

GEARHEAD

FUEL ADDITIVES: PART I

It never fails. During every lecture I deliver on fuel systems at Trawler Fest, at some point someone brings up the question of fuel additives.

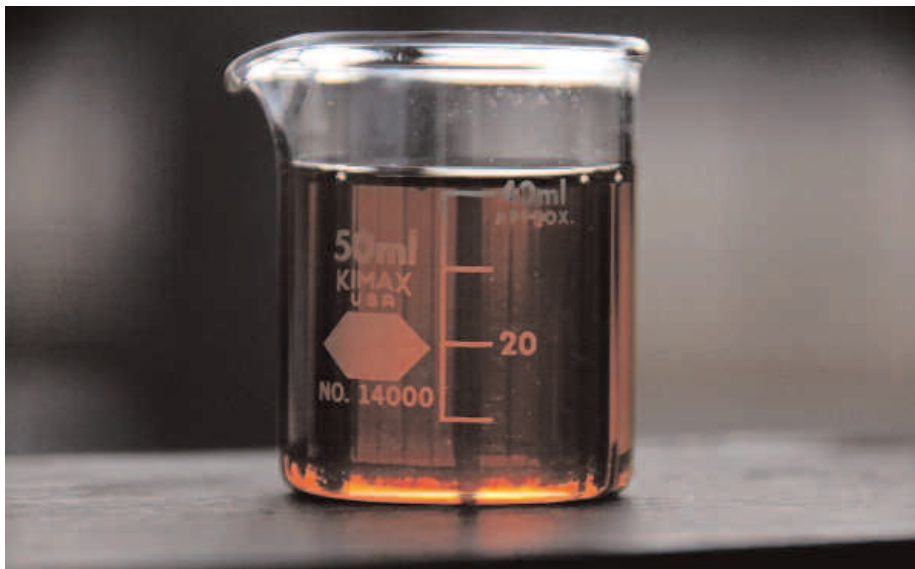
The queries nearly always begin with, “I saw an ad for a fuel additive that says it can...” or “I heard from a friend who uses it that...” Often, the summation of the inquiry includes, “So how do I know what to use?” or “Can it really do that?” or “What happens if I don’t use this product? The dealer I spoke to said if I don’t use it, my engine will be damaged.”

After walking down the aisle at the local marine chandlery, I can understand the confusion.

The ‘Soft Science’ Of Fuel Additives

The subject of fuel additives can be a contentious one. Folks who use a particular product and believe it works (along with manufacturers, of course) can be fiercely defensive of this or that additive. Rarely do I hear a boat owner say, “I used this product and it had no effect whatsoever, so I stopped using it.” Instead, if the engine runs well, then the boat owner believes it must be because of the additive he or she used; if the engine doesn’t run well, it’s chalked up to some other cause, real or perceived.

I can’t blame these folks. It’s human nature to avoid broadcasting that something you’ve put your faith in hasn’t lived up to all of its claims. There seems to be something wired into our DNA that makes us feel good about seemingly improving something by adding an elixir whose contents are unknown to us. In fact, I believe it’s the mystery of what’s in the bottle that creates some of the attraction. I suspect that if you did a double-blind study offering a true fuel-enhancement additive to some folks and a placebo to others, a sizeable percentage of the placebo



Steve D'Antonio

What’s in that bottle of fuel additive, anyway? It feels good to think you’re improving your fuel with an additive. Before dosing your tank, however, it’s important to fully understand what the additive may or may not be able to do.

users would report an improvement in performance, fuel efficiency, or smoke reduction.

As I walked the aisles at the Miami International Boat Show recently, I made a point of counting the number of fuel additives I encountered. I stopped at 22. There’s a conclusion to be drawn here, but I’m still not quite sure what it is—other than that I’m in the wrong business.

In Miami and at other boat shows I attend, the products usually are sold by a dealer. In a few rare instances, the manufacturer of the additive is actually on hand, a decided advantage when asking such technical questions as, “Does your product demulsify or emulsify water, and if the latter, what chemical is used for emulsification?” When I posed that question to the makers of three high-quality products I happen to know very well and have studied and used—ValvTect, Stanadyne, and STA-BIL—the answers I received were straightforward and accurate. (I confess I knew the answers; I was testing the sellers.) When I posed

such questions to other additive vendors, the answers ranged from blank looks to what can only be described as junk science.

If you want to get to the heart of what a fuel additive does and what’s in it, go to the source—talk with the manufacturer, either in person or via email. I’ve had plenty of email correspondence with chemists at the aforementioned companies (they are likely tired of hearing from me), and the answers I receive are lengthy, detailed, and accurate.

I attended another East Coast boat show shortly after the ultralow-sulfur diesel (ULSD) monster began rearing its head. At one of the engine dealers’ booths, I saw a sign that essentially conveyed this message: unless you use this additive with ULSD fuel, your engine will be damaged, and your warranty will be voided. It doesn’t take a rocket scientist to figure out that this dealer was selling fuel additives made by the engine manufacturer.

“Buyer beware” is the watch phrase here. The dire warning posted on the

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sign was an extreme exaggeration at best. In most cases, if a manufacturer of an engine or other equipment insists that you use its branded product in order to retain warranty coverage, then the manufacturer is obligated to provide the product to you *for free*. The law that governs this protocol is called the Magnuson-Moss Warranty Act, and this part of the law is referred to as the “tie-in sales provision.”


What an engine manufacturer *can* legally do is require that you use fuel that meets a certain standard, such as ASTM D975, which governs a fuel’s lubricity or slipperiness. I’ll discuss ULSD and its effects in a future “Gearhead” column; for now, suffice it to say that you should be cautious of any additive manufacturer making ominous claims such as those described above.

Think It Through

When considering the use of a fuel additive, it makes sense to evaluate your vessel and fuel usage habits and the reasons why you might opt to use an additive, or decide not to. I recently received a note from one of my clients that exemplified the need for such scrutiny: “Steve, I’m considering using Brand X fuel additive to deal with water and ethanol issues. A friend of mine has used it for some time, and he’s had no problems.” My response included two thoughts: First, why do you believe water is an issue—is it showing up in your primary fuel filter? Second, ethanol is not present in diesel fuel (thankfully), so you don’t need an additive to contend with its effects.

In short, don’t use an additive

unless you need it to address a specific problem. The most common reasons for using additives include “removing” water and eradicating biological growth. Keep in mind that if there’s water in your fuel tank, ideally you should drain or suck it out, rather than treat it chemically. If you remove the water, you won’t have biological growth. (By the way, it’s typically bacteria, not algae, that are found in fuel tanks. Algae are plants and require sunlight to survive, and there’s little of that in the stygian darkness of a fuel tank.) Treating the source, rather than the symptom, is always the preferred approach.

In the next issue, I’ll discuss specific approaches toward evaluating fuel additives and how they work.—Steve D’Antonio 

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