



FINISH LINE

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Advanced Technical Information – Finish Line Tubeless Tire Sealant

Finish Line Tubeless Tire Sealant functions fundamentally differently than other sealants on the market. Current latex based sealants cure in tires in relatively short periods of time (+/- 3 months) and come with other inherent shortcomings like unpleasant odors, and difficulty cleaning up. Finish Line met many challenges in developing a sealant that would be completely latex free while still meeting the performance expectations of the industry's leading sealants. The most significant challenge was choosing the type of fibers, the length, shape and diameter of those fibers – these are all specifications that we control. The second challenge was finding a way to keep these fibers, each with different densities and morphologies, suspended in a carrier. If there was separation in the bottle or inside the tire, the sealant would not work. The ultimate result of our efforts was the development of our unique FiberLink™ technology.

FiberLink™ Technology

The FiberLink™ mesh that ultimately seals a puncture, begins with our larger, denser fibers getting trapped in the puncture as air and sealant start to escape. This foundation allows the smaller DuPont™ Kevlar® fibers to settle in and interlink around the larger fibers. With our sealant, as the tire is ridden the rubber flexes which pulls in more fibers allowing the FiberLink™ mesh to build up and strengthen. Optimum results and tighter seals are achieved with time while riding (unlike a chemical latex seal that does not benefit from this flexing).

Usage

Finish Line Tubeless Tire Sealant is formulated specifically for use in tubeless bicycle tires. While the sealant was not designed for use inside inner tubes, or in tubular tires, it will successfully seal punctures in a variety of tubular tires and tubed applications. It is not recommended for tubeless setup of non-tubeless rated tires.

Our sealant has been tested extensively and proven to function well at both mountain and road bike pressures. While the tire does not need to be new, it must be free of other sealants and dry rot. We do not recommend mixing sealants. Since our sealant works via a fundamentally different mechanism than latex sealants, mixing our sealant with any other sealant will reduce its effectiveness. Therefore, when converting from a latex sealant to Finish Line, it is important to remove as much of the old product as possible.

Since our sealant will last the useful life of the tire, conceptually it can be reused or transferred from one tire to another. That said, Finish Line cannot predict how / if the sealant has changed in your tire: For example, how much corrosion inhibitor was consumed? How much of the fibers and fillers have been used in sealing the original tire's bead and other punctures along the way? How much has coated the inside of the old tire? Because we ultimately cannot guarantee the quality of the sealant after it has been used, we recommend fresh sealant for every tire.

Installation

Finish Line Tubeless Tire Sealant can either be installed through Presta valves, with the valve core removed, or poured directly into the tire prior to fully seating the bead. If installing through the valve with our 4 or 8oz bottle, simply snip the tip of the bottle about halfway down for a snug fit over the top of the valve stem (see directions on label). As an additional bonus, since our sealant isn't an adhesive, valve cores won't get gunked-up and compromised like they often do with other sealants.

Often while installing tires with latex based sealants, it is common for sealant to spit and spatter through the bead as the tire is seated; creating a mess as well as the loss of some sealant. Finish Line's FiberLink™ technology dramatically reduces and often prevents this phenomenon. Additionally, since our sealant is latex free, spilled sealant is easily cleaned up with water and a rag.

Once the tire is installed, over time, small amounts of any sealant, (latex and ours) will soak into the rubber. This helps reduce loss of air due to rubber porosity. Our testing shows that tires treated with our sealant lose less air over time than do latex treated tires.

Dosage

Make sure proper dosage is used. Under-dosing is a common problem. If a cyclist (or tester) anticipates significant punctures, we would advise using the higher end of the range. Please see dosage recommendations below:

• Road	2-3 oz / 60-90ml
• CX & Gravel	3-4 oz / 90-120ml
• 26" & 27.5"	3-4 oz / 90-120ml
• 29"	4-5 oz / 120-150ml

We have learned that there can be compromised performance when the dosage is not at recommended levels. On a side note, Finish Line has graduation marks on the back of the 4oz and 8oz labels to help users estimate the dosage.

Since our Sealant is functional down to -10°F / -23°C, it is a great candidate for fat bike usage. We recommend 6-8oz (about 180-240ml) of sealant in a 4" tire and a solid 8oz (about 240 ml) in a 5" tire. With any tire size, if you're doubting your dosage, don't be afraid to add more.

Functionality

Finish Line Tubeless Tire Sealant, like any sealant, is not a miracle maker. However, it will consistently and repeatedly seal punctures up to ¼" (6.35 mm), and these seals are permanent. However, there will be rare times when a puncture does not 100% seal. There are a variety of reasons for this, ranging from contaminants in the seal area, to micro fractures / tears in the rubber, and of course, under-dosing (the most common cause).

As with any sealant, Finish Line Tubeless Tire Sealant is engineered to seal punctures. It is not necessarily designed to seal slices and tears, like for example the ones caused by a box cutter. Of course, depending on the nature of the slice or tear, it may create an effective seal. However, any situation in which the casing of the tire experiences significant damage will pose a substantial challenge to any liquid sealant.

Environmental Concerns

Finish Line has long been committed to producing sustainable, and environmentally friendly products. Our Tubeless Tire Sealant is no different. Most sealants use natural latex from trees and/or synthesized latex, plus ammonia. Some use ethylene glycol to prevent freezing, and often they contain micro crystals, glitter and various types of plastic particles. Our Tubeless Tire Sealant uses non-toxic propylene glycol, water, and our proprietary blend of fibers.

While some have raised concerns about Kevlar® Fibers effect on the environment, and similarities to plastic microbeads; comparing microbeads to the Kevlar fiber is not a correct analogy. While both are resistant to bio-degradation, the microbeads pass through filtration systems, while the Kevlar® fibers would not (they are too large). This leads to microbeads making their way into the food chain where a process of biomagnification begins. Additionally, many microbeads contain harmful chemicals, while Kevlar® fiber is inert and non-toxic.

If you have any additional questions, we would love to hear from you. Please email your questions to informe@finishlineusa.com