

# Acetone In Fuel Said to Increase Mileage

*Readily-available chemical added to gas tank in small proportion improves the fuel's ability to vaporize completely by reducing the surface tension that inhibits vaporization of some fuel droplets.*

by Louis LaPointe

Adapted by [Sterling D. Allan](#) and [Mary-Sue Haliburton](#)  
with LaPointe's permission for *Pure Energy Systems News*

See also, [Acetone Data](#) • [FAQ](#)



**A**cetone (CH<sub>3</sub>COCH<sub>3</sub>) is a product that can be purchased inexpensively in most locations around the world, such as in the common hardware, auto parts, or drug store. Added to the fuel tank in tiny amounts, acetone aids in the vaporization of the gasoline or diesel, increasing fuel efficiency, engine longevity, and performance -- as well as reducing hydrocarbon emissions.

## How it Works

Complete vaporization of fuel is far from perfect in today's cars and trucks. A certain amount of residual fuel in most engines remains liquid in the hot chamber. In order to be fully combusted, the fuel must be fully vaporized.

Surface tension presents an obstacle to vaporization. For instance the energy barrier from surface tension can sometimes force water to reach 300 degrees Fahrenheit before it vaporizes. Similarly with gasoline.

Acetone drastically reduces the surface tension. Most fuel molecules are sluggish with respect to their natural frequency. Acetone has an inherent molecular vibration that "stirs up" the fuel molecules, to break the surface tension. This results in a more complete vaporization with other factors remaining the same. More complete vaporization means less wasted fuel, hence the increased gas mileage from the increased thermal efficiency.

That excess fuel was formerly wasted past the rings or sent out the tailpipe but when mixed with acetone it gets burned, though the engine still thinks it is running straight gas.

Acetone allows gasoline to behave more like the ideal automotive fuel which is PROPANE. The degree of improved mileage depends on how much unburned fuel you are presently wasting. You might gain 15 to 35-percent better economy from the use of acetone. Sometimes even more.

## How Much to Use

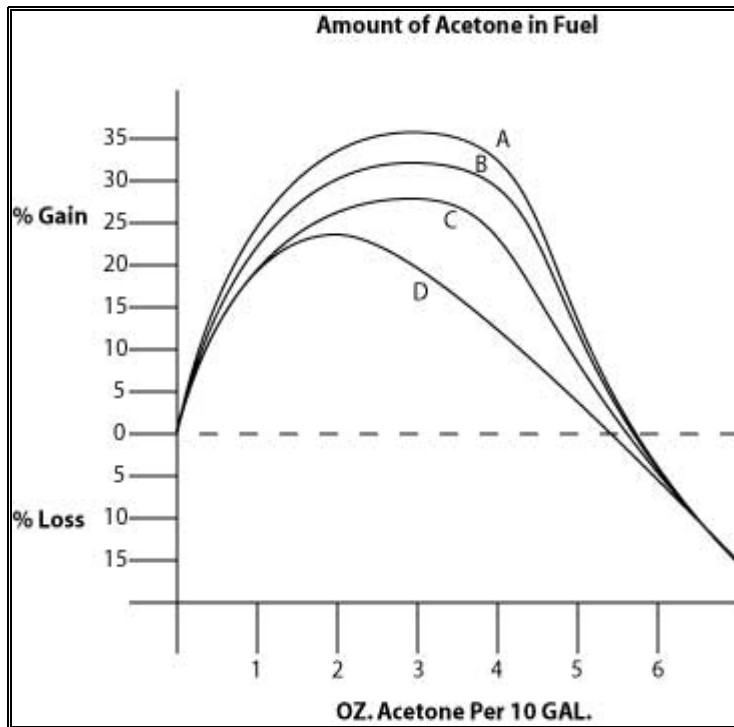
Add in tiny amounts from about one part per 5000 to one part per 3000, depending on the vehicle -- just a few ounces per ten gallons of gas. This comes to between 0.0003 % to 0.0025 % acetone maximum or approximately 1/15th of one-percent. Note that is around .78 cc per liter or one ounce per 10 gallons. Not more than three oz. per 10 gallons.

### Acetone

A colorless, volatile liquid with a sweet odor. It is considered the least toxic solvent in industry. It can occur naturally. It is used in the production of lubricating oils, chloroform, pharmaceuticals, pesticides, paints, varnishes and lacquers. If present in water, it is more likely to volatilize or biodegrade before bioaccumulating or adsorbing to sediments. Acetone will also readily volatilize and biodegrade in soil. It is also a common laboratory contaminant, so its presence in a sample does not always indicate its presence in the environment. Synonyms - Dimethylketone and 2-propanone.

-- [Environmental Terms Glossary](#)  
(U.S. Military)

**Additive:** changes the specifications of the base it is added to



**Figure 1:** Percentage MILEAGE GAIN when a tiny amount of acetone is added to fuel. The curves A B C show the effect on three different cars using different gasolines. Some engines respond better than others to acetone. The D curve is for diesel fuel. Too much acetone decreases mileage slightly due to adding too much octane to the fuel. Too much additive would upset the mixture ratio because acetone (like alcohol) is a light molecule and tends to lean the mixture.

After you first find the best gasoline in your area, then try the acetone amount for your car per ten gallons, and if you

**Metric Conversions**  
[calculator](#)

*One fluid ounce (US) is equal to 29 milliliters.* Ergo, a 100 ml. graduated cylinder would be a suitable choice for this project.

*Ten gallons (US) = 40 liters*  
 (As there are three zeroes after the decimal point before you get to any numerals, I think that can be ignored to make the numbers easier.)

**Note** that the UK/Canada old imperial system is not the same as US imperial measurements:

- **Gallons (UK)**  
A British imperial capacity measure (liquid or dry) equal to 4 quarts or 4.545 liters.
- **Gallons (US)**  
United States liquid unit equal to 4 quarts or 3.785 liters.

-- [Mary-Sue Haliburton](#), PESN

are happy with your newfound mileage, you might want to try stopping the use of acetone for a couple of tanks. Watch the drop in mileage. It will amaze you. That reverse technique is one of the biggest eye openers concerning the use of acetone in fuel.

In a 10-gallon tank of gasoline, use one to three ounces of pure acetone to obtain excellent mileage improvements. In a ten-gallon tank of diesel fuel, use from 1 to 2 ounces of acetone. Performance goes up too. Use about a half-teaspoon of acetone in the fuel tank of a 4-cycle lawnmower or snowblower. Or you can apply it with an eyedropper.

## Where to Get Acetone

The pure acetone label is the only additive suggested and is easily available from most drug stores in 16-ounce plastic bottles and in one-gallon containers from some large fleet farm supply stores. But any acetone source is better than none. Containers labeled *acetone* from a hardware store are usually okay and pure enough to put in your fuel. We prefer cans or bottles that say 100-percent pure. The acetone in gallons or pints we get from Fleet Farm are labeled 100 % pure. The bottles from Walgreen say 100 % pure. Never use solvents such as paint thinners or unknown stuff in your gas. Toluene, benzene and xylene have been okay if they are pure but may not raise mileage except when mixed with acetone. However the aromatics also raise octane.

## Adding Acetone to Your Tank

When you fill up with fuel, note the number of gallons added, then calculate the right amount of acetone to add. Less is more. Remember all gasoline is different. Some will work better than others in the presence of acetone which is strictly a vaporization tool, rather than a fuel additive that alters combustion. The car computer still thinks it is running straight gasoline. None of your settings are altered. None of your engine parts are affected. Check out [ScanGauge](#) for an inexpensive MPG device.

Some stores sell acetone in metal cans of various sizes, which are safe to keep indoors. However, it is difficult to pour from these cans, which have a flat top and short neck from which spillage is inevitable. In any case, while handling acetone, you should be wearing rubber gloves.

One option is to get a small graduated cylinder (available from science supplies store or some pharmacies). The small ones have larger intervals between markings so that it is easier to fill them to the level desired. The narrow cylinder can be held to the neck of the can to catch all drips. Then from the cylinder you can pour neatly into the tank. The small pouring spout suitable for laboratories prevents drips onto the paint.

Being etched with neat lines at each milliliter, these graduated cylinders are also good for measuring precise amounts -- in ounces or milliliters.

## Additional Benefits

In addition to increased mileage acetone added to fuel boasts other benefits such as increased power, engine life, and performance. Less unburned fuel going past the rings keeps the rings and engine oil in far better condition.

A tiny bit of acetone in diesel fuel can stop the black smoke when the rack is all the way at full throttle. You will notice that the exhaust soot will be greatly reduced and your truck or car runs smoother.

Acetone can reduce hydrocarbon emissions up to 60 percent. In some older cars, the HC readings with acetone in a 1986 GMC went from 440 PPM to 195, as just one example. Though mileage gains taper off with too much acetone, hydrocarbon emissions are nevertheless greatly reduced. Pure acetone is an extremely clean burning fuel that burns in air with a pretty blue, smokeless flame.

Acetone reduces the formation of water-ice crystals in below-zero weather which can damage the fuel filter. Change that fuel filter every year to protect injectors.

There are no known bad effects and every good reason to use acetone in your fuel. I have never seen a problem with acetone, and I have used ACETONE in gasoline and diesel fuel and in jet fuel (JP-4) for 50 years. I have rigorously tested fuels independently (with burns all over me) and am considered an authority on this important subject.

## Cautions

Keep acetone away from painted surfaces, such as the paint on your car under the gas tank opening. Acetone is the key ingredient in paint remover. In addition to paint, fuels, including acetone, gasoline alone can also dissolve asphalt and most plastics.

Never allow skin contact with it. It may damage clothing as well. Don't breathe it. Keep children away from all dangerous chemicals. Read the directions on the container.

Acetone is a highly flammable liquid, as is gasoline. Do not expose it near a flame or spark. Acetone should be stored outside, with proper ventilation, not inside your house. Gasoline and/or acetone will dissolve cheap plastics, so be sure the container you store it in will not deteriorate. Read all the precautions on the labels.

### Acetone and Your Engine

Acetone is known to deteriorate cheap plastics and other substances. While the components in a car's fuel system should be of high quality, and thus immune to any deleterious effects from exposure to acetone, be aware that "ideal" is not always the case in practice. Be advised that not all systems have been tested against acetone. Until such thorough testing has been accomplished and certified by a accredited authority, you assume your own liability for experimentally testing acetone in your particular system.

## No Issues with the Engine Parts

I have soaked carburetor parts in acetone for months and even years to see if there is any deterioration. Any parts made to run with gasoline will work with acetone just fine. I presently have parts soaking in 1, 2, 5, and 10 % acetone/gasoline mixes as well as just gasoline. That is 20 to 200 times too much just to be sure. The 30R7 rated parts are in perfect condition. All my tests have been run with Texaco gasoline. I tested the gas stations in my area to FIRST find the best gasoline BEFORE putting acetone in the tank. But I have no idea from a pragmatic view what other gasolines do except that when I attempt to use them, my MPG drops like a rock. So for purely monetary reasons, I run the best available gasoline. When my dyno is built this summer, I will test all the gasolines in my area and publish the results on the web. I hear from engineers out West that Chevron gas is very good. I used it and it was fine during trips to California. I attach more credence to engineers who report things of interest to me because of their training and knowledge of testing methods. You may want to look up *Science and Testing Methods* in my site.

## Contrast with Alcohol

In contrast, alcohol has been shown to be corrosive in an engine, yet they put THAT into gasoline. Alcohol in general is anti-mileage. Alcohol is no good in fuels. In Brazil, millions of engines and fuel systems were ruined by alcohol. Yet they are talking of doubling the amount of alcohol in gasoline.

Furthermore, alcohol *increases* surface tension, producing the opposite effect from acetone. Alcohol in fuel attracts water. This hurts mileage because water acts like a fire extinguisher. Some cars may run badly and even quit due to the incombustible nature of the water-laden fuel. We know of a dozen cars that

recently stopped running due to water in the alcohol and gas mixture. In my Neon, it frequently has cut the MPG in half on trips when I take pot luck at the pump.

In below-zero weather, the water and alcohol can form abrasive, icy particles that may damage fuel pumps and clog injectors.

### **Has Not Been Warmly Received**

Questions asked of someone in the petroleum industry regarding ACETONE will often automatically trigger a string of negative reactions and perhaps false assertions. We may have heard them all. The mere mention of this additive represents such a threat to oil profits that you may get fabricated denials against the successful use of acetone in fuels.

The author has never found any valid reason for not using acetone in gasoline or diesel fuel. Plus it takes such a tiny amount to work. No wonder they fear this additive.

### **Political Action**

You might Email this article to your government representative. After sufficient data has been collected, and that data supports the conclusions presented here, ACETONE should be ordered by Federal Law to be present in all fuels. While you're at it, request that vehicles be equipped with a MPG read-out to make it easier for consumers to know what is and is not working to improve their mileage.

### **If You Want to Do Independent Testing**

For those of you who like to see the data yourself, there is a great little device available to check your exact gas mileage and more. See [ScanGauge](#) for an instrument that fits any car 1996 or newer. And some 1995 models. It measures your real-time MPG, inlet and coolant temperatures and many more details as you drive. This inexpensive tool should end a lot of debate over what works for mileage and what does not. We use the TRIP function to average the MPG at a steady 50 MPH both ways.

Since the fuel from every gas station is different from the next, the MPG performance will also vary. Then there exist a wide variety of additive choices at the terminals that affect quality. Also other variables in the cars performance such as warm external temperature versus cold external temperature, using the AC or not, headlights or not, incline of drive, etc. Try to eliminate as many of these variable as possible in your comparative testing.

Be consistent where you buy your gasoline because different gasolines vary tremendously. The best gas and the worst gas in your neighborhood will likely have a 30-percent spread in mileage. Same for diesel fuel. In my experience with repeated test results, I found that Texaco, Chevron and Canadian Shell deliver excellent gasoline mileage. Try to keep down the number of variables wherever you gas up by using the same station, same pump, same grade or same octane before testing. This is important.

Incidentally, in almost all cases, the lowest octane is best for mileage. Most modern vehicles do not have high enough compression to justify using high octane fuels. The testing indicates best mileage is usually obtained with 85 or 87 octane gasoline. Too much octane causes a loss of power and economy. BUT too little octane causes the same things plus knocking. Listen carefully to your engine for tell-tale knocks or

clicks when you start out from a light. The best mileage points to the correct octane when the engine is properly tuned. See your owners manual.

The ScanGauge enables you to notice differences and then check variations with and without acetone added in various proportions. Roughly 1/20 to 1/10 of one percent. On the dyno I never exceeded 1/4 of a percent. There was no point.

## Report Your Findings

PES Network Inc. has created an [index page](#) at *PESWiki* where you can report your findings. *PESWiki* is a publicly editable website where you can post a summary of your results, or create a full page, with all the details you wish to report, with images and links to video or spreadsheet data.

## Other Additives Exist

There are of course other additives that improve mileage (which also have had less than a favorable reception by the petroleum industry). Certain octane improvers for example also aid mileage. We recently proved that Carb Medic from Gunk can raise mileage when 3 oz. are used with 2 oz. of acetone per 10 gallons of gasoline, even in cold weather. Acetone seems to help cars start easier in winter.

Many products claiming to improve mileage are expensive and do not really help much. Others are fakes. For instance, a SMOOTH flow of air into a carburetor or injector is far better for mileage than turbulent air. Turbulence is bad. Yet many people deliberately introduce turbulent air into their engines. There are many silly myths floating around the car industry to fool the average person. Another is that cold intake air improves mileage. NO. *Warm* air improves mileage.

Test for yourself. Take a mileage check for each and every tank of gas or diesel fuel like we do. Your actual mileage is NOT that of a single tank full but the average of perhaps five tanks. To be accurate, you should not miss any checks. This takes discipline to get reliable results. Someday your car will do it for you with a factory MPG gauge on the dash. But for now, YOU ought to keep tabs on your mileage for all our sakes.

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## SOURCES

The above story was adapted with permission from a story reported at:

<http://www.lubedev.com/smartgas/additive.htm>

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Something that might be added:

In early 2004, a SmartGas reader in New York State filled three bottles with: pure acetone, part acetone/part gasoline and straight gasoline. Into these he placed O-rings, pump diaphragms, plastic fittings, hose parts and other neoprene/n-buna stuff. He duped my experiments from back in the 50s. Months later he told me the pure acetone bottle was slightly darkened and some vinyl parts swelled. Dave had carefully marked all the parts beforehand. He dried the parts to mike them again and noted after six months that the growth was about two-percent to five-percent in the bottles with gasoline, which was well within limits. Almost unnoticeable. He put the stuff back into the respective bottles where it may still be

today. Dave has a background in physics and engineering. I suggest testing parts as mentioned above, in 1, 2, 5, and 10 % mixes of gasoline and acetone. This is up to 200 times more concentrated than what we use in real life. No sense being ridiculous.

He believes that everyone should do their own testing and not listen to the prejudiced opinions or words of others. There is way too much misinformation out there.

When using acetone, I often add one of several other mileage additives into my 16 oz. Walgreen's plastic acetone bottle which stays in the trunk so as not to carry a large quantity container in case I get rear-ended. I am building a dyno facility to further test all the mileage additives and get perfect mixture figures to appear on the site this summer, I hope. Meanwhile the ScanGauge is being used daily by numerous persons across the U.S. running acetone and various carefully devised mixes and lubricants. Some oils can improve mileage substantially, notably Torco Oil.

Using the ScanGauge at 50MPH, my best mileage was 48-52 in my Neon a few weeks ago. Then I stopped the acetone to do some reverse testing. The next four tanks of the same Texaco gas showed 42-43, 37-38, 33-34, 30-31. No acetone when each tank was filled at half-full. The drop was about 20 MPG overall. Recent tests at a steady 50 MPH show 61-63 MPG in the Neon. People report OVER 62 MPG in Toyota Prius vehicles with a tiny bit of acetone in the gas. The other person with me each time wrote down the results. Single source reporting is not a good idea.

**Clear thinking guys want us to get off the Middle Eastern Oil. It is a national crisis. But to confirm this specific additive takes procedural knowledge, not undisciplined views or flash opinions. That makes engineers the best source of information of what goes on out there. The less controversy the better, if possible.**

I finished a science article on the SmartGas.net site--how to go about testing. It concerns induction and the Scientific Method.

Thanks to all, Lou LaPointe

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## Follow-up Story

- [Lubricity of Acetone in Fuel; Ester's Solution](#) - Acetone's positive results in mileage, idle, emissions, power, come in part from its engine cleaning effect, removing the carbon build-up. Does acetone degrade lubricity, creating long-term wear issues? Data from years of acetone use do not show unusual wear. Esters purported to afford added protection. (*PESN*; April 13, 2005)

## See also

- [Fuel Economy](#) > [Acetone as a Fuel Additive](#) - project index at *PESWiki* for reporting data from actual road tests using acetone.
  - [FAQ](#) - What does acetone do to the fuel system components? How much do I add? Will it hurt me? How does it effect performance? (*PESWiki*)
- [ScanGauge](#) - Track your automobile statistics with ease. Unit plugs into the diagnostic connector found under-dash on 1996 and newer cars and light trucks.
- [Pure Energy Systems News](#)
- [This Week in Free Energy™](#) - Weekly five minute blurb.

## Dozvoljena količina acetona u gorivu

Aceton:  
One fluid ounce (OZ) = 29 ml (mililitara)

Dizel: 58 mililitara na 40 litara D2  
Benzin: 87 mililitara na 40 litara benzina

<b>Dizel (D2)</b>	<b>Aceton</b>		<b>Benzin</b>	<b>Aceton</b>
<i>litara</i>	<i>mililitara</i>		<i>litara</i>	<i>mililitara</i>
1	1.45		1	2.18
5	7.25		5	10.88
<b>10</b>	<b>14.50</b>		<b>10</b>	<b>21.75</b>
15	21.75		15	32.63
<b>20</b>	<b>29.00</b>		<b>20</b>	<b>43.50</b>
25	36.25		25	54.38
<b>30</b>	<b>43.50</b>		<b>30</b>	<b>65.25</b>
35	50.75		35	76.13
<b>40</b>	<b>58.00</b>		<b>40</b>	<b>87.00</b>
45	65.25		45	97.88
<b>50</b>	<b>72.50</b>		<b>50</b>	<b>108.75</b>
55	79.75		55	119.63
<b>60</b>	<b>87.00</b>		<b>60</b>	<b>130.50</b>
65	94.25		65	141.38
<b>70</b>	<b>101.50</b>		<b>70</b>	<b>152.25</b>
75	108.75		75	163.13
<b>80</b>	<b>116.00</b>		<b>80</b>	<b>174.00</b>
85	123.25		85	184.88
<b>90</b>	<b>130.50</b>		<b>90</b>	<b>195.75</b>
95	137.75		95	206.63
<b>100</b>	<b>145.00</b>		<b>100</b>	<b>217.50</b>