



An Extended Guide · No. 1620

Ethanol, Ethanol-Free Gas, and Why It Matters

Why the fuel you store
makes a difference

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! Read this first — carbon monoxide is the real danger

A running generator's exhaust contains carbon monoxide — an invisible, odorless gas that can kill in minutes. Never run a generator indoors, in a garage, in a shed, or on a porch, not even with the door open and a fan going. Run it outside only, well away from the house — the safety agencies say at least 20 feet — with the exhaust pointed away from every window, door, and vent. Put battery-backup carbon-monoxide alarms on each floor and outside the bedrooms. If an alarm sounds, or anyone feels dizzy, sick, or sleepy, get everyone into fresh air first and ask questions later. Ethanol-free gasoline is not a safer fuel around flame or vapor — it burns and stores just like any other gasoline, so keep it exactly as far from any spark, flame, or pilot light.

Let's talk about what's actually in your gas tank

Most gasoline at the pump today is blended with ethanol, and that blend matters more once fuel sits in a can or a tank rather than burning right away. This guide explains the difference in plain English, and when ethanol-free gasoline might be worth seeking out.

I'm Bill, and I run Bill's Home Tech here in Portage County, Ohio. Folks are often surprised to learn that not all gasoline behaves the same in storage — and that the difference has nothing to do with the octane number on the pump.

We'll cover what ethanol does to stored fuel and small engines, what ethanol-free gasoline offers instead, and how to figure out what your own equipment actually wants.

★ There's no silly question here

Fuel blends and labels can feel like a foreign language. If you're ever unsure what's right for your generator or mower, tell me what you have and I'll give you a plain answer. Call or text me at (330) 200-8042.

The whole guide, on one page

If you remember only these things, you'll choose the right fuel for storage and for your engines.

- ❑ Most pump gasoline is blended with ethanol — check the label at the pump to see the blend.
- ❑ Ethanol attracts moisture and can break down faster, which matters most for fuel you're setting aside.
- ❑ Ethanol-free gasoline generally stores longer and is gentler on small engines.
- ❑ Always check your engine's own manual for the fuel it calls for — don't guess.
- ❑ Higher-ethanol blends can be unsuitable for small engines — the manual is the final word.
- ❑ Even ethanol-free gas still benefits from stabilizer and a rotation habit.

✓ The manual settles most arguments

When in doubt about what fuel your equipment wants, the owner's manual is the one source that's actually written for your machine.

What ethanol is, and why it's in your gas

Ethanol isn't an accident — it's a deliberate, common part of the fuel supply.

Ethanol is an alcohol made from crops like corn, and it's blended into most gasoline sold today as a widely used fuel additive. You'll usually see it noted right on the pump, since stations are required to label blends.

For a car driven regularly, this blend generally works fine. The trouble shows up with fuel that sits — in a storage can, a generator's tank, or a mower over the winter — because that's where ethanol's particular habits start to matter.

✓ Check the pump label

Most pumps post what blend you're buying right on the dispenser. It's worth a glance, especially if you're filling a can meant to sit for a while.

Why ethanol is tougher on stored fuel

The trouble isn't the ethanol burning — it's what ethanol does while it's just sitting there.

Ethanol has a habit of attracting moisture right out of the air, even through a sealed cap over time. That moisture can let the ethanol and water separate from the gasoline, forming a layer that doesn't burn cleanly and can be harder on an engine.

- Ethanol-blended fuel can absorb moisture from humid air over time.
- Separation shows up as a distinct layer or cloudiness in the can.
- Once separated, that fuel is not something to trust in an engine.
- This matters most for fuel meant to sit for weeks or months, not fuel you'll burn this week.

! Set-aside fuel is where this bites

If you fill up and use the tank within days, ethanol's storage quirks barely matter. It's the can in the shed for months that's worth thinking about differently.

Why it can be harder on small engines

Small engines — generators, mowers, trimmers — are pickier than a car's engine in some ways.

A car's fuel system is generally built and sealed with ethanol blends in mind. Many small engines, especially older ones, have simpler carburetors and rubber or plastic parts that can be more sensitive to ethanol and the moisture it can bring in over time.

None of this means ethanol-blended gas will ruin a small engine overnight. It means that over time, and especially in fuel that sits, it's more likely to contribute to gumming, corrosion, or a rough-running engine than a fuel without ethanol would be.

✓ A storage-and-longevity issue, not a today issue

If you use fuel quickly, this is a minor concern. If you store a can for the season, it's worth your attention.

Ethanol-blend and ethanol-free gasoline, side by side

Neither is wrong to own — they just behave a little differently once fuel sits.

For fuel you'll burn within days, either works fine. The differences below matter most for fuel headed into a can or a tank to wait for you.

	Ethanol-blend	Ethanol-free
How common	Very common	Select stations, dealers
Storage life	Shorter	Generally longer
Small engines	Fine for regular use	Often gentler over time
Needs stabilizer	Yes	Yes

✓ **Both still need good habits**

Ethanol-free is a nicer fuel to store, but it isn't magic — it still wants stabilizer and rotation like any gasoline.

Where to find ethanol-free gasoline

It's less common than regular pump gas, but not hard to track down once you know where to look.

Ethanol-free gasoline shows up at some marinas (boat engines are notoriously sensitive to ethanol), small-engine dealers, and a subset of regular gas stations that choose to offer it. It usually costs a bit more, which reflects its narrower market rather than anything exotic about it.

- Marinas are a reliable source, since boats often need it.
- Small-engine and outdoor-power dealers sometimes carry or sell it.
- A search for stations offering it in your area can turn up a few options.
- It's worth seeking out for fuel you plan to store, less critical for fuel you'll burn right away.

✓ Worth the extra stop for stored fuel

If you're filling a can that's going to sit for the season, a slightly longer drive to ethanol-free gas can be a trade worth making.

Your engine's manual is the final word

Every engine is a little different, and the manufacturer has already done the thinking for you.

Somewhere in your generator, mower, or trimmer's manual is a section on approved fuel. It will tell you what ethanol content, if any, the manufacturer considers safe for that specific engine — and that instruction should always outrank a general rule of thumb, including the ones in this guide.

- Find the fuel section in your owner's manual before assuming anything.
- If you've lost the manual, the manufacturer's website usually has it, or a call to them will get you the answer.
- Follow what the manual says even if it differs from what a neighbor or a forum post recommends.
- When in doubt, ask the dealer who sold you the equipment.

! Don't guess with the wrong fuel

Running a fuel blend your manual specifically warns against can damage an engine over time. When the manual gives a clear answer, that's the one to follow.

A caution about higher-ethanol blends

Not all gasoline at the pump is the same blend, and some pumps offer more than one.

Some stations offer higher-ethanol blends alongside standard gasoline, generally marketed for vehicles built to use them. These blends can be unsuitable for small engines like generators, mowers, and trimmers, which typically expect a standard blend or less.

The safe habit is simple: read the label on the pump before you fill a can, and never assume one grade or blend is interchangeable with another for a small engine. If a pump or label doesn't make the blend clear, ask the attendant or choose a different pump.

! When the pump isn't clear, don't guess

Filling a small engine's can with the wrong blend by mistake is an easy error to make and a hard one to notice until the engine runs poorly. A quick check of the label prevents it.

Common mistakes people make

A handful of avoidable habits explain most of the ethanol-related trouble I see.

- **Assuming all pump gasoline is the same** regardless of the label on the dispenser.
- **Filling a small engine from a higher-ethanol pump** without checking the label.
- **Storing ethanol-blend fuel for months** without stabilizer, then being surprised it's separated.
- **Skipping the manual** and going by habit or a guess instead.
- **Assuming ethanol-free means no stabilizer needed** — it still ages, just more slowly.

! The 'all gas is the same' assumption is the big one

Treating every pump the same is the single habit most likely to cause a small-engine headache down the road.

Two kinds of homes, two sets of needs

Where you live shapes how easy it is to find ethanol-free gasoline, and how much it's worth chasing down.

If you live in town or the suburbs

In town or a close-in suburb, you likely have several stations within reach, so it's worth a quick check of which ones carry ethanol-free gasoline before you need it.

- A short list of nearby stations or a small-engine dealer that sells ethanol-free gas is worth building now, before an outage.
- With stations close by, you might choose regular pump gas for fuel you'll use soon and ethanol-free only for the can that sits.
- Smaller storage space means fewer cans to worry about getting the blend right for.
- Check with local small-engine or marina dealers — they're often the easiest in-town source.

If you are out in the country on a well

Out in the country, ethanol-free gasoline may mean a genuine drive, so it's worth weighing against how much fuel you actually store long-term.

- If ethanol-free requires a real trip, consider reserving it for fuel headed into long-term storage, and using regular pump gas for what you'll use soon.
- A rural equipment dealer or farm-supply store may carry it even if the closest gas station doesn't.
- Tractors, chainsaws, and other equipment that sit for a full season benefit most from the trip.
- Pair whichever fuel you use with stabilizer and our rotation habit — that matters more than which blend, if a drive isn't practical.

★ Not sure what's worth the drive?

Tell me what equipment you're fueling and how far you are from an ethanol-free source, and I'll help you decide what's worth the extra trip. Call (330) 200-8042.

Ethanol-free and your backup generator

A generator is exactly the kind of equipment that benefits most from thinking about fuel blend.

A generator often sits fully idle for months between storms, which is precisely the situation where ethanol's storage quirks have the most time to cause trouble. Fueling it — or at least the fuel you store as a reserve — with ethanol-free gasoline can mean less worry when the day finally comes to start it.

This doesn't replace stabilizer or a rotation habit; it works alongside them. Ethanol-free fuel that sits for a year untreated can still fade — it just tends to fade more gracefully than a blend fighting moisture the whole time.

★ Worth discussing on a visit

If we're already talking about your generator setup, fuel blend is a natural thing to cover. Call (330) 200-8042 and we can talk through what makes sense for your situation.

Signs that ethanol-blend fuel has separated

A quick look tells you whether stored fuel is still trustworthy.

- **A distinct layer** near the bottom of a clear container, different in color from the fuel above it.
- **Cloudiness** that doesn't clear when you look at the fuel in good light.
- **A sour or off smell**, different from fresh gasoline's familiar sharp smell.
- **An engine that runs rough, stalls, or won't start** on fuel you know has been sitting.

Any of these are reasons to treat that fuel as unreliable rather than risk it in an engine. Our guide on how much fuel to keep and how to rotate it covers what to do with fuel you've decided not to trust.

✓ A clear container helps

If you can see into your fuel can, checking for separation takes seconds. It's one more reason a clean, clear can earns its keep.

Stabilizer still matters, whichever you choose

Ethanol-free gasoline is a better starting point for storage, not a finish line.

Even without ethanol's particular moisture habit, gasoline still ages — its lighter parts evaporate and it can still leave residue in a carburetor over time. Stabilizer, added at fill-up, slows that process for ethanol-free fuel just as it does for any gasoline.

Think of ethanol-free as starting further ahead in the race, not skipping it. Pair it with stabilizer and a rotation habit and you've done about as much as anyone reasonably can for stored fuel.

✓ Our stabilizer guide has the how-to

Our fuel stabilizer guide covers exactly when and how to add it — the short version is: at fill-up, following the label, every time.

A simple way to decide what to buy

You don't need a rulebook — just a couple of honest questions.

First, what does the manual for this particular engine say? If it specifies a fuel or warns against a blend, that answer wins every time. Second, is this fuel headed straight into an engine this week, or into a can to wait? Fuel you'll use soon is far more forgiving than fuel that's going to sit.

For fuel that's going to sit for weeks or months — a generator's reserve, a mower put away for winter — ethanol-free is worth the extra effort if it's reasonably available. For fuel you'll burn within days, standard pump gasoline is perfectly fine.

✓ When it's genuinely close

If ethanol-free isn't practical for you, a good stabilizer and a solid rotation habit go a long way toward closing the gap. Don't let perfect get in the way of pretty good.

Ethanol and your fuel lines, briefly

There's a deeper mechanical side to this that's worth knowing exists, even if it's not the focus here.

Over years, ethanol-blend fuel can be tougher on some of the rubber and plastic parts in an engine's fuel system, particularly on older equipment not designed with ethanol in mind. This shows up gradually, as small cracks, softened lines, or a carburetor that gums up more often than it should.

This is a maintenance topic more than a storage one, and our guide on caring for fuel lines and the carburetor goes into it properly, including when it's time to call a pro for carburetor work.

✓ Older equipment deserves a closer look

If you own an older generator or mower that's never had its fuel lines checked, that's a reasonable thing to have looked at, especially if it's run on ethanol blends for years.

Questions worth asking

Whether you're at the dealer, the pump, or asking me, these get you real answers.

Q: How do I know how much ethanol is in my gas?

Look at the label posted on the pump — stations are required to note the blend. If it's not clear, ask the attendant or choose a different station.

Q: Is ethanol-free gasoline worth seeking out?

For fuel you'll store for weeks or months, often yes — it generally holds up better and is gentler on small engines. For fuel you'll burn right away, standard gasoline is fine.

Q: Can I use a higher-ethanol blend in my generator?

Check your manual first. Many small engines aren't built for higher-ethanol blends, and using one against the manual's guidance can cause problems over time.

Q: Does ethanol-free gasoline still need stabilizer?

Yes. It tends to hold up longer, but it still ages. Stabilizer and rotation are still worth doing.

✓ There's no silly question

Fuel blends and labels aren't intuitive. Ask until you're confident — it's a small question that protects an engine you're counting on.

A simple fuel-choice checklist

Walk through this before you fill a can meant to sit for a while.

- ☐ I've checked my equipment's manual for what fuel it calls for.
- ☐ I know what blend is at the pump before I fill a can.
- ☐ I use ethanol-free gasoline for fuel that will sit for weeks or months, when it's reasonably available.
- ☐ I still add stabilizer, whichever gasoline I use.
- ☐ I check stored fuel for separation, cloudiness, or a sour smell before trusting it.
- ☐ I never assume a higher-ethanol blend is fine for a small engine without checking.

★ I'll help you sort out your equipment

If you're not sure what your specific generator or mower wants, tell me the details and I'll help you land on a sensible answer. Call (330) 200-8042.

The fire and vapor basics don't change

Whichever gasoline you choose, it's still gasoline, and it still deserves the same respect.

Ethanol-free gasoline is not a safer fuel in terms of fire or vapor — it burns and gives off flammable vapor just like any other gasoline. The blend affects storage life and engine wear, not how carefully you need to handle it around a flame or spark.

Store it in an approved can, away from any pilot light or ignition source, and follow the same habits covered in our guide on storing gasoline safely at home no matter which blend is in the can.

! Same fuel, same fire rules

Don't let ethanol-free create a false sense of safety. Handle and store it exactly as carefully as any other gasoline.

Common Questions

The ethanol questions I hear most often, answered plainly.

Q: Why does my gas station sell more than one kind of gasoline?

Different blends suit different engines. Standard blends work for most small engines and older cars; higher-ethanol blends are generally meant for vehicles built to use them. Check the pump label.

Q: Will ethanol-blend gas ruin my generator?

Not on its own, and not quickly. Over time, especially in fuel that sits, it can contribute to gumming or moisture problems more than ethanol-free gas would. Stabilizer and rotation help either way.

Q: Where can I buy ethanol-free gasoline?

Marinas, small-engine dealers, and a subset of regular stations sometimes carry it. A quick search or a call to a local dealer will usually turn up a source.

Q: Is it worth driving further for ethanol-free gas?

For fuel headed into long-term storage, often yes. For fuel you'll burn within days, it matters much less — standard gasoline is fine.

★ Still have a question on your mind?

That's what I'm here for. Call or text me at (330) 200-8042 and I'll give you a plain, honest answer.

How this fits with the rest

Choosing the right fuel is one piece of keeping your equipment ready — here's how the pieces connect.

This guide covered ethanol's effect on stored fuel and small engines, and when ethanol-free gasoline is worth seeking out. For how to slow fuel's aging further, see our fuel stabilizer guide, and for how much to keep and how to rotate it, see our guide on how much fuel to keep and how to rotate it.

For the containers your fuel lives in, our guide on storing gasoline safely at home covers the basics, and for the mechanical side of ethanol's effects over years, our guide on caring for fuel lines and the carburetor is the natural next read.

★ One call covers all of it

You don't have to sort out which guide answers which question. Call or text me at (330) 200-8042, describe your equipment, and I'll tell you plainly what fuel makes sense.

You don't have to do this alone

You just have to remember that a friendly, patient person is one call away.

I hope this guide made choosing between ethanol-blend and ethanol-free gasoline feel a little less daunting and a lot more doable. Keep it in a drawer with your other home papers, come back to a page whenever you need it, and don't worry about memorizing anything.

When you'd rather have a hand, that's exactly what I do. I come to your home, work at your pace, and never make you feel rushed or silly for asking. A first visit is a flat \$99, and for the parts that don't need me on-site I can often help right on your screen for \$49. Every visit comes with a 30-day, come-back-free guarantee. I don't do the licensed electrical or gas work myself — for that I'll help you line up a trustworthy local pro.

★ Bill's Home Tech — real help, close to home

Call or text me at (330) 200-8042, or visit BillsHomeTech.com. Serving Atwater and all of Portage County. 30+ years of patient, plain-English tech help — and if you're ever not 100% happy with a visit, I'll make it right or refund it. That's a promise. — Bill

Ethanol-Blend vs. Ethanol-Free Gasoline

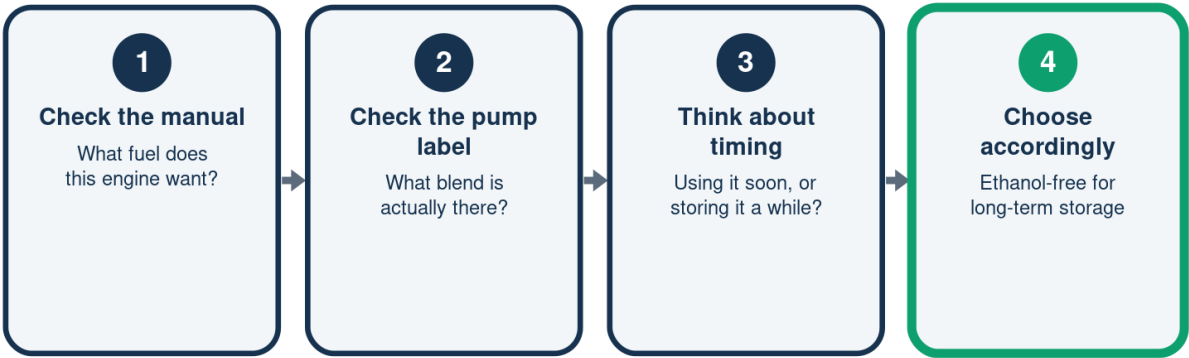
Both burn fine -- they store differently

	Ethanol-blend	Ethanol-free
Availability	Very common	Select stations
Storage life	Shorter	Generally longer
Moisture risk	Higher	Lower
Small engines	Fine for regular use	Often gentler

Both still need stabilizer and rotation once stored.

Deciding What to Buy

A quick check before you fill the can



A few seconds of checking beats guessing at the pump.

Fuel You'll Use Soon vs. Fuel You'll Store

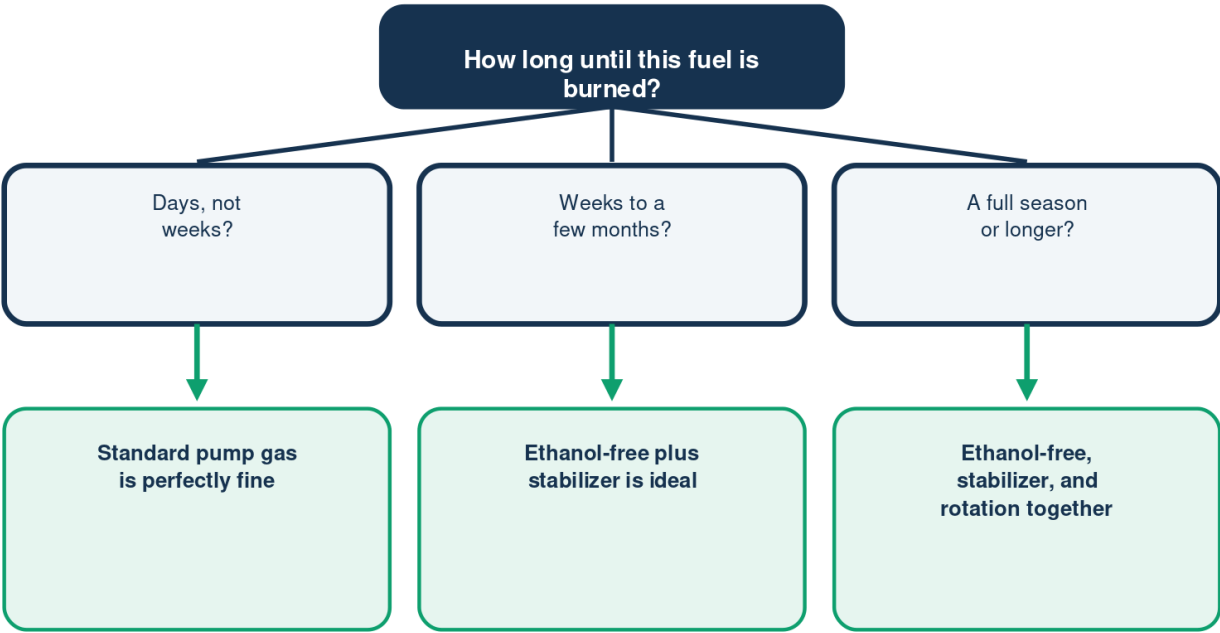
Timing matters as much as the blend itself

	Use within days	Store for weeks+
Ethanol-blend gas	Perfectly fine	More moisture risk
Ethanol-free gas	Also fine	Generally holds up
Stabilizer needed	Not critical	Yes, always
Check before trusting	Rarely needed	Smell and look

Timing matters as much as the blend itself.

How Long Will This Fuel Sit?

A quick gut-check before you choose



Check your engine's manual first -- it always outranks a general rule.

Illustration - a schematic, not to scale. Your setup may differ.



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A Note From Bill

A quick note from Bill.

I write these guides to make home tech a little less frustrating, and I do my best to keep every step accurate and up to date. Still, every home, device, and setup is a bit different, so I can't promise a guide will match yours exactly or fix your particular problem. These guides are for general information only — they're not professional, legal, or financial advice, and they don't replace your device's own manual or the manufacturer's instructions. Please go slow, use your own good judgment, and use everything here at your own risk. If a step involves electrical wiring, a gas appliance, a water heater, plumbing, or climbing a ladder — or if anything just doesn't feel safe — please stop and call a licensed professional (or give me a call at 330-200-8042). Bill's Home Tech and Bill Davis can't be responsible for any damage, data loss, or injury that comes from using these guides. Thanks for reading, and stay safe out there.

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