

# Personal Business

## For the motorhead who has everything: Tires filled with nitrogen

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By Len Barcoucky, Pittsburgh Post-Gazette

Joe Goral of Cranberry tries to take good care of his cars. "I'm always checking fluid levels and tire pressure. I believe in preventive maintenance."

So when the Costco Tire Center in Cranberry starting offering to fill new tires with nitrogen instead of compressed air, Goral gave it a shot. He was curious to find out whether the nitrogen would make a difference in handling, mileage and tread wear.

Nitrogen is an odorless, colorless, inert gas, meaning it doesn't mix easily with most other elements. Air is about 78 percent nitrogen by volume, and represents most of what we breathe in and out. Chemical No. 7 on the periodic table, nitrogen falls between carbon and oxygen, which accounts for another 20 percent of the atmosphere. And, Costco executives say, it offers several advantages over compressed air.

"The one main purpose of using nitrogen is to stabilize the tire's inflation pressure," said Robert Moyer, Costco's director of North American tire sales and service. "Nitrogen molecules leak out of the tire at a much slower rate than oxygen."

Perhaps feeling the hot breath of liability lawyers on his neck, Moyer quickly added that drivers of vehicles with nitrogen-filled tires still should check tire pressure at least monthly.

Several benefits flow from maintaining constant tire pressure, including extended tread wear, better fuel economy and improved performance, he said.

There also is evidence that nitrogen offers some other advantages, Unlike oxygen, which mixes chemically with other materials quickly, as in combustion, or more slowly, as in rust, nitrogen won't combine with either the rubber tire or its metal rim.

Compressed air also has water vapor, an ingredient that can encourage corrosion. It also contains a long list of trace gases, including argon and carbon dioxide.

Costco began offering free nitrogen replacement to new tire buyers after Michelin, the French-based international maker of tires and travel guides, endorsed the concept. The company also sells Bridgestone tires. The Japan-based tire giant agreed that use of nitrogen would not invalidate any of its warranties.

Many customers to Costco's Tire Center in Cranberry appeared surprised to learn that their new tires would be filled with compressed nitrogen. Several were avidly reading the company's tri-fold brochure that describes the gas and its effects on tires and travel.



Bob Donaldson, Post-Gazette

**Paul Green installs tires on a van at Costco's Cranberry store, filling the new tires with pure nitrogen. The company says nitrogen promotes more consistent tire pressure and inhibits corrosion.**

Once the potential benefits have been explained, no one has requested that new tires be filled with compressed air, according to Paul Green, tire center supervisor.

North Dakota-based Branick Industries is the maker of two-unit system used at the Cranberry Costco to separate nitrogen from the atmosphere, compress it and store it in a 5-foot-tall green tank. The nitrogen inflation system uses a fine membrane to separate nitrogen and oxygen molecules, producing a dry gas that is about 99 percent pure nitrogen.

Because it is impractical to remove all the atmospheric gases from a tire being filled, Costco technicians strive for 93 percent nitrogen. Tire manufacturers are continuing their research into an optimum mix, and that percentage may be adjusted over time, Moyer said.

The most common question customers ask is what happens if their tire pressure drops and they are not near a garage or tire store that can provide nitrogen? Topping off with compressed air won't hurt, Moyer said, and the tire can be purged and refilled with nitrogen on a future shopping trip.

Use of nitrogen in tires is nothing new, Moyer said. The U.S. military, Nascar and NASA all use the inert gas to fill high-performance tires.

"What we are trying to do as a company is increase the safety of our customers at no additional cost," said Duane Winterbottom, manager of the Cranberry Costco. "Low air pressure is a core issue in tire failure."

Costco isn't alone in offering nitrogen in new tires.

Pep Boys auto parts and service centers have been test marketing nitrogen as an option to compressed air in some of its southern stores, spokesman Bill Furtkevic said.

It was still too early to decide whether the pilot program would be expanded into other markets, including Pittsburgh, he said. Pep Boys charges \$2 per tire for a nitrogen fill-up.

Modern Tire Dealer, a trade publication based in Akron, reported in its July issue that several regional tire dealerships in New York, Ohio and Florida were offering nitrogen as an option. Costs range as high as \$5 per inflation for a tire purchased elsewhere, according to the magazine.

"I don't know much about [nitrogen]," admitted Mike Joseph of Cranberry as he waited on a bench outside the Costco Tire Center for his vehicle. "But if it's been good enough for the military, I'll give it a try."