

## The Benefits of Nitrogen for Vehicles with TPMS

**Better Maintenance of Tire Pressure** - Nitrogen migrates through a tire a minimum of 3-4 times slower than oxygen so TPMS alarms will not go off as often.

*"My tire pressure warning light was going off about every 5 weeks and starting to get on my nerves. My husband read about nitrogen tire inflation and suggested I give it a try. Since then, I've been tracking my tire pressure and it was just over a year before that alarm went off again! We now have nitrogen in every vehicle we drive."*

*Sandy B.*

*La Quinta, CA*



*"I had nitrogen put in my tires last November because my computer light came on and said to check tire pressure. We spend 6 months a year in Florida and that is where we were at the time. The service manager at the dealer said that with nitrogen in the tires, the computer won't come on unless they're low. I had all 4 tires done and am really satisfied so far."*

*Bob F.*

*Hudsonville, MI*



**Increased TPMS Life** – Nitrogen extends the life of the TPMS sensor in the tire by eliminating the moisture and contaminants found in compressed air, which can harm the sensor. This also prevents contaminants from blocking the small holes in the sensor that detect the pressure, which can give false TPMS alerts.

**Nitrogen is a Dry Gas** – Nitrogen does not contain moisture or contaminants that are present in compressed air, so a tire's pressure remains more consistent, which is precisely why race teams use nitrogen. The presence of moisture and contaminants causes tires to heat up more while driving, which in turn causes greater fluctuations in tire pressure.

## Limitations of All Inflation Gases (Compressed Air and Nitrogen)

Despite all the benefits for using nitrogen as an inflation gas in vehicles equipped with TPMS, nitrogen is not a magic bullet. Just like any other gas, it can't prevent drastic temperature swings and their effect on sensitive TPMS systems.

Therefore, customers who live in areas of the country where significant temperature changes occur can still experience problems. Here's why. For approximately every 10° change in ambient temperature (+ or -) the PSI will be affected about 1.9% - whatever the inflation gas. The calculations are based on the Ideal Gas Law. More simply, if a tire is filled to 32 PSI at a temperature of 75°F and the temperature drops 10°, the tire pressure will drop to 31.4 PSI; a difference of 0.6 PSI. If a 100 PSI tire is filled at 75°F and the temperature drops 10°, the tire pressure will drop to 98.1 PSI; a difference of 1.9 PSI.

Let's say a dealer sells a customer new tires (obviously inflated cold) on a 70° day and inflates them to 32 PSI. When the temperature drops to 20°, they will lose approximately 3 PSI - and that's definitely enough to set off some sensitive TPMS sensors whose alarms are set for 10% under-inflated levels. If the tires were inflated hot, you'd probably lose another 3 PSI on top of that! The good news is that the tire pressure comes back as the temperature comes back.

Drastic temperature swings may set off TPMS alarms - and that's a problem no inflation gas can solve. Even so, we recommend inflating tires with nitrogen to the cold tire pressure recommended by the manufacturer on the door jamb - just as with regular compressed air. And, nitrogen still has benefits over compressed air with regard to heat build-up and pressure while driving - after the tires heat up.