



An Extended Guide · No. 1626

Storing Diesel and Preventing Winter Gelling

Clean, dry diesel that
starts in the cold

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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. Diesel doesn't ignite as easily as gasoline, but a diesel generator's exhaust still carries carbon monoxide, so the same distance and fresh-air rules above apply just as firmly.

Let's store your diesel the safe way

Diesel is a forgiving fuel in a lot of ways, but it has two enemies of its own: water and cold. Stored clean, dry, and treated right, diesel keeps well and starts reliably. This guide walks through the habits that keep it that way, one plain step at a time.

I'm Bill, and I run Bill's Home Tech here in Portage County, Ohio. I've spent 30+ years helping folks feel calm and confident about the equipment around their homes and properties — and diesel generators and equipment are common out here, especially on farms and larger properties.

We'll start with the container and the fuel itself, then talk about the two things that cause almost all diesel trouble: water getting in, and cold weather turning it cloudy and thick. No jargon, no scare tactics — just sensible habits.

★ There's no silly question here

If you're ever unsure whether your diesel can, tank, or storage spot is set up right, that's exactly the kind of thing I'm glad to look at. Describe it to me, or I'll come see it in person. Call or text me at (330) 200-8042.

The whole guide, on one page

If you remember only these things, your diesel will stay clean, dry, and ready to start.

- ❑ Store diesel in an approved fuel container — diesel cans are commonly yellow, gasoline cans red, which helps keep them straight.
- ❑ Keep water out. A fuller container has less air space for condensation to form in, so keep it topped up when you can.
- ❑ Over long storage, watch for microbial growth (sometimes called diesel algae), especially where water has collected — a fuel treatment and keeping things clean and dry help.
- ❑ In cold weather, diesel can cloud and thicken as wax forms — a winter blend or an anti-gel additive helps, so plan ahead of the cold.
- ❑ Diesel is less flammable than gasoline, but it's still a fuel — store it away from ignition sources and handle it cleanly.
- ❑ For grades, treatments, or your specific equipment, your fuel supplier and your equipment's manual have the exact answers.

✓ Water and cold are the two things to watch

Get those two right and you've solved almost all of diesel's storage trouble. Everything else in this guide supports those two habits.

Diesel plays by its own rules

Diesel isn't gasoline, and it doesn't fail the same way gasoline does.

Gasoline mostly goes stale as its lighter components evaporate. Diesel is different — stored well, it tends to hold up longer, but it has its own two weak spots: water that finds its way in, and cold weather that changes how it flows. Get ahead of those two things and diesel is a wonderfully steady fuel.

It's also worth remembering that diesel is less flammable than gasoline — it doesn't ignite as easily from a spark. That's a genuine safety advantage, but it's not a reason to get casual. Diesel is still a fuel, it still burns, and it still deserves a clean, ventilated, ignition-free storage spot.

! Still a fuel, still deserves respect

Because diesel is harder to ignite than gasoline, it's easy to let your guard down. Store it away from any flame, spark, or heat source just the same, and clean up any spill promptly.

Choosing the right diesel container

The container question for diesel has the same answer as it does for gasoline: use one built for the job.

Diesel belongs in an approved portable fuel container, just like gasoline does. On the shelf, diesel containers are commonly colored yellow, while gasoline containers are red — a simple, helpful color habit that helps everyone in the house keep the two fuels straight at a glance.

	Diesel container	Gasoline container
Common color	Yellow	Red
Cap	Sealing, tight	Sealing, self-close
Use	Diesel only	Gasoline only

✓ **Color-coding is a habit, not a rule**

Yellow for diesel and red for gasoline is a widely used habit that helps prevent a mix-up, but always read the container's own labeling to be sure. Our safe gasoline storage guide covers the container basics in full — diesel containers deserve the very same care.

Water is diesel's real enemy

If there's one habit that matters most for diesel, it's keeping water out.

Diesel naturally attracts a little moisture from the air, and as temperatures rise and fall, that moist air inside a container or tank can condense into water. Water in diesel causes trouble on its own, and — as we'll get to shortly — it's also what lets microbial growth take hold.

The simplest defense is to reduce the air space where condensation can form. Keeping a container or tank topped up, rather than letting it sit mostly empty, gives moist air less room to collect and condense. It's a small habit that prevents a lot of downstream trouble.

- Keep containers and tanks topped up when practical, rather than nearly empty.
- Store diesel somewhere dry and out of the weather.
- If you ever suspect water has gotten in, that's a good time to ask your fuel supplier or a qualified technician about draining or filtering it.

✓ A topped-up tank is a drier tank

This one habit — keeping the container or tank fuller rather than letting it sit low — does more to prevent water trouble than almost anything else you can do.

What people call 'diesel algae'

It's not actually algae, but the nickname has stuck — and it's worth understanding.

Given enough time, especially where water has collected in a tank or container, diesel can develop microbial growth — tiny organisms that live where the fuel and any water underneath meet. Folks commonly call this 'diesel algae,' even though it isn't algae at all. It can leave a container smelling off, looking hazy, or — in bad cases — clogging a fuel filter.

The fix follows directly from the cause: keep water out in the first place, keep the container or tank clean, and consider a biocide or fuel treatment made for this purpose, especially for fuel that will sit for a long stretch. Follow the product's instructions and your equipment's manual for how and how often to use it.

! Don't ignore a fuel that smells or looks off

A hazy, dark, or foul-smelling diesel supply is worth taking seriously before you run it through an engine. When in doubt, ask your fuel supplier or a qualified technician to take a look rather than guessing.

Understanding winter gelling

Cold weather changes diesel in a way gasoline simply doesn't experience.

Diesel contains natural waxes, and as it gets cold enough, those waxes can start to form small crystals. You might notice the fuel look cloudy before anything else happens — that's an early sign the wax is forming. If it gets colder still, enough wax can form to thicken the fuel and clog a fuel filter or fuel lines, which can leave an engine struggling to start or run.

Exactly how cold is cold enough varies by the specific diesel blend, so I won't give you a number here — your fuel supplier and your equipment's manual are the right source for that. What matters is knowing the pattern: cloudy first, then thickened, then trouble starting.

! Gelling is a starting problem, not a fire risk

Gelled diesel mainly means an engine that won't start or run smoothly — it's an inconvenience and a readiness problem more than a safety hazard by itself. Still, never try to force-start or work on cold equipment in a way that isn't in its manual.

Helping your diesel handle the cold

A little preparation before winter arrives goes a long way.

- Ask your fuel supplier about a winterized or winter-blend diesel for the cold months — many suppliers switch blends seasonally for exactly this reason.
- An anti-gel additive, used as the product and your equipment's manual direct, can help keep wax from forming as readily.
- Keep containers out of snow and off cold ground where you can — a somewhat sheltered spot stays a little warmer than one fully exposed.
- If you use biodiesel or a biodiesel blend, know that it can behave a little differently in cold weather than standard diesel — your manual and supplier can tell you what to expect for your blend.

None of this needs to be complicated. Most of it is simply asking your fuel supplier what they recommend for the season, and following your equipment's manual for any additive.

✓ Plan ahead of the cold, not during it

Treating diesel or switching to a winter blend before the cold arrives is easy. Doing it after fuel has already thickened is a much harder job — get ahead of it.

Diesel grades and blends, kept simple

You don't need to become an expert — just know that diesel isn't all one thing.

Diesel comes in different grades, and your fuel supplier can tell you which one suits your generator or equipment and the season. There's also 'off-road' or dyed diesel, which is sold for non-road equipment use and is not intended for on-road vehicles — if you're not sure which is right for your machine, ask your supplier.

You may also run across biodiesel blends, which mix in fuel made from renewable sources. These can behave a little differently, especially in cold weather, so check your equipment's manual before using one, particularly if you're storing fuel for a long stretch.

✓ When in doubt, ask the supplier

Your fuel supplier deals with grades and blends every day and can point you to the right one for your equipment and the season — there's no need to guess.

Fire and handling safety still apply

Diesel is more forgiving than gasoline, but the basic fire habits still matter.

Diesel is genuinely less prone to catching fire from a spark than gasoline is, since it doesn't give off flammable vapor as readily at everyday temperatures. But it still burns, and a spill is still a slipping and fire hazard, so the same good habits apply: store it away from any flame or heat source, keep containers capped, and clean up spills right away.

- Store diesel away from ignition sources, just as you would gasoline.
- Keep the storage area clear of oily rags and clutter.
- Clean up any spill promptly and let the area air out.
- Handle fuel calmly and cleanly around any running engine or generator.

! Don't let 'less flammable' mean 'careless'

Diesel's lower flammability is a genuine safety plus, not a license to store or handle it casually. The habits that keep gasoline safe are worth keeping here too.

Two kinds of homes, two sets of needs

How much diesel you'd store, and how you'd store it, looks pretty different on a farm than it does in town.

If you live in town or the suburbs

In town or a close-in suburb, diesel usually means a smaller generator or maybe a diesel vehicle, and storage space is tighter. A modest amount in a couple of approved containers usually covers it.

- A can or two of diesel, clearly labeled, covers most small diesel generators or equipment.
- Check any city or neighborhood-association rules on fuel storage, the same as you would for gasoline.
- An attached garage is common in town — keep diesel well away from any ignition source just the same.
- Less to store means less to watch for water and cold — a real advantage in a smaller space.

If you are out in the country on a well

Out on a farm or larger rural property, diesel is often the workhorse fuel — tractors, equipment, and sometimes a bulk tank feeding more than one machine. Longer outages and a real drive to a station or supplier make a larger, well-managed supply sensible.

- A bulk diesel tank is common on a farm — keep it topped up to fight condensation and ask your fuel supplier about seasonal blends.
- Store containers and tanks well clear of the workshop, welding area, or any equipment heat source.
- A relationship with a local fuel delivery dealer makes seasonal top-offs and winter-blend switches easy.
- Ask your local fire department about any rules for a bulk tank or larger supply on your property.

★ Not sure how to set up your diesel supply?

Tell me what you're running and how you store your diesel now, and I'll help you think through a setup that stays clean, dry, and ready for winter. Call (330) 200-8042.

Where diesel should live

Location does a lot of the safety work for you, same as it does with gasoline.

A cool, dry, ventilated spot away from living space and any flame or pilot light is the right home for diesel containers — a detached shed, a garage corner well clear of the water heater or furnace, or, for a bulk tank, a spot your supplier or installer recommends.

- Never in the house, a basement, or a living space.
- Away from the water heater, furnace, or anything with a pilot light or open flame.
- Out of direct sun and off any heat source.
- Somewhere reasonably sheltered, which also helps with the cold-weather gelling we covered earlier.

✓ One more reason location matters

A sheltered, out-of-the-weather spot doesn't just help with fire safety — it also keeps your diesel a little warmer and drier, which helps on both fronts we've been discussing.

Inspecting containers and tanks

A quick look now and then catches trouble before it becomes a bigger job.

- Cracks, splits, or a container that's gone brittle or faded from the sun.
- A cap or seal that no longer closes tightly.
- Rust on a metal container or tank, especially at seams or the bottom.
- Any sign of a leak, weeping, or staining underneath a container or tank.
- For a bulk tank, follow what your fuel supplier or a qualified technician recommends for periodic checks.

If anything here describes what you're looking at, it's worth addressing before you trust the fuel or the container — move fuel to a sound container and have a questionable tank looked at.

★ I'm glad to take a look

If you'd like a second set of eyes on your diesel containers or storage setup, that's a quick, worthwhile visit. Call (330) 200-8042.

Common mistakes people make

A handful of avoidable habits account for most diesel storage trouble.

- **Letting a tank or container sit nearly empty** for a long stretch, which invites condensation.
- **Ignoring a hazy or off-smelling fuel** instead of asking a supplier or technician about it.
- **Waiting until it's already cold** to think about a winter blend or anti-gel additive.
- **Assuming 'less flammable' means no fire precautions needed.**
- **Mixing up diesel and gasoline containers** because they weren't clearly labeled or colored.

! Get ahead of the cold

Of all these, waiting until the cold snap to think about gelling is the one I hear about most. A little planning in the fall prevents almost all of it.

How much you can keep — and who decides

Just like with gasoline, this is a question for your local fire code, not a guess from me.

How much diesel you're allowed to store at a home or on a property — especially in a bulk tank — is set by your local fire code, and it varies from place to place. Rather than trust a number that might not apply to your address, ask the people who set the rule.

A call to your local fire department will tell you the limit where you live, particularly if you're considering a bulk tank or a larger supply on a rural property. They deal with this question often and are glad to help.

✓ A dedicated guide on the rules

Our guide on fuel storage and your local fire code walks through how to ask and what the limits are usually about — worth a read before you set up a larger diesel supply.

Getting ready before winter hits

The best time to think about gelling is a mild day in the fall, not the first cold snap.

- ❑ Ask your fuel supplier about switching to a winter blend for the season.
- ❑ Add an anti-gel additive if your equipment's manual and your supplier recommend one.
- ❑ Top off containers and tanks to reduce air space and condensation.
- ❑ Move containers to a sheltered spot, out of snow and off cold ground where practical.
- ❑ Check your equipment's manual for anything specific to cold-weather starting.

★ A good fall task for a visit

If you'd like help thinking through your winter diesel plan, that's an easy thing to cover on a visit before the weather turns. Call (330) 200-8042.

Questions worth asking

Whether you're talking to a fuel supplier, a technician, or me, these get you real answers.

Q: Should I use a winter-blend diesel or an anti-gel additive?

Ask your fuel supplier what they recommend for your area and your equipment, and check your equipment's manual for anything specific to your machine.

Q: How do I know if my diesel has water in it?

A fuel supplier or qualified technician can test for water. Cloudiness, a separate layer in the container, or an engine that runs rough are all reasons to ask.

Q: Is dyed or off-road diesel okay for my generator?

That depends on your equipment and local rules — your fuel supplier can tell you what's appropriate and legal for your machine.

Q: How much diesel can I store at home or on my property?

That's set by your local fire code, especially for a bulk tank. Call your local fire department for the limit at your address.

✓ There's no silly question

Diesel has its own quirks, and it's fair to feel less familiar with it than with gasoline. Ask until you're confident — that's exactly how you stay ready.

A simple diesel-storage checklist

Walk through this on a calm afternoon, not during a cold snap.

- ☐ My diesel is in an approved container, commonly yellow, clearly labeled.
- ☐ Containers and tanks are kept topped up when practical to reduce condensation.
- ☐ I know the signs of water or microbial growth, and who to call if I see them.
- ☐ I've asked my supplier about a winter blend or anti-gel additive before cold weather arrives.
- ☐ Containers are stored away from ignition sources, out of the weather where practical.
- ☐ I've checked with my fire department about any limits for a larger supply or bulk tank.

★ I'll happily check it with you

If you'd like a second set of eyes on your diesel setup before winter, that's a quick, worthwhile visit. (330) 200-8042.

A safety reminder worth repeating

Diesel's lower flammability is real, but a few habits still deserve your full attention.

Diesel doesn't give off flammable vapor as readily as gasoline, and it's genuinely harder to ignite. That's a real safety advantage — but a diesel generator still produces exhaust, a spill is still a hazard, and a fuel-soaked rag is still worth caring about.

Keep the storage area uncluttered, know where a suitable fire extinguisher is, and never run a generator — gasoline or diesel — indoors, in a garage, or in a shed. The carbon monoxide rules at the start of this guide apply to every fuel.

! Every fuel, the same exhaust rule

Whatever fuel powers your generator, the exhaust rules are the same: outside only, well away from the house, pointed away from windows and doors. Diesel is no exception.

Common Questions

The diesel questions I hear most often, answered plainly.

Q: Why is my diesel can yellow instead of red?

Yellow is the common color for diesel containers, while red is standard for gasoline — it's a helpful habit for keeping the two straight, though the label is what truly matters.

Q: What is 'diesel algae,' really?

It's not algae at all — it's microbial growth that can develop where water has collected in stored diesel. Keeping water out and the container clean prevents most of it; a biocide or fuel treatment can help too.

Q: Why does my diesel look cloudy in the winter?

That's usually the fuel's natural wax starting to form small crystals as it gets cold enough — an early sign of gelling. A winter blend or anti-gel additive, used ahead of the cold, helps prevent it.

Q: Is diesel more or less dangerous to store than gasoline?

Diesel is less flammable and doesn't give off vapor as readily, which is a genuine safety plus. It's still a fuel, though, so the same ignition-free, clean storage habits still apply.

★ 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 — and if it's easier to just show me, I'll come take a look.

How this fits with the rest

Storing diesel well is one piece of being ready — here's how the pieces connect.

This guide focused on diesel's two big issues: water and cold. For fuel treatments and biocides in more depth, see our stabilizer guide, which covers keeping fuel fresh across fuel types. If you're dealing with a related cold-weather fuel question, our cold-weather propane guide covers a sibling issue for a different fuel.

For the container basics that also apply to diesel, our safe gasoline storage guide is a useful companion, and our guide on where never to store fuel applies just as much to diesel as to gasoline. And if your equipment can run on more than one fuel, our guide on matching the right fuel to your generator helps you sort out which is which.

★ 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 setup, and I'll tell you plainly what you're doing well and what's worth changing.

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 storing diesel and preventing winter gelling 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

Diesel Containers vs. Gasoline Containers

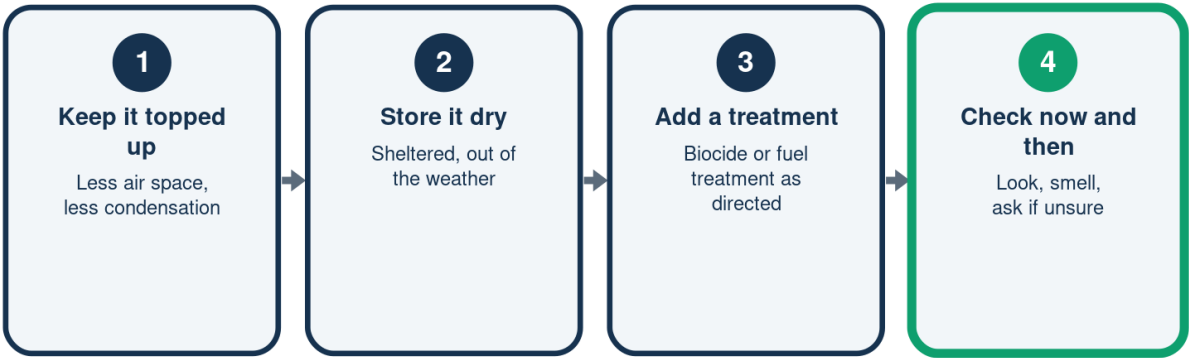
Color is a helpful habit, not a substitute for the label

	Diesel	Gasoline
Common can color	Yellow	Red
Cold-weather issue	Can cloud, gel	Doesn't gel
Flammability	Less flammable	More flammable
Water sensitivity	Very sensitive	Less sensitive

Color-coded cans help prevent mixing up fuels at the shed.

Keeping Water Out of Stored Diesel

A few habits that prevent most water trouble



Water is what invites both rust and microbial growth.

Warm-Weather Habits vs. Cold-Weather Habits

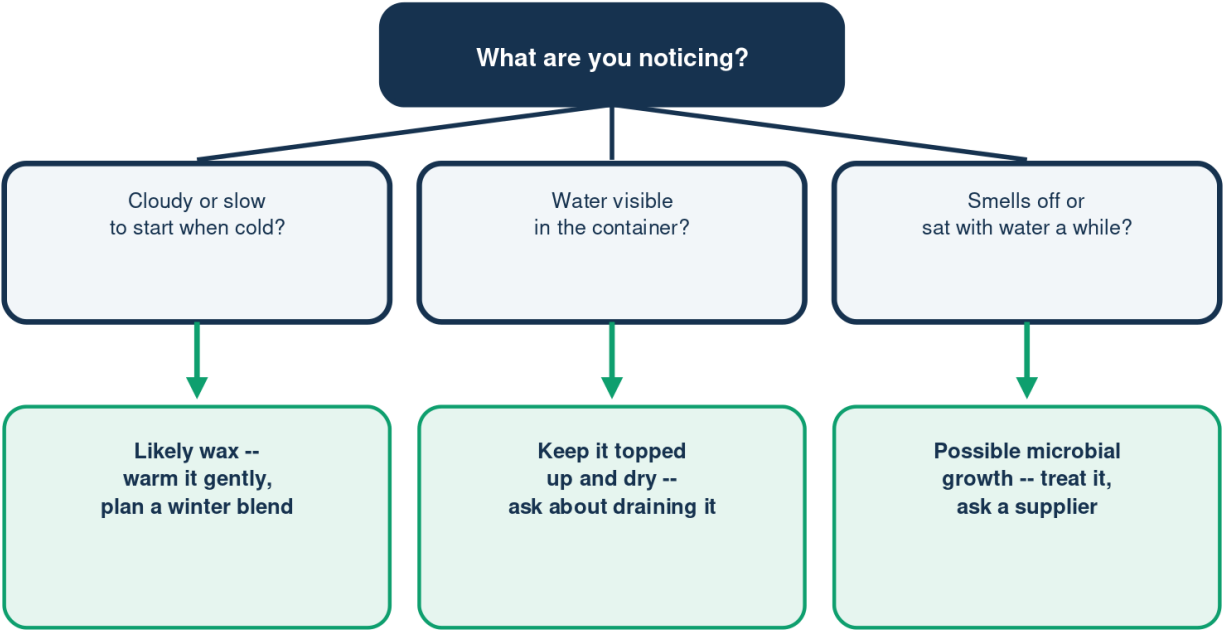
A little planning ahead of the cold prevents gelling

	Warm months	Cold months
Diesel blend	Standard diesel	Winter blend helps
Additive	Not usually needed	Anti-gel can help
Storage spot	Shed or garage	Keep out of snow
Water checks	Routine	Extra important

Getting ahead of the cold is easier than fixing gelled fuel.

Diesel Acting Up in Cold or Damp Weather?

A quick way to think through what you are seeing



When unsure, your fuel supplier or a qualified technician can tell you for certain.

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.

— *Bill*



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