allow set time specified as a minimum – in general this means applying wax lubricant at least night before ride.

## \*\* Repeat section from above – in case scrolled past to the is point in document\*\*

**Bonus Tip** - A number of wax lubricants can benefit from repeating the above AFTER the initial coating has set. This may result in a notable increase in treatment lifespan. With a wax drip lubricant there is only so much you can apply before it just starts dripping onto the floor. A bit like spray painting – multiple coats is how you build more paint on the surface vs trying to do it all at once.

This tip is generally not necessary, however, as it is a best practice guide – double application with some wax lubricants can yield benefits in treatment lifespan – which may be of use if you have a particularly long ride planned, and

if chain has just been fully cleaned so there is no previous layer being added too. This is especially so for a product like Silca SS drip that is pretty slippery and starts to drip off chain onto floor as soon as trying to get too much onto chain, and will be less noticeable difference for other lubricants where a heavier application is able to be done.

Follow the chain maintenance guide re what to with your chain and choose wax lubricant going forwards after initial prep and advanced application technique.

If you wish to know about applying lubricant via immersive application – scroll up a couple pages it is covered there for the wax lubricants that have penetration issues. It is not really going to be much benefit for wax lubricants that do not present penetration issues – however, it may still have some small benefit.

# Post wet ride care

I have covered this – scroll to page 7 of this document – overall it is the same EXCEPT there is the additional information with wax drip lubricants that;

In general there is lesser / no flush cleaning with wax lubricants as the coating on the chain is set. Contamination pressed in is effectively land locked in the set coating, and isn't going anywhere unless you remove it. Adding more lubricant helps as you do improve the ratio of lubricant to contamination, but this ratio will continue to degrade quickly if you frequently ride in wet conditions .

Typically the new application will not "un-set" the existing coating to flush contamination that is pressed in out. You need to intervene or it can be that your next ride in the sun is from your chain wear perspective not that much better than if you were still riding in the wet. So wax lubricants have the advantage of in general providing MUCH MUCH greater contamination resistance in dry dust conditions - making them the go to choice for off-road riders (as covered in wet lubes section - wet lubes and offroad is just a complete mismatch of product to purpose overall with VERY few exceptions). In wet conditions – all lubricants are going to suffer big time. Some wax products may do better than a bunch of wet lube products until treatment is abraded off, some wet lubricants can demonstrate a greater ability to not be washed or abraded off – but ALL need attention after such a ride. You should factor in what product and what maintenance is the right way to go for you, after checking the lubricant test data, and the maintenance guide for your riding. Don't over stress or over think it you don't have to arrive at that absolute optimal never ever going to change lubricant option TODAY – review the resources, consider your riding, consider your maintenance ability / preferences, try a proven top product that you believe will match, and then assess over time. If it is all yeehaa, then yeehaa. If you think another option may do better next chain, try that next chain. I am trying to chip away on a lubricant choice matrix to help consolidate a lot of info directed specifically to help re this decision – but eta is TBA (maybe it's there when you read this...check! ()



Why do I have issues with wend wax?

Ah I wish I had taken screenshots of their website when I initially reviewed the product, as that just really set the scene.

Wend launched with "rub on wax and have a race ready chain in seconds"

The reality, obviously (albeit, alas for many, not that obvious), is that if you rub a SOLID on the outside of your chain, you have no lubrication inside your chain.

Many of the great reviews for wend, it appears it has been rubbed just directly over chain as is – so it is factory grease / previous lube doing the lubrication, not the solid sitting on the outside of your chain.

If you don't believe me, that's fine. You explain to me the physics of a solid rubbed on the outside providing lubrication to the key load surface of the pin and inner plate shoulders deep in the chain that even many liquid wax lubricants struggle to reach.

No it does not matter how much you massage it in.

#### So I don't type pages, let me summarise things.

If you rub a solid lubricant on the outside of your chain, you have a solid lubricant on the outside of your chain, and no lubricant that you rubbed on deep inside your chain where you need it.

In the initial test – cleaning factory grease and applying wend exactly as per mfg instructions, the chain was squeaking badly, and it wore out in 800km, basically the same as a cleaned chain without lubrication.

After writing to wend and discussing with the CEO, I was advised "Not all chains are created equal, you must need the advanced application technique, of using wend wax off to dissolve in the wend wax"

So, so, so dodgy. As if that was not needed for all chains from the start. That has since become the recommended instructions, but it was not so at the start, and yet there is absolutely no way anyone working in the chain lubrication space – aka a manufacturer releasing a chain lubrication product – would not be absolutely aware that you cannot rub a solid on the outside and have penetration deep inside chain. It was obviously known, it was just a marketing angle no one had yet had the temerity to try on the cycling public, and they found it too tempting.

In my opinion. But you know, physics n stuff. And it's just so basic – bring a chain lubricant to market and not knowing would be like Albert Einstein being stuck on solving 2+2. To me it is supremely clear they absolutely knew, but saw \$\$ signs with this marketing angle on Instagram. And it worked for them big time.

Soooo.... Now one is meant to mix on the go, in a faffy process of rubbing wax on and dissolving it in, their own wax drip lube.

This worked ok, but still it tested very averagely. And so why would you spend so much more to mix your own wax drip lube when you can buy one for much less that is pre mixed in a bottle for you, and performs much better.

Then Wend released the wax in colours, and the market went wild.

F#ck me. \*Insert deep sigh of sadness here, that this is still where so much of the cycling demographic is at re chain lube knowledge.

So..... to have your coloured wend wax chain, you now need to;

- Rub on the wax.
- Dissolve it in.
- That will dissolve the colour
- Allow it to dry
- Rub more wax on the outside so you have your colour
- Enjoy coloured wax chain for all of a few minutes of riding. That you can't see anyway unless you ride without looking where you are going.
- Have a massively gunked up drivetrain from applying far too much expensive coloured rub on wax.
- A rub on stick is a super stupid way to apply your chain lube. Just how much product did you want on the sides of your chain where it is TOTALLY not wanted as rapidly gunks up the drivetrain.
- F#ck me.

If you fell for wend, I get it, you didn't think much about the logic of lubrication – you rely on the information given to you in marketing, and Wend were VERY VERY Clever with their marketing. So don't feel bad that you were sold on this, feel angry that some manufacturers will exploit the fact that you likely had not given deep thought to how chain lubrication works, and that your natural instinct is one of trust.

In summary, its is (in my opinion), over priced, the whole colour thing is bullshit, you are paying more for the pleasure of mixing your own lube, and for that, end up with one that is not terrible, but that in ZFC testing clearly falls well short of lubricant you can buy pre mixed for you and have a much better overall experience and less wear.

Just think, if, say Silca or Ceramic Speed released wax drip lube, and then also a solvent, and asked you to solvent in your wax drip lube. Articles, comments, forums would CRUCIFY that product.

So why does a rub on stick which is just a batshit stupid approach to chain lube to start with get a pass on this? And why do they get more of a pass on this for releasing in colours, when the solvent dissolves the colours to get the lubricant to actually penetrate?!

Again - F#ck me.

Help a brother out and help educate your fellow cyclists. There are manufacturers putting great products out to market that will genuinely be brilliant for your drivetrain – support them, not industry sharks exploiting marketing angles for cyclists' detriment.

#### Can wend be of use?

Sort of .....

There are a lot of positive reviews for it, but again, as is the case with people doing lubricant reviews, there is ZERO objective data behind it, and it is all subjective, and we have no idea who is maybe being paid to say nice stuff.

However, some reviews of peeps riding constantly in harsh conditions, where applying a solid wax on outside for a bit of extra protection - this MAY not be completely bad.

Ie - for wet lube chains in very harsh conditions there are cases of people applying grease to outside for a bit of extra temporary protection.

I haven't tested this re wax yet – but it is not out of the realm of possibility that in very specific ride cases, this MAY have some benefit.

However, note that wend wax is a REALLY REALLY tough clean. It sets like concrete, and so it is unlikely it is a super compatible mix with whatever other wax lube you may be using.

I can't yet really think of cyclists who simply can't use their wax lube as normal, apply more as needed in harsh conditions, refer to chain maintenance guide for how to keep chain low friction if you ride in harsh conditions often.