



NASA-inspired airless bicycle tires are now available for purchase

Two years ago, we heard how the Ohio-based Smart Tire Company was developing [shape memory airless bicycle tires](#). Well, the resulting Metl tires can now be purchased via – you guessed it – a Kickstarter campaign.

The never-go-flat tires were created in partnership with NASA, which had already [applied the same technology](#) to tires for its planetary rover vehicles ... after all, it would be pretty difficult to fix a flat on the surface of the Moon or Mars. And no, they're not *literally* airless. They're hollow – so they have air *in* them – that air just isn't pressurized, nor is it required for the tire to hold its shape.

At the heart of each Metl tire is a Slinky-like spring that runs all the way around the tire. That spring is made of a shape memory nickel-titanium alloy known as NiTiNol, which is described as being strong like titanium yet also stretchy like rubber.

Importantly, when NiTiNol is placed under pressure, it initially deforms but then goes back to its original shape. This characteristic allows the Metl tire to gently compress and rebound, providing a smooth ride just like a pneumatic tire.

The spring is encased in a poly-rubber material which forms the tire's transparent sidewalls and replaceable tread. According to the company, this setup incorporates only half as much rubber as a regular tire. Additionally, while the tread may have to be replaced roughly every 5,000 to 8,000 miles (8,047 to 12,875 km), the main tire should reportedly last for the life of the bike.