File in Section: 00 - General Information
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Service Bulletin

INFORMATION

Subject: **Fuel and Oil Additives - Facts and Myths - Maximizing Gasoline Fuel Economy**

Models: **2017 and Prior GM Passenger Cars and Trucks**
This Bulletin applies to Export Models.

Attention: **Please direct this bulletin to the Service Manager, Service Consultants and the Sales Staff. A copy of this bulletin is encouraged to be given to the customer as it is written with the consumer in mind. This bulletin may be posted in the customer lounge or waiting area.**

This Bulletin has been revised to add Model Years, add graphics, add a Section for Web Sites and update the information. Please discard Corporate Bulletin Number 05-00-89-072C.

A Statement About Fuel Economy

Sustainable energy use meets our present energy needs without compromising the ability of future generations to meet theirs. Almost all of the cars and trucks we drive run on fuels derived from oil, which is a non-renewable resource. Therefore, it makes sense to use fossil fuel resources such as oil in the most efficient way possible.

The information below is presented in three sections:

- **What Not To Do: Engine and Fuel Additives, Alternate Fuels, and Miracle Products**
- **What to Do: Maximizing Fuel Economy/ Minimizing Costs**
- **Web Sites**

What Not To Do: Engine and Fuel Additives, Alternate Fuels, and Miracle Products

Various unproven products with claims to improve vehicle fuel economy have been reported ranging from magnets that align molecules to chemical combustion improvers.

Most products claiming to provide benefits are based on unsubstantiated claims. Those that do present scientific results generally either have too little supporting data to be conclusive, have not conducted experiments in a controlled fashion, or cannot be substantiated by anyone else but the product's manufacturer. A review of the information shows that the majority did not work, and for those that showed some effect, the benefit was too small to be cost effective.

The U.S. Federal Trade Commission summarizes results for products tested by the federal government at their website.

Harmful Ideas That May Damage the Vehicle and Increase Emissions

Notice: **Never put Kerosene or Diesel Fuel into any gasoline engine vehicle. This may result in inconsistent performance, driveability concerns and damage to the engine that is not covered by the vehicle warranty.**

- A recent poor idea to improve fuel economy is to blend either kerosene or diesel fuel into gasoline. Both kerosene and diesel fuel are distillate fuels meant for use in compression ignition engines, not spark ignition engines. They have very low octane and since they are heavier (higher density) than gasoline, they will cause heavy engine deposits, degradation of engine oil and very poor driveability.

Notice: **Never put acetone, ketones, or methanol additives into any gasoline engine vehicle. Some of these solvents may damage or corrode the fuel system. They may also damage the painted surfaces of the vehicle if spilled.**

Damage to vehicle components that result from using non-approved or aftermarket additives and devices are not covered by the vehicle warranty.

- Chemicals that are normally used as solvents should not be used. These include acetone, ketones, and methanol. These solvents may be incompatible with rubber and/or sealing components, and in case of contact, may dissolve

the vehicle's paint finish. In the case of methanol, corrosion of metal parts in the fuel system may occur.

What to Do: Maximizing Fuel Economy and Minimizing Costs

The best fuel economy possible is the direct result of proper maintenance and good driving habits. Listed below are some generally accepted recommendations to achieve the best fuel economy possible. The first sub-section is **Vehicle Considerations** and the second sub-section is **Driving Habits Affect Fuel Consumption**

Vehicle Considerations

- **Accessories:** Add on equipment such as: bike racks, running boards, spoilers and Track Packages may reduce fuel economy due to increased drag and wind down force.
- **Air Filter:** A vehicle that has a dirty air filter can't efficiently draw air into the engine. This restriction forces the engine to expend energy to "breathe" wasting fuel in the process. Air filter replacement intervals are found in the Owner Manual.
- **Anticipate Upcoming Traffic Lights.** Avoiding a complete stop can help to save fuel. If the light can be seen and is about to turn green and you can safely slow down just enough without stopping, less fuel will be consumed.

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Ask for and use engine oils that meet the dexos® specification. Engine oils that have been approved by GM as meeting the dexos® specification are marked with either of the dexos1® approved logos that are shown. For additional dexos® information, refer to the link in the Web Site section of this Bulletin.

Engine Oil — dexos® GM Vehicles do not require additional engine oil additives. Some additives may cause harmful effects to the internal seals and may void the terms of the vehicle Warranty. Always use the proper viscosity oil in the engine (i.e. 5W-30). Using oil that has a higher than required viscosity will create more drag on the internal components of the engine especially when cold. The vehicle Owner Manual contains information on the proper type and viscosity of oil for the vehicle.

Certain Model Year Corvettes use Mobil 1™ engine oil and if so it is indicated on the engine oil fill cap.

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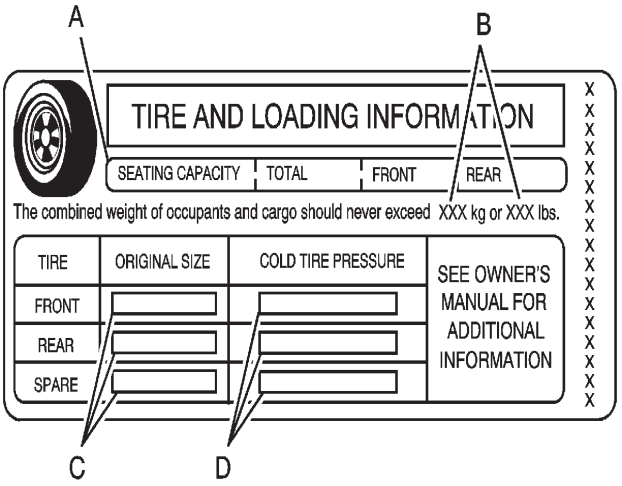
Older vehicle Owner Manuals indicate to look for the American Petroleum Institute (API) Starburst symbol. The Starburst symbol indicates that the oil has been certified by the API. dexos® is also an excellent choice for these older vehicles. Look for this information on the oil container, and use only those oils that are identified as meeting GM Standard GM6094M and have the starburst symbol on the front of the oil container.

- **Engine Oil Life System:** Newer GM vehicles have an Engine Oil Life System. This computer system indicates when to change the engine oil and filter by displaying a message on the Driver Information Center (DIC). This computer algorithm is based on engine revolutions and engine temperature, and not on mileage. Based on driving conditions, the mileage at which an oil change is indicated can vary considerably. For the Engine Oil Life System to work properly, the system must be reset every time the oil is changed. Aveo, Wave, Optra and Epica currently do not have an Engine Oil Life System.
- **E85 FUELS:** Only vehicles designated for use with E85 should use E85 blended fuel. E85 compatibility is designated for vehicles that are certified to run on up to 85% ethanol and 15% gasoline. All other gasoline engines are designed to run on fuel that contains no more than 10% ethanol. Use of fuel containing greater than 10% ethanol in non-E85 designated vehicles can cause driveability issues, service engine soon indicators as well as increased fuel system corrosion.
- **Malfunction Indicator Lamp:** When the Malfunction Indicator Lamp (MIL) also known as the Service Engine Soon (SES) Lamp is illuminated, the vehicle's On-Board diagnostics computer has identified that something is not working properly. GM vehicles have many sensors that the computer uses to both control and sense actual fuel usage. When the MIL illuminates it is an indication that the engine has lost some of its ability to run at peak efficiency. This may result in increased fuel consumption, increased emissions, and/or driveability concerns.



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- **Tire Pressure:** A vehicle specific Tire and Loading Information label (typical view) is attached to the driver door or center pillar (B-pillar) depending on the vehicle. The tire and loading information label shows the number of occupant seating positions (A), the maximum vehicle capacity weight (B) in kilograms and pounds, the size of the original equipment tires (C) and the recommended cold tire inflation pressures (D). One of the major contributors to poor fuel economy are under-inflated tires. Tires that are low on air pressure create drag that the vehicle's powertrain must overcome, wasting fuel. Always keep tires inflated to the proper pressure as shown on the vehicle Tire and Loading Information label. The correct tire air pressure promotes fuel efficiency and reduces tire wear, further decreasing vehicle operational costs per mile.
- **TOP TIER™ Detergent Gasoline:**

Notice: **DO NOT confuse the Top Tier™ Fuel designation with higher octane (Plus/Premium Grade Fuel) commonly sold at most gas stations. Plus and Premium fuels are required in some high performance GM vehicles. However, they do not necessarily represent the higher detergency that is present in available TOP TIER™ Detergent Gasolines.**

TOP TIER™ Detergent Gasoline is the premier standard for gasoline performance. By selecting fuels designated as TOP TIER™ Detergent Gasoline, this helps drivers avoid lower quality gasoline which can leave deposits on critical engine parts, reducing engine performance. These fuels are preferable when and where available. They help to keep the fuel injectors and intake valves free of deposits. Clean engines provide optimal fuel economy, performance and reduced emissions.

For additional information regarding Top Tier fuels and available Retailers, refer to the latest version of Corporate Bulletin Number #05-06-04-022.

Additional gasoline brands are added to the TOP TIER™ list as they meet the standards. For the very latest list of TOP TIER™ Retailers, refer to the link in the Web Site section of this Bulletin.

- **Recommended Grade (Octane) Fuel:**

Notice: **For high performance GM vehicles that DO require Premium (91 octane or higher) fuel, you MUST use fuels of at least this octane. Use of lower octane fuel may result in reduced performance, knocking, and/or permanent engine damage not covered under the terms of the New Vehicle Warranty.**

Purchasing higher than required octane fuel is a waste of money. Using higher octane fuels in a vehicle that only required regular unleaded fuel will neither increase performance nor improve gas mileage. Only use the octane rated fuel recommended for the vehicle. Refer to the Owner Manual.

- **Spark Plugs:** Most current GM vehicles have 100,000 miles (160,000 km) service intervals for spark plugs. Spark plug replacement intervals are found in the Owner Manual.

  ⇒ If the vehicle has reached this Maintenance Schedule Interval, replace the spark plugs to assure proper performance and efficient operation.

  For spark plug service intervals on Chevrolet Aveo, Optra, Epica, Pontiac Vibe, Wave and Saturn Astra, refer to the applicable Maintenance Schedule in SI.

- **Utilize Cruise Control.** Maintain a consistent speed by using the cruise control (if equipped). Use rest areas or truckstops located at the top of hills. Stopping at the top of a hill allows you to ease back on to the highway proceeding downhill, which requires less fuel.

Driving Habits Affect Fuel Consumption

Many variables affect fuel consumption, including but not limited to: Aggressive and/or timid drivers, altitude, ambient temperature, humidity, road conditions, traffic, vehicle condition and extreme weather conditions. Motorists that are too aggressive or too timid in their driving style are the cause of major traffic jams, scientists have discovered. Researchers say aggressive motorists, who drive too fast and too close to the vehicle in front, or timid motorists, who leave too big a gap, send a "wave of deceleration" backwards down the road until traffic grinds to a stop. This driving style leads to stop-start traffic jams which increase fuel consumption and emissions.

- **Avoid Extended Idling:** There is no need to idle the engine until it reaches full operating temperature. Extended idling time wastes fuel and has a negative impact on miles per gallon. When using the Remote Start feature (if equipped) keep the idling time to a minimum. Starting the car on a very cold day and leaving immediately may actually cause the engine to consume more gas. Warming it up and thinning the oil for a few minutes can actually improve mileage.
- **Combine Trips:** Any vehicle uses much more fuel when the engine is cold. This is especially true in the winter months when the engine will take the longest to warm up. Combine errands or trips so that the vehicle only needs to warm up once to encompass many different stops.
- **Empty the Trunk:** Avoid leaving unnecessary items in the trunk. It takes power to move increased weight and that means more gasoline consumption and reduced performance. While the change may be slight, multiplied by thousands of miles it adds up.

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- **Odometer Accuracy:** Odometer accuracy can be verified using Interstate or US Highway mile markers. Mile markers are the little green signs with the white numbers printed on them dotted along the roadside. Well traveled routes will have them every mile, some Interstates even display them in ***tenths of miles***. Back country US Highways will spread them out as thinly as one every twenty miles or so. Compare the distance between the beginning and ending odometer reading to the distance between the beginning and ending mile marker signs. In Canada, distance (kilometer) markers are also commonplace on many Canadian highways.

  Odometer accuracy can also be verified by using Google Earth™ mapping service. Google Earth™ includes several tools for measuring distances

very accurately - right down to the millimeter level. With the Google Earth™ method, measure a very specific route on the computer, and then go out and drive it to make the mileage comparison.

- **Odometer Trip Setting:** Some vehicles are equipped with a “Trip A” and “Trip B” setting on the Driver Information Center (DIC). This display shows the current distance traveled, in either miles (mi), or kilometers (km) since the trip odometer was last reset.

  This display may also show the approximate average miles per gallon (mpg) or liters per 100 kilometers (L/100 km). This number is calculated based on the number of mpg or L/100 km recorded since the last time this menu item was reset. This number reflects only the approximate average fuel economy that the vehicle has right now, and will change as driving conditions change.
- **Slow Down, Drive Smoothly:** Avoid quick/full throttle acceleration from a standstill in town and high cruising speeds on the interstates. While the optimum MPG or L/100 km for highway cruising speed varies from vehicle to vehicle, faster is almost always worse. If the vehicle is equipped with a Driver Information Center that displays Instant Fuel Economy, select that display and vary the vehicle’s cruising speed while on the highway. The display will change continuously with uphill and downhill sections but you should quickly be able to identify on level ground the speed range that the vehicle performs best in.
- **Weight:** Weight is one of the biggest causes for loss of kinetic energy in non-hybrid cars. An extra 100 pounds (45 kg) increases fuel consumption by 1–2%. Weight is the most important factor in stop-and-go driving. Don't remove things from the car that are needed frequently. Instead make sure these items are in the car and readily accessible, because wasted trips to retrieve or replace them will be much worse than a little less gas mileage.

Web Sites

- **dexos® Engine Oil:** For additional information and available licensed brands visit this General Motors website: **http://www.gmdexos.com**
- Additional Information about ways to maximize fuel economy, driving more efficiently, detailed test information and gas mileage estimates for cars dating from 1985 can be found on the web at the official U.S. U.S. Department of Energy website. Visit: **http://www.fueleconomy.gov/**
- For Federal Trade Commission “Gas Savings Products” information, visit: **https://www.consumer.ftc.gov/articles/0057-gas-saving-products**
- You can take many free or low-cost steps to save on gas, including buying only the octane level you need, watching your speed, properly maintaining the vehicle, and checking tire pressure. For more Federal Trade Commission, Saving Money on Gas tips, visit: **https://www.consumer.ftc.gov/articles/0098-saving-money-gas**
- For a list of TOP TIER™ Detergent Gasoline Retailers, visit: **http://www.toptiergas.com/retailers/**

Trademark Footnotes

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