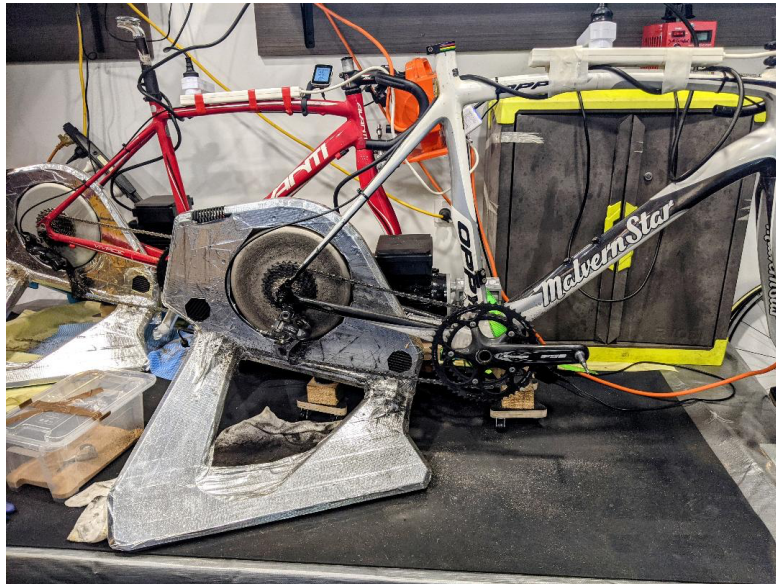


# Zero Friction Cycling

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



**Video demonstration ZFC test contamination**

<https://www.youtube.com/watch?v=2soU9J0Z7hk>

# Lubricant On Test :

**Cost: 49.90 aud**

**Size – 50ml**



**Photo :**

## Manufacturers Description on website

**Ranked #1 World's Best Chain Lube** ★ by the most respected independent testing lab Zero Friction Cycling.

- Trusted by 10,000+ customers worldwide -

### **Protects your chain**

- **Perfectly clean chain** & easy mud rinse
- Repels: water, dust, sand, mud, dirt, snow
- Ensures protection from rust & seizing

### **Saves your money**

- Extremely efficient: **1 bottle = 1+ year's supply**
- Single application lasts up to 700 miles - ZFC testing

### **Ensures a smoother ride**

- Significant energy savings
- Increased speed
- Noticeable easier pedalling
- Significant noise reduction

**Revolubes™ Bicycle Chain Lube** gets you going - faster, smoother, cheaper. One drop for each chain link is all you need to reap the benefits of the cutting edge in high performance technology.

- Revolube bonds chemically to the chain's metal and forms an impenetrable lubricating layer that's only a few atoms thin.
- **Why users love Revolubes?**
  - The 'apply and forget' effect - lasts so long you forget about it
  - Nothing sticks - "Somehow: the chain is dry but lubed."
  - Noticeably smoother ride, less effort needed
  - No need to have lube on you all the time
  - Perfectly silent bike

If you're a bike lover, or you're looking for an edge, then perhaps you might want to give it a go and join the Revolubes family.

... and if you're having doubts ...

### **MONEY BACK GUARANTEE**

If you are not 100% happy after trying out our product, simply return it and we will refund your money. No questions asked!

T&C Apply.-

# *Revolubes*

## Manufacturer Instructions on website;

### \*\*\*WARNING – LENGTH OF REVOLUBES

### INSTRUCTIONS are unusually long & involved – scroll past if wish to zoom straight to review\*\*

## Safety Information



**DANGER!**

If the label has been lost, mark the container to avoid confusion.

### Hazard statements:

**May be fatal if swallowed and enters airways. Harmful if inhaled. May cause an allergic skin reaction.**

### Prevention:

**Avoid breathing mist/vapours. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves.**

### Response:

**IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTRE/doctor if you feel unwell. If skin irritation or rash occurs: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting.**

### Storage:

**Store locked up. Keep out of reach of children.**

### Disposal:

**Dispose of contents/container, used and contaminated petrol, white spirit, turpentine, or any other solvent used for cleaning at your local Household Waste Recycling Centre.**



## Cleaning and Preparation

**Each component, regardless if it is used or new, requires an upfront and proper preparation before applying any lubricant. Such preparation is also required to aid the chemical reaction of Revolubes™ active ingredients with component's material.**

**To prepare the surfaces correctly, they must be thoroughly degreased and washed to remove any factory/old grease, production contamination, abrasive metal fillings and wear products (oxides, rust deposits, etc.), which may affect the operation of a component.**

**We strongly advise using the Revolubes Cleaner, which is purposely blended for the task however, degreasing with alternative solvent is also covered in this section.**

**If you chose to use Revolubes Cleaner for the job, ensure that the component and the cleaner are both in temperature above +16°C (not air temperature), and proceed with the following steps:**

- 1)** If necessary, clean the outside surfaces with a wire brush to get rid of larger contamination deposits before degreasing.
- 2)** Put the component in a container and fill it with fresh Revolubes™ Cleaner, so the component is fully submerged. Close the container with a lid.
- 3)** Depending on the component's condition, leave it submerged between 2 and 12 hours. Leave the container in warm place, shaking it from time to time. This will allow the cleaner to penetrate every nook and cranny and dissolve any solid contamination, oxides, and deposits.
- 4)** Shake the container vigorously for about 1 minute.
- 5)** Take the component out from the container and let the cleaner soak down.
- 6)** Wipe it thoroughly with a cloth or paper towel until it is dry.
- 7)** Proceed with application steps.

**Alternatively, you may use unleaded petrol, which is the last liquid product of crude oil distillation, capable of dissolving denser oil fractions such as greases and oils. Although unleaded petrol proved to be the best for the job, the alternatives are turpentine and white spirit.**

**Finally, you will need a detergent containing SLS soaps to clean off any film that a solvent has left after evaporating.**

**SLS (Sodium Laureth Sulphate), e.g. cheap shower gel - see ingredients on the label - usually the 2nd in line, after water (aqua). SLS soaps are being widely used within industries for machinery cleaning from greases and oils. These act as degreasers and coagulants. You will also find them in cleaning agents used by car washes.**

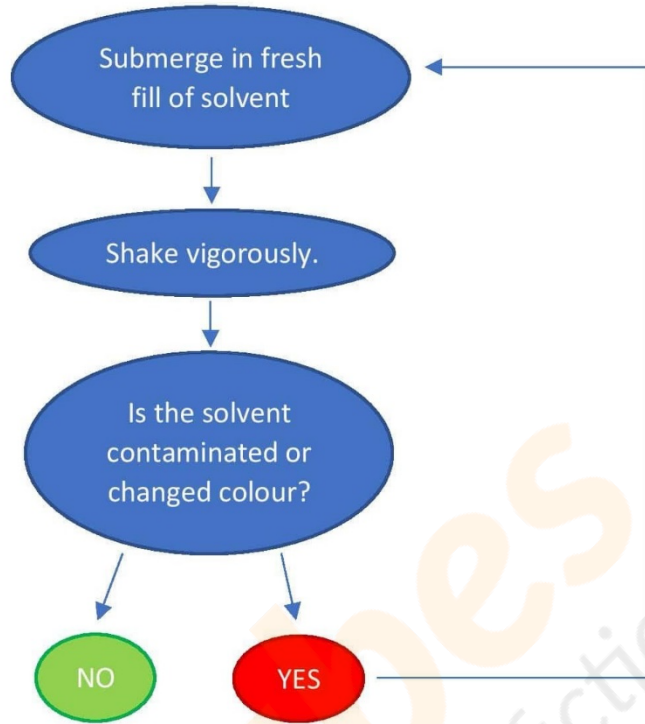
Warning!

**Solvent, petrol and turpentine vapours are flammable and can explode. You must not use open fire in their presence! Inhalation of fumes is harmful to your health. Always work with solvents and fuels in a prepared, well-ventilated place or in the open air. Always use protective means/clothing.**

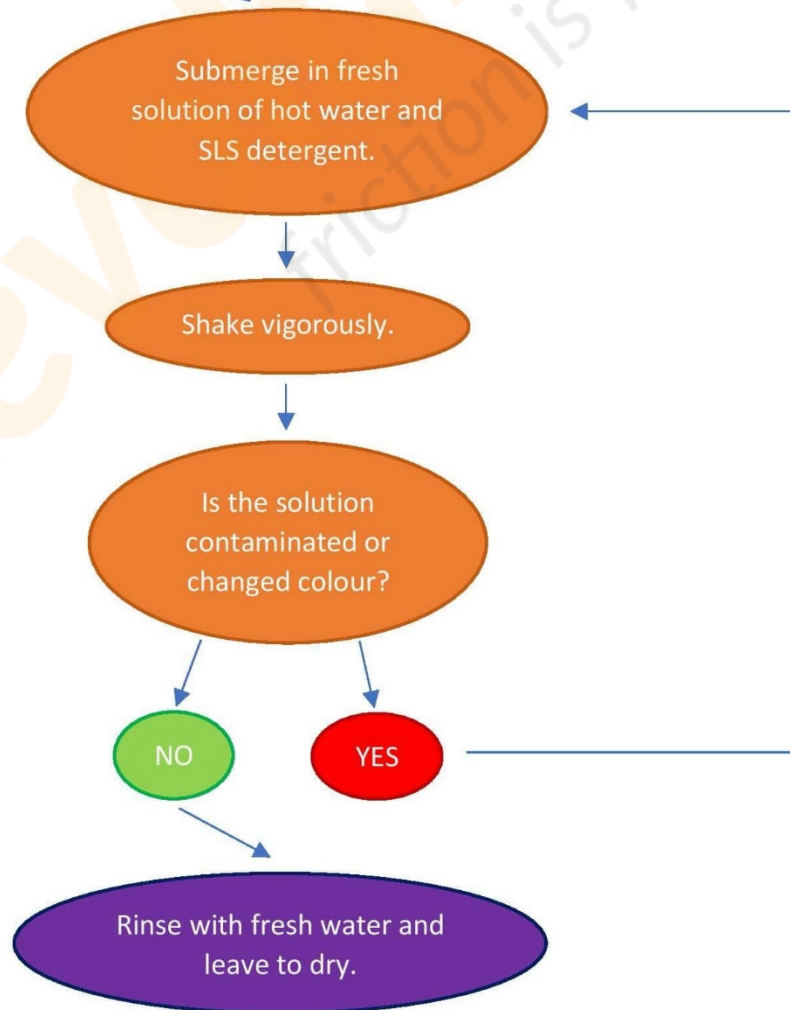
**If you are not using Revolubes Cleaner, follow these steps:**

- 1)** If necessary, clean the outside surfaces with a wire brush from larger deposits before degreasing.
- 2)** Put the component in a container and fill it with fresh solvent, so the component is fully submerged. Close the container with a lid.
- 3)** Leave it for 2 hours (10 minutes for subsequent fills) to allow the solvent to penetrate every nook and cranny and dissolve any solid contamination, oxides, and deposits. Shake the container from time to time.
- 4)** Shake the container vigorously for about 1 minute.
- 5)** If the solvent is dirty or has changed its colour, replace it with a fresh fill and return to step 2.
- 6)** If the solvent remains clean and does not change colour, take the component out and allow the solvent to evaporate.
- 7)** Put the component in a container and fill it with a solution of hot water and detergent.
- 8)** Wait for 10 minutes for the solution to well penetrate.
- 9)** Shake the container vigorously for about 1 minute.
- 10)** Remove the cleaned element and rinse thoroughly with fresh water.
- 11)** Allow to dry for about 1 hour.
- 12)** Continue with application steps.

## Cleaning



## De-greasing



## Application

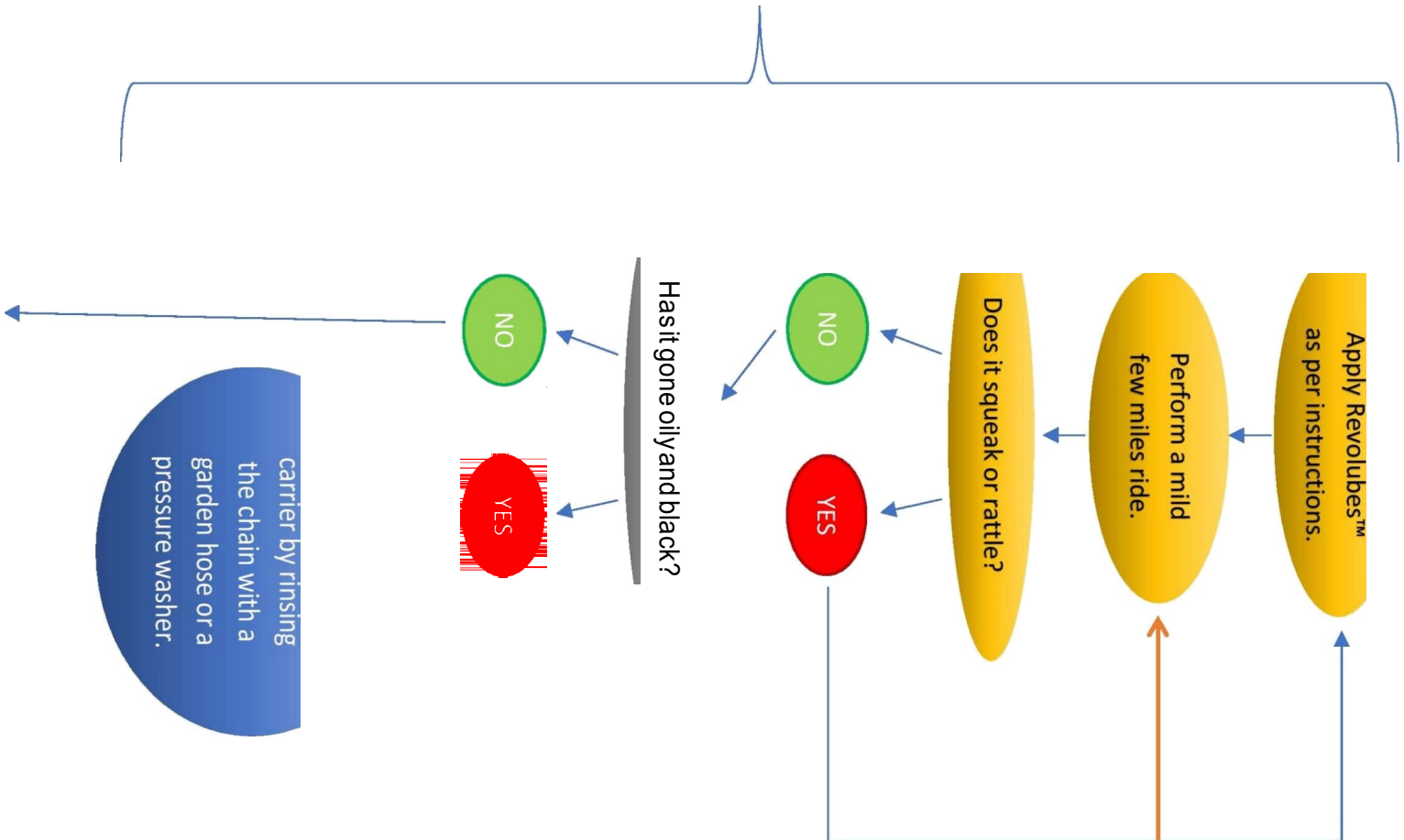
### Chains

Ensure the chain and Revolube, are both in temperature above +16°C. This is crucial to provide enough energy for the active ingredients' reaction with component's material. This is only necessary during application and the bed-in period, after which Revolubes™ performs down to -40°C.



- Revolubes™ should be applied to each, individual chain's link with the dropper provided in a "One link - One drop" manner; Preferably in the midpoint of chain's bottom run, between the cassette/free wheel and the chain ring, ensuring Revolube penetrates between the contact surfaces of the outer and inner plates, the roller and the inner plate, and further onto the pin.
- Mind not to overdose. If you overfill the links, the excess will be pushed out during operation, further catching dirt and causing the chain to blacken. A gentle touch with the pipette will suffice.
- After covering all the links, spin the crank backwards for about 30 rounds to allow Revolubes to penetrate further. Wipe off any excess with a cloth.
- Control the chain's operation during the first ride, and if necessary (squeaking), apply more Revolubes™ where needed. All chains will have their elements made with shape deviations within some tolerance, thus some sections may be working better than others.
- After the layer has settled, the chain may appear dry. However, this is not a sign of lack of lubrication.
- If it is difficult, or not possible to maintain the temperature regime during the application and lapping period, consider using a heat gun or its substitute to warm up the chain for application.

# Initial application and lapping period



400-500 miles.

## **RARE, BUT POSSIBLE SIDE EFFECTS:**

- **In some rare cases, after applying Revolubes™, a chain may get covered with an orange - red colour raid. This usually happens during winter, when a bike is left stationary for a while. The effect is most common for alloys, that contain plenty of iron but a small amount of manganese and chromium.**
- **Salt coming from road salting, acts as catalyst for the chemical reaction, which performs faster and produces extensive amounts of iron-chloride molecules.**
- **Iron chlorides are not rust (that is iron-oxides), although they might look similar, due to the red - orange colour. They do not cause chain's jamming, seizing, or ageing.**
- **The raid will disappear during a couple of minutes of normal operation. You can find more information on iron chlorides under: [https://en.wikipedia.org/wiki/Iron\\_chloride](https://en.wikipedia.org/wiki/Iron_chloride)**

## **Maintenance and subsequent applications**

- **Assuming that you ride around 300 miles a week, apply small top-ups of Revolubes™ Chain Lube once a week or when you observe the chain is getting noisier.**
- **The re-application intervals may vary from chain to chain, depending on its material, quality and usage.**
- **Use a solution of warm water and detergent (SLS soaps) for washing your drivetrain. Rinse with a garden hose or a pressure washer. Leave to dry and re-apply after.**
- **If the bike is to be stored stationery after washing for a longer period of time, a top-up is advisory as it will push out any moisture from the links.**



**Revolubes' advantage for Road - thin formula minimizing stiction and internal drag, therefore saving Watts, requires some enhancement to provide additional isolation and prevent external contamination to penetrate chain links in wet and muddy off-road conditions.**

**The additional features are achieved by mixing Revolubes Chain Lube & Chain Grease together in a ratio, depending on your riding conditions:**



## **Very Wet Road Cycling**

- **Dissolve 4g-6g of Revolubes Chain Grease, within 50ml of the Chain Lube.**
- **Keep mixing to the point, the liquid changes it's colour and has a uniform consistence, without any undissolved grease flakes.**
- **Once mixed, the phases can separate when put aside for a longer time, hence shake the bottle before use.**
- **Apply with pipette applicator as normal lube.**

## **Very Wet & Muddy MTB**

- **Mix Revolubes Chain Grease and Chain Lube to form a dense paste, yet applicable with a paint brush. Only add more lube if the mixture is too dense to be picked up with a brush.**
- **Keep mixing to the point, the formula has a uniform consistence.**
- **Apply Revolubes Chain Lube as normal and seal-off the links with the mix, ensuring it gets between the contact surfaces of the outer and inner plates and the roller to the inner plate connection.**
- **After covering all the links, start spinning the crank while smearing any Revolubes™ excess over the chain with a cloth, including the side plates.**

## Application

*Bearings, Suspension & Ratchet*

**Take care of your suspension's pins, pivot points, wheels' and crank's bearings as well as our ratchet mechanism with Revolubes Industrial grade, Calcium Sulphonate Complex based grease with HP additives for highly loaded bearings designed to work in heavily contaminated conditions.**



Make sure you perform the preparation process before application.

### Initial Application

- **Fill the bearing track with up to 1/3 of its volume, using Revolubes™ Bearing Grease. Exceeding 1/3 of fill is not recommended as this may cause excessive hydrodynamic resistance during operation.**
- **For the ratchet mech interior, cover it with a thin layer of Revolubes™ Bearing Grease (up to 0.3 mm thick), ensuring accurate coverage of all surfaces – ratchet ring, pawls and hinges. Turn the assembled mechanism a couple of times to ensure the grease penetrates it thoroughly.**

## Maintenance and subsequent applications

- **Inspect bearings and pivot points every six months, and the ratchet every season.**
- **If necessary, add Revolubes Bearing Grease.**
- **If the grease is contaminated, clean and degrease and re-lubricate with Revolubes™ Bearing Grease.**

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## ZFC REVIEW

**Here we go!!!**

*Ok – here marks the start of my attempt to roll out a new detail review format to enable a) hopefully easier to glean information on is this lubricant for you and b) enable me to complete each detail review more quickly as time involved to complete previously has me very behind completing many detail reviews for tests completed. If this format is not providing the information you are looking for in a good format pls email feedback to [info@zerofrictioncycling.com.au](mailto:info@zerofrictioncycling.com.au).*

Alrighty – first I need to address a couple of quick points. Firstly – the application instructions. As the king of typing way too much and producing documents that are typically unnecessarily long, it is rare indeed for me highlight that a manufacturers instruction may in fact be too long.

Multiple testing runs were done for Revolubes, and I can confirm that if you follow the very very simple chain prep as advised in the ZFC chain prep guide (instructions tab on website) – following the exact same initial cleaning prep for Revolubes as for every other lubricant – everything will be great. Revolubes really is a brilliant lubricant, and prep and use is no more difficult than solvent clean off factory grease, alcohol bath to ensure no film left, dry, apply, wipe excess, ride and enjoy a brilliant wet lubricant.

I fear that Revolubes prep and application instructions may put many cyclists off using this product, vs say grabbing a top competitor such as Rex Black Diamond or Silca synergetic that have about 50 less steps and no flow charts required to prep and apply.

On a positive note – this does speak to Revolubes absolute expertise, perfectionist attitude, and their drive regarding wanting to ensure their customers have the best lubrication experience possible. So they come from a brilliant technical base and customer focus base – which is a great place to start for customers – I just think that the prep and application instructions should be GREATLY shortened and simplified, and that should increase the number of cyclists around the world enjoying a truly brilliant lubricant option.

Finally – many apologies to both Revolubes and cyclists this review is EXTREMELY overdue. At the time of testing revolubes, it was in number one spot for wet drip lubricant in for dry road conditions – but there has been further

competition tested – and whilst to a point this claim may now be debated a little (what does one value most – EXTREME treatment longevity of simply still outstanding treatment longevity but with a cleaner lubricant – ie Rex Black Diamond is longer lasting – but its black – do you need such extreme longevity, or is outstanding good enough if it remains notably cleaner?). I don't have a concern with Revolubes putting on website that Zero Friction Cycling has it as worlds number 1 lubricant – it can be – if you like a really long lasting, very low wear, very clean wet lubricant – but also it may not be if your riding is in the dust, or wet – where other options would be recommended above Revolubes – even though it is a brilliant all round product.

Re extreme delay – I have been run off my feet keeping 3 test machines running to keep 3 tests running all the time – testing has been just booked out with a number of great manufacturers – at the moment if a manufacturer believes they have a genuinely great product, and they want independent verification and data of that – really ZFC is the only test facility available to get robust independent data (as far as I am aware anyway). A lot of testing is also to assist with locking in a particular formula / ratio of additives etc etc before a product is signed off to go to production – so getting tests completed, machines re set and next tests – busy – as is pre prepping up to 100 chains a week now for online orders – getting to / completing detail reviews has been a challenge but I am working very hard to clear back log. Right, enough excuses, review time!

## Performance – Dry Road Conditions

In ZFC opinion, this is really Revolubes key demographic. At only 4.0% wear for the first 1000km clean conditions test block – whilst these days it is not ranking at top of the leaderboard – realistically it is such a tiny amount of wear – anything under 5% for block 1 I basically class as near perfect result. The leaderboard is just getting more crowded under that mark as ZFC has tested a lot of absolutely top products recently as more top mfg's have booked in for testing.

Overall benefits of Revolubes for dry road cyclists aside from drivetrain saving wear rates are;

- It is very long lasting per application. That small bottle really will last the vast majority of cyclists well over a year. I think most would get 2 years unless they are frequently over applying. This makes what looks on the surface to be a very expensive lubricant actually very cheap. Sure you can pay \$15 for a bottle of Rock N roll gold or similar, but if you need to apply more of it per application, and need to re apply it much more often – then the cheap bottle is really the expensive bottle of lubricant when weighing up true product usage cost. Then if the lubricant delivers much lower wear rates as well, the false economy of running a cheaper bottle of lubricant should be very apparent.
- It is very clean lubricant. All wet lubricants will go black. But the best wet lubricants like Revolubes simply need far less actual product on chain to very effectively lubricate for a long stretch per application. This makes the much less wet than many other wet lubricants, and as such they remain much cleaner than many other wet lubricants for much longer. And, it makes them easier to keep clean / periodic maintenance - there is just less crap to need to clean.

I keep highlighting this on reviews and I will keep doing until I feel I have finally got the message across to the cycling world – your bicycle chain is operating externally completely exposed to contamination. The absolute last thing you want is a chain that has a lot of wet lubricant on the OUTSIDE – all of that will just become a contaminated grinding paste. So for instance Muc-Off's lubricants with UV infused particles and a UV light to ensure all of the OUTSIDE of the chain is coated in a WET lubricant – I'm wondering if one day we can get a class action going for the early deaths of countless drivetrains globally.

What you want is a product like Revolubes, Silca Synergetic or Rex Black Diamond if you run wet lubricants – amazing lubrication, for a very long time per application, with so little product needed. Lubricant is on the inside of the chain where it is needed, the outside remains much less wet, much less dirty. If you are using Revolubes and you have a very black wet chain – you have not sufficiently wiped excess after application and work in (and for all wet lubricants excess should be wiped from outside of chain post each ride – this takes 10 seconds).

Lastly of note for road cyclists – Revolubes does ride beautifully smooth. I get emails from around the world from people asking zfc to test X or Y, and over the years I had received a few emails from people before Revolubes contacted me to test – from cyclists who had tried Revolubes, thought it was absolutely brilliant, delivering so much less wear than the many lubricants they had tried before, as well as being cleaner, smoother etc - and wanted ZFC to test to see how it ranked vs other top recommended products. So, I had Revolubes on my long list to try to get too one day, it was great when Revolubes booked in themselves.



## Wear by block

WAX / DRIP / DRIP - WET / GREASE

Lube	Block 1 - No Contamination
Mspeedwax New Formula	0.0%
Silca Hot Melt	0.3%
Tru Tension Tungsten Race (D.A)	5.4%
Effetto Mariposa Flower power wax	2.3%
Ceramic Spd UFO Drip New Formula	2.3%
Silca Drip Batch 2	2.9%
Session S-wax	14.6%
Tru Tension Tungsten All Weather	14.0%
Rex Black Diamond	2.3%
Molten Speed Wax Original Formula	0.0%
Smoove	19.1%
Revolubes	4.0%
Allied GRAX	22.0%
Silca Synergetic	0.0%
Shimano Factory Grease	10.9%
Squirt	19.1%
Shimano Factory Grease + NFS	10.9%
Nix Frix Shun	12.6%

Rex Domestique	5.1%
Rock N Roll Gold	<b>8.9%</b>
Shimano Factory Grease + RNR gold	10.9%
Cycle Star Gold	<b>22.3%</b>
Wend Wax 2	35.7%
White Lightning Epic Ride	<b>22.9%</b>
AB Graphene Wax	22.0%
Wolf tooth WT-1	16.9%
Muc Off Ludicrous AF	8.9%
Muc Off Hydro Dynamic	<b>27.6%</b>
Muc Off Nano	<b>37.7%</b>

## Performance – Dry Off Road Conditions

Ok now we step out of Revolubes main demographic – in ZFC opinion. Overall, ZFC does not recommend ANY wet lubricant for use in offroad conditions – my position is that it is a mismatch of product type to use case. There is no escaping that more dust will stick on contact with wet lubricant vs a wax lubricant that sets to a semi solid paste or solid chain coating. This basic intuitive logic can be easily tested at home with a variety of lubricants – put some on a round metal rod and allow set time, the drizzle some sand or dirt etc over each, and you will rather clearly confirm – things stick to stuff that is wet a whole lot more than things that are dry.

The ZFC testing has also confirmed this rather basic physics beyond doubt. As at the time of writing this review, the average wear rate (even excluding the immersive waxes of mspeedwax and silca hot melt) for **the top 5 wax drip lubricants in dry contamination block 2 is 3.6%.**

**The average wear rate for the top 5 wet lubricants tested is 20.8%**

So it is not like it is close. When the top 5 wax base drip lubricants tested have an average of 5.7x lower wear rate – well, I personally choose to have my \$700 kcnc cassette on my gravel bike and my \$850 xx1 eagle cassettes on my mtb's as well as my chains and chain rings wear at one fifth of the rate running top wax lubricant options vs running top wet lubricant options in the world of dirt and dust.

So whilst Revolubes market clearly to all demographics as they do not have a wax base offering, ZFC advice to all, as always – is to avoid wet lubricants and offroad – again it is simply a mismatch of product to use case. Ie – if you have squeaking between your shoe cleat and pedal body because you tend to have movement there – you do not reach for your bottle of wet lube or grease, you reach for a dry lubricant spray or other dry lubricant option. Same for lubricating lock – you don't shove some oil down the keyhole. Such an option attracts contamination. The contamination makes it abrasive. And now instead of lubrication, you have accelerated wear. Choose the correct product for the use case.

For the love of your drivetrain and wallet, as you will see from the test data, most especially avoid poor wet lubricants – they are just murder by way of industrial grinding paste on your components. If a shop knows you ride offroad and sells you a Muc-Off wet lubricant, this should almost be a criminal offence. Aggravated if it comes with a UV light.

All that being said, if wet lubes are how you roll because that is your personal happy space, and you ride gravel, mtb, mix of road & gravel – then Revolubes is one of the best known wet lubricant options.

Revolubes wear rate in the dry contamination block was less than half the average wear rate for wet lubricants tested to date, and was very close to silca synergetic which was numero uno wet lubricant offroad until Rex Black Diamond took the number one spot. So 3<sup>rd</sup> best wet lubricant tested for dry offroad, very close to second – it is a great option..... For a wet lubricant.

## Wear by block

WAX / DRIP / DRIP - WET / GREASE

Lube	Block 2 - Dry Cont.
Mspeedwax New Formula	1.1%
Silca Hot Melt	1.7%
Tru Tension Tungsten Race (D.A)	2.0%
Effetto Mariposa Flower power wax	2.3%
Ceramic Spd UFO Drip New Formula	3.4%
Silca Drip Batch 2	4.6%

Session S-wax	5.7%
Tru Tension Tungsten All Weather	10.0%
Rex Black Diamond	11.1%
Molten Speed Wax Original Formula	<b>12.0%</b>
Smooove	<b>17.4%</b>
Revolubes	18.3%
Allied GRAX	18.3%
Silca Synergetic	18.6%
Shimano Factory Grease	20.8%
Squirt	<b>22.0%</b>
Shimano Factory Grease + NFS	27.4%
Nix Frix Shun	27.4%
Rex Domestique	28.6%
Rock N Roll Gold	<b>29.0%</b>
Shimano Factory Grease + RNR gold	29.0%
Cycle Star Gold	<b>30.9%</b>
Wend Wax 2	33.6%
White Lightning Epic Ride	<b>33.7%</b>
AB Graphene Wax	38.3%
Wolf tooth WT-1	52.9%
Muc Off Ludicrous AF	78%
Muc Off Hydro Dynamic	<b>98.9%</b>
Muc Off Nano	<b>107.7%</b>

And linked to dry contamination block 2 is **no contamination block 3**. This test block demonstrates a lubricants ability to shed / clear contamination gathered during block 2 (a common claim with many lubricants is they CLEAN as they Lubricate) – this assesses this attribute.

Revolubes showed a low rate of clearing the contamination absorbed during block 2, with block 3 wear rate at 17.4%, down only 0.9% on block 2. This is not uncommon. For comparison, another outstanding wet lubricant – silca synergetic, recorded a wear rate in block 3 of 24.3%, nearly 6% higher than its dry contamination block 2 result. This demonstrates that initially wear rates remained low for first part of block 2, but were steadily climbing by the end as more and more contamination is absorbed over time, and that what is absorbed – as is typically the case – does not go anywhere unless it is removed by cleaning maintenance.

This can be more prevalent with some of the best wet lubricants that require so little actual lubricant – so little is applied each re lube that there is not really any flush cleaning occurring, vs say a lubricant like RNR gold where you need to apply a lot each application as it has much lower actual lubrication amount per treatment – RNR gold for instance dropped from 29% in block 2 to 20% in block 3.

Still, it is vastly better to use a top performing, much less wet lubricant, in such conditions if you must run a wet lubricant, and then perform some simple maintenance to flush clean contamination and re lube, rather than rely on the lubricant to clean out contamination absorbed – that is just not a smart way to go. To any extremely large degree, you can disregard any lubricants claims of cleaning whilst lubricating (an exception to this to a degree are the top immersive waxes, being solid, abrasive contamination tends to abrade the wax off, taking the wax and contamination out with it. So there is a high degree of self-cleaning for solid waxes, but at the cost of treatment lifespan. They tend to demonstrate amazing resistance to increasing in friction losses in harsh conditions, until suddenly a much sharper ramp in losses as there becomes not

enough wax left and things start running metal on metal. Wet lubricants will just continue to steadily and inexorably climb, as whilst the lubricant is not lost in the manner of solid waxes, it is just becoming ever more abrasive.

A lubricant making much about cleaning as it lubricates due to containing a detergent etc is Wolf Tooth WT-1. Its block 2 wear rate was 52.9%, and its block 3 wear rate with no more contamination added was 54%. So..... That is a fail. And that is what you can generally expect from lubricants that claim they clean as they lubricate. Refer to the WT-1 review for further detail on why having a cleaning agent as part of your wet lubricant is a completely flawed approach. The approach, as always, is to minimise the rate of contamination being absorbed, vs being very wet and absorbing at a high rate and then apparently having a method to deal with it. Whilst concurrently continuing to absorb more and more. It is the difference in approaches between wearing armour to prevent being stabbed, or having a first aid kit to deal with being stabbed, and addressing the wounds, whilst someone is continuing to stab you. Clean as lubricate is as much a fail approach in general as that analogy. Go with options that minimise contamination absorption to begin with.

## Performance – Wet & Extreme Conditions

Here we get to a bit of tough area. In ZFC testing Revolubes did struggle in the wet. It appears to ZFC observation to wash off faster than optimal. This will not really be too much of a concern if your wet rides are not really long, so you can get home and re lube (actually, for ALL lubricants it is best to do a little quick maintenance to reset contamination post wet ride... but I will get to that in the next section..). However, if your rides are long during intrepid conditions, from ZFC testing data and observations, the treatment lifespan may come up short.



This is somewhat.... I am not sure if contested is the right word – Revolubes didn't so much as disagree with ZFC test result as simply find it surprising vs their own testing, which is pretty darn thorough considering lubricants is what they do (not just cycling specific).

We did do some more testing including with their chain grease mix, and things definitely improve with their grease mix – however we still didn't really get a match between the short treatment lifespan in the ZFC testing vs Revolubes performance expectations in wet conditions from their testing, and we still didn't really attain an outstanding longevity result vs some other options in very wet conditions.

We believe the main difference between ZFC and Revolubes is that the ZFC test contains a lot more contamination and a lot harsher contamination vs their testing. Their testing may be more realistic to a lot of wet road conditions. ZFC testing for wet conditions is not really set up to mimic necessarily road or offroad. The wet contamination block 4 in the ZFC test is simply designed to be a pretty tough wet conditions cycling test. As a global independent test body, I very specifically did not want a fairly easy wet conditions test, because if ZFC puts a glowing review and recommendation on a lubricant being outstanding in wet conditions cycling, and then a lot of cyclists find that well actually for their wet riding it is really not lasting at all – this would be a failure on ZFC part. It is of course extremely important to ZFC that cyclists can place trust in the recommendations and results from the testing, so the testing is deliberately very harsh, and likely much more harsh than many manufacturers own cycling simulated testing. I believe (and I think Revolubes agree) that this is behind the differing wet test results for ZFC vs Revolubes own.

So, in the ZFC test Revolubes showed that the combination of the amount of water and abrasive contamination during that block, the lubricant was not lasting sufficiently until the next re-lubrication point, and higher than hoped for wear rate occurred.

This result in block 4 was backed by the result in Single Application Longevity testing in the extreme conditions test block.

It was also backed during observation. It is not difficult to tell during a test if a lubricant is still lubricating well towards the end of a wet contamination interval, or if it is done. In the former a chain still clearly has plenty of lubrication on it, and the chain is still running relatively quietly. In the latter situation the chain is clearly dry with not much lubrication looking to be present, the rollers are shiny, noise is markedly increased vs when it is re lubed etc etc. Revolubes exhibited all of these above in wet contamination block 4 in the latter half of each interval, so treatment lifespan was clearly struggling to make it to the next re lube point. After re lube the chain would go back to being lovely and quiet again.

But again this may or may not be an issue for you if you ride a lot in the wet. Depending on the amount of contamination on your wet roads/ wet rides and how long they are – if the treatment survives your ride just fine and you can then re lube – all is well. If the length of your wet rides + level of contamination on your rides has them exceeding treatment lifespan, then have a look at using revolubes in conjunction with their chain grease (I actually quite like this approach – you can fortify your awesome wet lubricant substantially when you need to, keep things light and super clean when you don't) – or look to a longer lasting in wet conditions option like synergetic which really doesn't wash off easily.

## Block 4 – Wet contamination test block (and preceding blocks for overall review)

Wear by block				
WAX / DRIP / DRIP - WET / GREASE				
Lube	Block 1 - No Contamination	Block 2 - Dry Cont.	Block 3 - No Cont.	Block 4 - Wet cont.
Silca Hot Melt	0.3%	1.7%	4.6%	8.0%
Molten Speed Wax Original Formula	0.0%	12.0%	0.0%	8.0%
Mspeedwax New Formula	0.0%	1.1%	0.6%	9.1%
Silca Synergetic	0.0%	18.6%	24.3%	27.4%
Shimano Factory Grease + NFS	10.9%	27.4%	14.3%	28.6%
Nix Frix Shun	12.6%	27.4%	14.3%	28.6%
Tru Tension Tungsten All Weather	14.0%	10.0%	12.0%	31.0%
Effetto Mariposa Flower power wax	2.3%	2.3%	0.0%	32.0%
Ceramic Spd UFO Drip New Formula	2.3%	3.4%	0.6%	32.3%
Session S-wax	14.6%	5.7%	5.1%	32.6%
Silca Drip Batch 2	2.9%	4.6%	0.0%	36.9%
Tru Tension Tungsten Race (D.A)	5.4%	2.0%	2.3%	38.3%
Allied GRAX	22.0%	18.3%	18.9%	42.0%
Rex Black Diamond	2.3%	11.1%	17.0%	42.6%
Rex Domestique	5.1%	28.6%	15.1%	43.7%
Smoove	19.1%	17.4%	2.0%	45.1%
Squirt	19.1%	22.0%	18.0%	48.9%
Revolubes	4.0%	18.3%	17.4%	61.7%
Cycle Star Gold	22.3%	30.9%	45.1%	61.8%
Rock N Roll Gold	8.9%	29.0%	20.0%	65.0%
Shimano Factory Grease + RNR gold	10.9%	29.0%	20.0%	65.0%
Wend Wax 2	35.7%	33.6%	28.6%	67.2%
White Lightning Epic Ride	22.9%	33.7%	104.3%	67.4%
AB Graphene Wax	22.0%	38.3%	24.9%	103.6%
Wolf tooth WT-1	16.9%	52.9%	54.0%	105.8%
Muc Off Ludicrous AF	8.9%	78%		156.0%
Muc Off Hydro Dynamic	27.6%	98.9%		197.8%
Muc Off Nano	37.7%	107.7%		215.4%
Shimano Factory Grease	10.9%	20.8%		

# Maintenance Recommendations

I have just launched the ZFC chain maintenance guide – so for full maintenance information overall re chains & lubricants and what you should do and how often for your lubricant type and riding type – head to that guide in the instructions tab on zero friction cycling website.

A quick note for Revolubes specifically;

- Dry road riding your maintenance is extremely easy. Revolubes remains very clean (for a wet lubricant) and very low friction in such conditions. ZFC recommends a periodic flush clean every approximately 2000km which for most would be after about 3 or 4 applications only, and it is a very easy clean. Along with the great product, this will ensure very impressive chain and drivetrain component lifespans vs oh so many other wet lubricant options on the market (ie vs your stereo typical lbs lubricants of Muc off, finish line, rock n roll etc etc)
- Dry offroad conditions - bear in mind ZFC stance on wet lubricants and offroad cycling. At minimum you will want to flush clean every approx. 500km if you can before contamination absorption makes the lubricant too abrasive.
- Wet conditions – ZFC stance is as always to reset chain contamination post any decent wet ride, for ALL lubricants – and if not practical, just as often as is practical. Water transports contamination deep into chain, it is pressed into lubricant, and from there it is in almost all cases effectively locked in there unless you remove it. There are generally very low rates of flush cleaning from re lubing, as per link there is just such a small amount of lubricant added. (ie if you added even a heavy application of 5ml, onto over 100 links of chain, that is 0.05ml per link – there is only so much flush cleaning that can do vs performing actual cleaning

maintenance. If you ride a lot in wet conditions just balance maintenance time & how happy you are re friction and wear increase from wet rides. The more expensive your groupset components, the more you should try to flush clean chain post wet riding. If you do not, the abrasive contamination brought in will continue to cause very high wear even if your next rides are in the sunshine – it is basically not going anywhere unless you remove it.

Consider – would a professional racer, after a wet stage, just add lube and call that good to go the next day? Or would the mechanic fully clean chain before lubing for next day. They don't care about wear, they care about speed and not having 5w of extra friction losses in chain. If you keep those 5w of extra friction losses from the wet ride, you may not care about your speed, but that is 5w of energy every pedal stroke going directly into wearing through your chain and drivetrain components faster. On shimano tiagra – maybe you don't care. On Dura ace or Sram Axs road or eagle x01 or campagnolo record etc etc – maybe you should care a lot.

## Single Application Longevity results;

Similar to what has been covered above, Revolubes was outstanding in dry road conditions, solid in dry offroad conditions (note that leaderboard is populated by mostly top lubricants tested since new test protocol for S.A.L), and struggled in wet.

### Dry Road conditions

Lubricant	Km's to Wear Rate Jump Point	Km's to reach total Wear allowance	Real world KM's Adjusted - Wear rate Jump Point	Real World Km's to reach total Wear allowance
Rex Black Diamond	5,602	5602	1,867	1867
Rex Wax Race Blend (4+1)	4,300	5000	1,433	1667
Revolubes	3,416	3416	1,139	1139
Rex Black Diamond + Race Day Spray	3,415	3415	1,138	1138
Rex Wax - Training blend (11+1)	3,300	3750	1,100	1250
Rex Domestique	3,210	3210	1,067	1067
AB Graphene Lube	3,254	3254	1,000	1085
Silca Synergetic	2,333	2333	778	778
Allied Grax	2,089	2089	696	696
Effetto Mariposa Flower Power Wax	1,950	3088	650	1029
Mspeedwax New Formula	1,800	3063	600	1021
Silca Hot Melt	1,300	1595	433	531
Rex Wax - Test blend 1	1,300	1375	433	458
UFO Drip V2	900	1182	300	394
AB Graphene Wax	300	420	100	140

### Dry Off Road conditions

Lubricant	Km's to Wear Rate Jump Point	Km's to reach total Wear allowance	Real world KM's Adjusted - Wear rate Jump Point	Real World Km's to reach total Wear allowance
Rex Black Diamond + RDS	2,642	3071	880	1023
Rex Wax Race Blend (4+1)	1,800	1800	600	600
Mspeedwax New Formula	1,650	1848	550	616
Rex Black Diamond	1,476	1476	489	489
AB Graphene Lube	1,449	1449	483	483
Effetto Mariposa Flower Power Wax	1,350	1571	450	524
Allied Grax	1,265	1551	421	517
Rex Domestique	1,154	1154	385	385
Revolubes	1,100	1588	367	529
Silca Hot Melt	900	1030	300	343
Rex Wax - Test blend 1	750	836	250	278
Silca Synergetic	500	690	167	230
Ufo Drip v2	450	1078	150	360
AB Graphene Wax	300	420	100	140



## Extreme Conditions

Lubricant	Km's to Wear Rate Jump Point	Km's to reach total Wear allowance	Real world KM's Adjusted - Wear rate Jump Point	Real World Km's to reach total Wear allowance
AB Graphene Lube	600	807	200	270
Silca Synergetic	500	690	167	230
Silca Hot Melt	300	637	100	212
Mspeedwax New Formula	300	588	100	196
Rex Black Diamond	300	538	100	179
Rex Black Diamond + RDS	300	525	100	175
Allied Grax	300	450	100	150
Rex Wax Race Blend (4+1)	300	450	100	150
Rex Domestique	300	427	100	143
AB Graphene Wax	200	344	66	115
Ufo Drip v2	150	357	50	119
Rex Wax test blend 1	150	346	50	115
Revolubes	150	300	50	133

## Cost to run modelling

Similar to the above, as the cost to run modelling is mostly influenced by wear rates (lubricant cost over 10,000km works out to be a very minor factor overall re what your drivetrain is costing you to run. Wear rate of the components is by far the dominant factor).

So Revolubes is an outstanding option for dry road cyclists, medium for dry offroad, and lower when it is wet.

\*\* The cost to run modelling starts with data from the main test, so a real mix of conditions as it covers the wear rates from block 1 – no contamination, block 2 – dry contamination, block 3 – no contamination – remember there is no cleaning it is all up to the lubricant – block 4 – wet contamination, and block 5 – no contamination.

Revolubes does not rank impressively high on the overall table due to the wear results especially from Block 4

If you were to just use Revolubes in Dry road conditions riding, your cost to run would be extremely low, it would likely be an approx. top 5 ever tested lubricant.

Unfortunately it is difficult to model based just on block 1 as the ZFC test being in purified clean air is not the same as your riding outside, nor does motor driving 250w match the higher wear of sinusoidal loading that occurs with pedalling at

250w. Ie if I modelled from just block 1, Silca Synergetic would come out with basically infinite component lifespan – so for the main overall modelling, the data from the main test overall is used, and then further modelling on specific conditions (ie dry offroad from block 2 wear results) is able to provide outstanding comparative cost to run between different lubricant options in those specific conditions.

Last note – again if your groupset is more expensive than the groupset modelled, take heed of the wear rates as it is your component wear rate, not the cost of the lubricant – that will make up the vast percentage of your cost to run.

## Mixed Conditions Cost to run

Ultegra 11spd Components	Total Cost to run Per 10,000km	Lubricant Cost	Number of chains worn	Chains Cost	Number of Cassettes Worn	Cassettes Cost	Chainrings Worn	Chain rings cost
Mspeedwax New Formula	\$ 101.60	\$ 44.90	0.40	\$ 20.00	0.20	\$ 22.00	0.07	\$ 14.70
Silca Hot Melt	\$ 142.90	\$ 79.90	0.40	\$ 20.00	0.20	\$ 22.00	0.07	\$ 14.70
Effetto Mariposa Flower Power wax	\$ 159.35	\$ 29.90	0.98	\$ 49.00	0.49	\$ 53.90	0.16	\$ 34.02
Ceramic Speed UFO Drip New Formula	\$ 237.73	\$ 84.43	1.10	\$ 55.00	0.60	\$ 60.50	0.20	\$ 37.80
Silca Synergetic	\$ 284.97	\$ 32.97	1.80	\$ 90.00	0.90	\$ 99.00	0.30	\$ 63.00
Rex Black Diamond	\$ 288.89	\$ 17.99	1.94	\$ 97.00	0.97	\$ 106.70	0.32	\$ 67.20
Silca SS Drip	\$ 290.92	\$ 80.92	1.50	\$ 75.00	0.75	\$ 82.50	0.25	\$ 52.50
Tru Tension Tungsten All Weather (I.P)	\$ 305.30	\$ 68.00	1.70	\$ 85.00	0.90	\$ 93.50	0.30	\$ 58.80
Smooove (I.P)	\$ 342.10	\$ 25.00	2.26	\$ 113.00	1.13	\$ 124.30	0.40	\$ 79.80
Rex Domestique	\$ 358.40	\$ 35.00	2.32	\$ 116.00	1.20	\$ 127.60	0.38	\$ 79.80
Squirt - (I.P)	\$ 369.45	\$ 18.75	2.50	\$ 125.00	1.25	\$ 137.50	0.42	\$ 88.20
Nix Frix Shun	\$ 378.15	\$ 14.85	2.60	\$ 130.00	1.30	\$ 143.00	0.43	\$ 90.30
Allied Grax	\$ 379.70	\$ 29.00	2.50	\$ 125.00	1.30	\$ 137.50	0.40	\$ 88.20
Revolubes	\$ 381.00	\$ 45.00	2.40	\$ 120.00	1.20	\$ 132.00	0.40	\$ 84.00
Rock N Roll Gold	\$ 471.90	\$ 67.10	2.90	\$ 145.00	1.45	\$ 159.00	0.48	\$ 100.80
AB Graphene Wax	\$ 552.90	\$ 111.90	3.20	\$ 160.00	1.60	\$ 176.00	0.50	\$ 105.00
Wend wax 2	\$ 574.00	\$ 112.00	3.30	\$ 165.00	1.65	\$ 181.50	0.60	\$ 115.50
Cycle Star Gold	\$ 602.00	\$ 140.00	3.30	\$ 165.00	1.65	\$ 181.50	0.60	\$ 115.50
Tru Tension Tungsten Race (D.A)	\$ 630.84	\$ 399.84	1.60	\$ 80.00	0.80	\$ 88.00	0.30	\$ 63.00
White Lightning Epic Ride	\$ 735.40	\$ 118.00	4.40	\$ 220.00	2.20	\$ 242.00	0.74	\$ 155.40
Muc Off Hydro Dynamic	\$ 799.05	\$ 99.75	5.00	\$ 250.00	2.50	\$ 275.00	0.80	\$ 174.30
Muc Off Ludicrous AF	\$ 898.60	\$ 297.00	4.30	\$ 215.00	2.10	\$ 235.00	0.70	\$ 151.00
Muc Off Nano Lube	\$ 1,222.70	\$ 200.00	7.30	\$ 365.00	3.70	\$ 401.50	1.20	\$ 256.20

## Mixed Conditions Cost to run

Dura Ace 11spd Components	Total Cost Per 10,000km	Lubricant Cost	Number of chains worn	Chains Cost	Number of Cassettes Worn	Cassettes Cost	Chainrings Worn	Chain rings cost
Molten Speed Wax New Formula	\$ 240.90	\$ 44.90	0.40	\$ 36.00	0.40	\$ 132.00	0.07	\$ 28.00
Silca Hot Melt	\$ 275.90	\$ 79.90	0.40	\$ 36.00	0.40	\$ 132.00	0.07	\$ 28.00
Effetto Mariposa Flower Power wax	\$ 498.83	\$ 22.43	0.98	\$ 88.20	0.98	\$ 323.40	0.16	\$ 64.80
Ceramic Speed UFO Drip New Formula	\$ 626.43	\$ 84.43	1.10	\$ 99.00	1.10	\$ 363.00	0.20	\$ 80.00
Silca SS Drip	\$ 810.92	\$ 80.92	1.50	\$ 135.00	1.50	\$ 495.00	0.25	\$ 100.00
Tru Tension Tungsten All Weather (I.P)	\$ 902.00	\$ 68.00	1.70	\$ 153.00	1.70	\$ 561.00	0.30	\$ 120.00
Silca Synergetic	\$ 925.46	\$ 49.46	1.80	\$ 162.00	1.80	\$ 594.00	0.30	\$ 120.00
Rex Black Diamond	\$ 960.79	\$ 17.99	1.94	\$ 174.60	1.94	\$ 640.20	0.32	\$ 128.00
Smoove (I.P)	\$ 1,134.20	\$ 25.00	2.26	\$ 203.40	2.26	\$ 745.80	0.40	\$ 160.00
Rex Domestique	\$ 1,161.00	\$ 35.00	2.32	\$ 208.80	2.32	\$ 765.60	0.38	\$ 152.00
Tru Tension Tungsten Race (D.A)	\$ 1,191.84	\$ 399.84	1.60	\$ 144.00	1.60	\$ 528.00	0.30	\$ 120.00
Revolubes	\$ 1,213.00	\$ 45.00	2.40	\$ 216.00	2.40	\$ 792.00	0.40	\$ 84.00
Squirt - (I.P)	\$ 1,236.75	\$ 18.75	2.50	\$ 225.00	2.50	\$ 825.00	0.42	\$ 168.00
Allied Grax (I.P)	\$ 1,247.00	\$ 29.00	2.50	\$ 225.00	2.50	\$ 825.00	0.40	\$ 168.00
Nix Frix Shun	\$ 1,278.85	\$ 14.85	2.60	\$ 234.00	2.60	\$ 858.00	0.43	\$ 172.00
Rock N Roll Gold	\$ 1,477.10	\$ 67.10	2.90	\$ 261.00	2.90	\$ 957.00	0.48	\$ 192.00
AB Graphene Wax	\$ 1,655.90	\$ 111.90	3.20	\$ 288.00	3.20	\$ 1,056.00	0.50	\$ 200.00
Wend wax 2	\$ 1,738.00	\$ 112.00	3.30	\$ 297.00	3.30	\$ 1,089.00	0.60	\$ 240.00
Cycle Star Gold	\$ 1,766.00	\$ 140.00	3.30	\$ 297.00	3.30	\$ 1,089.00	0.60	\$ 240.00
White Lightning Epic Ride	\$ 2,162.00	\$ 118.00	4.40	\$ 396.00	4.40	\$ 1,452.00	0.74	\$ 196.00
Muc Off Ludicrous AF	\$ 2,391.00	\$ 297.00	4.30	\$ 387.00	4.30	\$ 1,419.00	0.70	\$ 288.00
Muc Off Hydro Dynamic	\$ 2,519.75	\$ 99.75	5.00	\$ 450.00	5.00	\$ 1,650.00	0.80	\$ 320.00
Muc Off Nano Lube	\$ 3,754.00	\$ 200.00	7.30	\$ 657.00	7.30	\$ 2,409.00	1.20	\$ 488.00

## Dry Offroad Conditions

GRX 810 Components - Dry gravel / Mtb / Cx	Total Cost Per 10,000km	Lubricant Cost	Number of chains worn	Chains Cost	Number of Cassettes Worn	Cassettes Cost	Chainrings Worn	Chain rings cost
Effetto Mariposa Flower Power wax	\$ 119.77	\$ 33.64	0.6	\$ 28.75	0.3	\$ 37.38	0.1	\$ 20.00
Mspeedwax New Formula	\$ 149.85	\$ 67.35	0.5	\$ 25.00	0.3	\$ 32.50	0.1	\$ 25.00
Silca SS Drip	\$ 180.47	\$ 91.72	0.6	\$ 31.25	0.3	\$ 32.50	0.1	\$ 25.00
Silca Hot Melt	\$ 202.35	\$ 119.85	0.5	\$ 25.00	0.3	\$ 32.50	0.1	\$ 25.00
Ceramic Speed UFO Drip New Formula	\$ 226.65	\$ 115.40	0.8	\$ 37.50	0.4	\$ 48.75	0.1	\$ 25.00
Rex Black Diamond	\$ 228.48	\$ 26.98	1.4	\$ 68.75	0.7	\$ 87.75	0.2	\$ 45.00
Tru Tension Tungsten All Weather	\$ 289.75	\$ 96.00	1.3	\$ 62.50	0.6	\$ 81.25	0.3	\$ 50.00
Smooove	\$ 362.50	\$ 35.00	2.1	\$ 106.25	1.1	\$ 146.25	0.4	\$ 75.00
Silca Synergetic	\$ 366.72	\$ 32.97	2.3	\$ 112.50	1.1	\$ 146.25	0.4	\$ 75.00
Allied Grax	\$ 377.25	\$ 43.50	2.3	\$ 112.50	1.1	\$ 146.50	0.4	\$ 75.00
Molten Speed Wax	\$ 390.08	\$ 167.58	1.5	\$ 75.00	0.8	\$ 97.50	0.3	\$ 50.00
Squirt	\$ 443.25	\$ 27.00	2.2	\$ 137.50	1.4	\$ 178.75	0.5	\$ 100.00
Nix Frix Shun	\$ 541.05	\$ 19.80	3.4	\$ 168.75	1.8	\$ 227.50	0.6	\$ 125.00
Rock N Roll Gold	\$ 635.82	\$ 93.94	3.6	\$ 181.25	1.8	\$ 235.63	0.6	\$ 125.00
Tru Tension Tungsten Race (D.A)	\$ 642.28	\$ 559.78	0.5	\$ 25.00	0.3	\$ 32.50	0.1	\$ 25.00
Cycle Star Gold	\$ 758.50	\$ 196.00	4.0	\$ 193.75	1.9	\$ 243.75	0.6	\$ 125.00
Wend wax 2	\$ 792.75	\$ 154.00	4.3	\$ 212.50	2.1	\$ 276.25	0.8	\$ 150.00
Rex Domestique	\$ 797.50	\$ 52.50	5.0	\$ 250.00	2.5	\$ 325.00	0.9	\$ 170.00
Revolubes	\$ 812.50	\$ 67.50	5.0	\$ 250.00	2.5	\$ 325.00	0.9	\$ 170.00
White Lightning Epic Ride	\$ 1,202.25	\$ 166.00	7.1	\$ 356.25	3.5	\$ 455.00	1.1	\$ 225.00
AB Graphene Wax	\$ 1,269.16	\$ 156.66	7.5	\$ 375.00	3.8	\$ 487.50	1.3	\$ 250.00
Muc Off Ludicrous AF	\$ 1,898.00	\$ 445.50	9.9	\$ 493.75	4.9	\$ 633.75	1.6	\$ 325.00
Muc Off Hydro Dynamic	\$ 1,955.00	\$ 140.00	12.4	\$ 618.75	6.1	\$ 796.25	2.0	\$ 400.00
Muc Off Nano Lube	\$ 2,282.50	\$ 280.00	13.5	\$ 675.00	6.8	\$ 877.50	2.3	\$ 450.00

### Wet Conditions (harsh road / moderate offroad)

GRX 810 Components - Wet gravel / Mtb / C	Total Cost Per 10,000km	Lubricant Cost	Number of chains worn	Chains Cost	Number of Cassettes Worn	Cassettes Cost	Chainrings Worn	Chain rings cost
Mspeedwax New Formula	\$ 235.35	\$ 67.35	1.2	\$ 48.00	0.6	\$ 78.00	0.21	\$ 42.00
Silca Hot Melt	\$ 275.85	\$ 119.85	1.2	\$ 48.00	0.6	\$ 78.00	0.15	\$ 30.00
Silca Synergetic	\$ 634.46	\$ 49.46	4.1	\$ 162.00	2.1	\$ 273.00	0.8	\$ 150.00
Nix Frix Shun	\$ 642.30	\$ 19.80	4.5	\$ 180.00	2.3	\$ 292.50	0.8	\$ 150.00
Effetto Mariposa Flower Power wax	\$ 693.64	\$ 33.64	4.8	\$ 192.00	2.4	\$ 312.00	0.8	\$ 156.00
Tru Tension Tungsten All Weather	\$ 724.50	\$ 96.00	4.7	\$ 186.00	2.3	\$ 292.50	0.8	\$ 150.00
Ceramic Speed UFO Drip New Formula	\$ 769.40	\$ 115.40	4.8	\$ 192.00	2.4	\$ 312.00	0.8	\$ 150.00
Rex Black Diamond	\$ 804.43	\$ 26.98	6.4	\$ 255.60	3.2	\$ 415.35	0.53	\$ 106.50
Silca SS Drip	\$ 844.72	\$ 91.72	5.6	\$ 222.00	2.7	\$ 351.00	0.9	\$ 180.00
Allied Grax	\$ 915.00	\$ 43.50	6.3	\$ 252.00	3.2	\$ 409.50	1.1	\$ 210.00
Smooove	\$ 993.50	\$ 35.00	6.8	\$ 270.00	3.5	\$ 448.50	1.2	\$ 240.00
Squirt	\$ 1,029.00	\$ 27.00	7.4	\$ 294.00	3.6	\$ 468.00	1.2	\$ 240.00
Tru Tension Tungsten Race (D.A)	\$ 1,338.28	\$ 559.78	5.7	\$ 228.00	2.9	\$ 370.50	0.9	\$ 180.00
Rock N Roll Gold	\$ 1,457.44	\$ 93.94	9.8	\$ 390.00	5.0	\$ 643.50	1.7	\$ 330.00
Cycle Star Gold (Extrapolated Data)	\$ 1,478.50	\$ 196.00	9.5	\$ 378.00	4.7	\$ 604.50	1.5	\$ 300.00
Wend wax 2	\$ 1,529.50	\$ 154.00	10.1	\$ 402.00	5.0	\$ 643.50	1.7	\$ 330.00
Rex Domestique	\$ 1,843.50	\$ 52.50	15.0	\$ 600.00	7.5	\$ 975.00	1.1	\$ 276.00
Revolubes	\$ 1,858.50	\$ 67.50	15.0	\$ 600.00	7.5	\$ 975.00	2.4	\$ 480.00
AB Graphene Wax (Extrapolated data)	\$ 2,304.66	\$ 156.66	15.6	\$ 624.00	7.8	\$ 1,014.00	2.6	\$ 510.00
White Lightning Epic Ride (Extrapolated data)	\$ 2,771.50	\$ 166.00	18.8	\$ 750.00	9.8	\$ 1,225.50	3.2	\$ 630.00
Muc Off Ludicrous AF (Extrapolated data)	\$ 3,714.00	\$ 445.50	23.7	\$ 948.00	11.9	\$ 1,540.50	3.9	\$ 780.00
Muc Off Hydro Dynamic (extrapolated data)	\$ 4,248.50	\$ 140.00	29.7	\$ 1,188.00	14.9	\$ 1,930.50	5.0	\$ 990.00
Muc Off Nano Lube (Extrapolated Data)	\$ 4,420.00	\$ 280.00	30.0	\$ 1,200.00	15.0	\$ 1,950.00	5.0	\$ 990.00

## EXTREME Conditions (harsh road / moderate offroad)

GRX 810 Components - Extreme Conditions (full mud cx etc)	Total Cost Per 10,000km	Lubricant Cost	Number of chains	Chains Cost	Number of Cassettes	Cassettes Cost	Chainrings Worn	Chain rings cost
Silca Hot Melt	\$ 338.60	\$ 119.85	1.6	\$ 78.75	0.7	\$ 91.00	0.25	\$ 49.00
Mspeedwax New Formula	\$ 573.80	\$ 67.35	3.4	\$ 171.50	1.7	\$ 222.95	0.56	\$ 112.00
Effetto Mariposa Flower Power wax	\$ 859.64	\$ 33.64	5.6	\$ 280.00	2.8	\$ 364.00	0.91	\$ 182.00
Tru Tension Tungsten All Weather	\$ 915.00	\$ 96.00	5.6	\$ 280.00	2.8	\$ 364.00	0.90	\$ 175.00
Ceramic Speed UFO Drip New Formula	\$ 1,058.65	\$ 115.40	6.5	\$ 323.75	3.2	\$ 409.50	1.10	\$ 210.00
Silca Synergetic	\$ 1,482.75	\$ 49.50	9.6	\$ 481.25	4.9	\$ 637.00	1.60	\$ 315.00
Nix Frix Shun (Extrapolated Data)	\$ 1,528.30	\$ 19.80	10.0	\$ 498.75	5.1	\$ 659.75	1.80	\$ 350.00
Silca Drip Batch 2	\$ 1,804.97	\$ 91.72	11.6	\$ 577.50	5.8	\$ 750.75	1.90	\$ 385.00
Allied Grax (Extrapolated Data)	\$ 2,224.00	\$ 43.50	14.7	\$ 735.00	7.4	\$ 955.50	2.45	\$ 490.00
Rex Black Diamond	\$ 2,238.63	\$ 26.98	14.9	\$ 745.50	7.5	\$ 969.15	2.49	\$ 497.00
Rex Domestique (Extrapolated Data)	\$ 2,332.43	\$ 53.50	15.3	\$ 764.00	7.6	\$ 994.00	2.56	\$ 511.00
Revolubes	\$ 2,337.43	\$ 67.50	15.3	\$ 764.75	7.6	\$ 994.18	2.56	\$ 511.00
Smoove (Extrapolated Data)	\$ 2,371.25	\$ 35.00	15.8	\$ 787.50	7.9	\$ 1,023.75	2.60	\$ 525.00
Tru Tension Tungsten Race (D.A)	\$ 2,553.03	\$ 559.78	13.5	\$ 673.75	6.7	\$ 864.50	2.30	\$ 455.00
Squirt (Extrapolated Data)	\$ 2,559.25	\$ 27.00	17.2	\$ 857.50	8.6	\$ 1,114.75	2.80	\$ 560.00
Rock N Roll Gold (Extrapolated Data)	\$ 3,479.44	\$ 93.94	22.8	\$ 1,137.50	11.4	\$ 1,478.00	3.90	\$ 770.00
Wend wax 2 (Extrapolated Data)	\$ 3,612.00	\$ 154.00	23.3	\$ 1,163.75	11.7	\$ 1,524.25	3.90	\$ 770.00
Cycle Star Gold (Extrapolated Data) (Bankrupt?)	\$ 3,626.00	\$ 364.00	21.9	\$ 1,093.75	11.0	\$ 1,433.25	3.70	\$ 735.00
Muc Off Ludicrous AF (Extrapolated Data)	\$ 4,535.25	\$ 445.50	27.7	\$ 1,382.50	13.8	\$ 1,797.25	4.55	\$ 910.00
AB Graphene Wax (Extrapolated data)	\$ 5,558.91	\$ 156.66	36.2	\$ 1,811.25	18.2	\$ 2,366.00	6.10	\$ 1,225.00
White Lightning Epic Ride (Extrapolated Data)	\$ 6,667.25	\$ 166.00	43.8	\$ 2,187.50	21.9	\$ 2,843.75	7.40	\$ 1,470.00
Muc Off Hydro Dynamic (Extrapolated Data)	\$ 10,419.00	\$ 140.00	69.3	\$ 3,465.00	34.7	\$ 4,504.00	11.60	\$ 2,310.00
Muc Off Nano Lube (Extrapolated Data)	\$ 10,675.00	\$ 280.00	70.0	\$ 3,500.00	35.0	\$ 4,550.00	11.70	\$ 2,345.00



## Final observations, summary & recommendations.

This test is actually a bit of rare case where Revolubes is actually a much better lubricant for many than what the test result figures show – it is just – in ZFC opinion – best used in for a specific demographic – being dry road cycling, vs a brilliant lubricant to conquer all cycling demographics.

If used for dry road cycling, it is one of the top lubricants tested to date. It is very low friction and wear. It is super smooth to ride. It is very clean (for a wet lubricant), and a treatment lasts for a very long time. The cost to run for dry road cyclists will be a very low amount, and the cyclist will be very happy. It needs very little maintenance intervals and it is easy to clean and reset. Lots of very important boxes filled with a big green tick.

In fact I was so impressed with it from testing for that demographic that ZFC stocks and recommends Revolubes as a top wet lubricant – mainly so that ZFC has a second genuine brilliant option to sit alongside Silca Synergetic for this demographic. Silca is also of course brilliant, but Silca is funny in that many people absolutely love the brand, but there is also a demographic that is just anti silca due to believing their products are in general overpriced. So, it is great to have another option in that line just in case, and Revolubes really is another brilliant option.

Revolubes is worth the high praise reviews you may see online from road customers. See results photos below:

## Pictures From test

Revolubes post wet contamination block – 4000km into test





Revolubes post wet contamination block – 4000km into test

