

## ***Tech Tip: Nitrogen Gas (inflating tires)***

Recently, nitrogen gas (for use in inflating tires) has become available to the general consumer through many retailers. Some have promoted this with reasonable results, while others, well let me just say have a tendency to over sell the benefit.

Therefore, this month's Tech-Tip will hopefully aid you in identifying fact from hype.

### **First, GM's Position on the Use of Nitrogen Gas in Tires**

General Motors does not oppose the use of purified nitrogen as an inflation gas for tires. We expect the theoretical benefits to be reduced in practical use due to the lack of an existing infrastructure (few locations) to continuously facilitate inflating tires with nearly pure nitrogen. Even occasional inflation with compressed atmospheric air will negate many of the theoretical benefits. Given those theoretical benefits, practical limitations, and the robust design of GM original equipment TPC (tire performance criteria) tires, the realized benefits to our customer of inflating their tires with purified nitrogen are **expected to be minimal**.

### **The Promise of Nitrogen: Real World Use**

Nitrogen inflation can provide **some benefit** by reducing gas migration (**pressure loss**) at the molecular level through the tire structure. NHTSA (National Highway Traffic Safety Administration) has stated that the inflation pressure loss of tires can be up to 5% a month. Nitrogen molecules are larger than oxygen molecules and, therefore, are less prone to "seeping" through the tire casing.

Another potential benefit of nitrogen is the **reduced oxidation** of tire components. Research has demonstrated that oxygen consumed in the oxidation process of the tire primarily comes from the inflation media. Therefore, it is reasonable to assume that oxidation of tire components can be reduced if the tire is inflated with pure nitrogen. However, only very small amounts of oxygen are required to begin the normal oxidation process. Even slight contamination of the tire inflation gas with compressed atmospheric air during normal inflation pressure maintenance, **may negate the benefits of using nitrogen**.

Regardless of the inflation media for tires (atmospheric air or nitrogen), **inflation pressure maintenance of tires is critical** for overall tire, and ultimately, vehicle performance.

**Maintaining the correct inflation pressure** allows the tire to perform as intended by the vehicle manufacturer in many areas, including comfort, fuel economy, stopping distance, cornering, traction, treadwear, and noise.

Therefore, to close this month's **Tech-Tip** we will pose the following question that was mentioned in a previous month's Technical –Tip Newsletter. This month we will select the **third correct answer** for our award winning, highly sought after gift.

Correct tire inflation pressure can be found ? “**A** – on the tire sidewall” “**B** – on the vehicle's placard (label usually on the drivers door sill) “**C** – local service professional”