



## SynMax Performance Lubricants

13750 Metric Drive, Roscoe, IL. 61073 (815) 389-9999 [www.synmaxperformancelubricants.com](http://www.synmaxperformancelubricants.com)

### **TECHNICAL BULLETIN – WHY FUEL GOES BAD IN STORAGE**

Every year, a number of Classic Car, Hot-Rod, Hi-Performance and Competition Racers are surprised to learn how quickly gasoline loses performance and deteriorates.

#### **After a normal period of storage:**

- Motor does not start.
- Motor will not idle or run properly.

#### **EXPLANATION:**

Gasoline can stay fairly fresh for a while when stored in a sealed and non-vented container. A Sealed container will keep the gasoline from evaporating the “light ends”. “Light Ends” of gasoline is what allows the fuel to ignite easier at first start up when the engine is cold.

The automotive gas tank and fuel system is not sealed and is vented to the atmosphere.

The non-sealed / vented gas tank and fuel system means the “fresh life” of the gasoline is only good for about thirty (30) days.

Classic, Hot Rod and Competition Race Cars are normally stored from fall to late winter/spring; usually with wide temperature ranges in warm and humid conditions.

This is why the motor typically experiences many of the worst fuel-related performance issues when the fuel is left in vented storage for extended periods of time.

#### **HOW DOES THIS HAPPEN?**

The vented fuel tank actually breathes during the wide temperature swings. “Light-Ends” evaporate and saturate the air inside the tank. As the tank and fuel warms, the air-fuel vapor is pushed outside the tank through the vent. Then the tank cools fresh air is drawn back in.

Warm and cool cycles continue to repeat when gasoline warms up; the Light Ends evaporate, saturate the air in the tank, vapor is pushed out the vent as fresh air is drawn back in when the gasoline cools.

Slowly over a period of time, gasoline goes “flat” after these warming and cooling cycles.



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**With the evaporation of fuel, the other problem is “soluble gum”.**

Soluble gum is formed by oxidation of certain hydrocarbons which combine slowly in the air and form gum. When gasoline evaporates, soluble gum is the sticky goo left over which coats and/or plugs fuel pumps, fuel lines, carburetor float bowls/ valve bodies / jets and injector nozzles.

Gasoline manufacturers are required within the formulation to contain a deposit-control additive. If the gasoline contains a noticeable amount of soluble gum, then the normal amount of deposit-control additive may not be enough to cleanse away the left over gum from storage.

#### **EASY SOLUTIONS:**

- Keep your tank full and store at a stable temperature to minimize (not eliminate) and reduce the temperature swings
- With a double dose of premium fuel system cleaner; pre-treat gasoline before storage, or post-treat gasoline with the first tank in use. This helps prevent the fuel system and motor from performance and drivability problems after being stored.

Premium fuel system cleaner really can make a difference to help keep original performance when used on a continued basis. Premium fuel system cleaner will dissolve and remove the gum, varnish and internal gasoline residues including carbon from the combustion chamber, piston and valves.

Premium fuel system cleaner will also provide an upper cylinder lubricant to free up and release piston rings and valves to operate cleaner, smoother and more efficient.

- Placing a fuel catalyst system into the fuel tank as a further proactive stance and preventative measure. By using a fuel catalyst system, this will keep the fuel fresher and longer by continually “cracking” the longer chain hydrocarbons down into the “Light Ends” which allows the fuel to remain stable and ignite easier after periods of storage.