



What is bioheat®?

Bioheat® is a term used for blends of home heating oil and biodiesel. Greenleaf Biofuels advocates the use of Bioheat® B20, a blend of 80% low sulfur No. 2 home heating oil and 20% biodiesel. This blend percentage ensures the safe and consistent operation of current equipment while maximizing the economic, environmental and health benefits of biodiesel.

What does Bxx mean?

In its pure form (B100), biodiesel contains no petroleum, but it can be blended at any ratio with petroleum middle distillates to create a biodiesel blend. Petroleum middle distillates include No. 2 diesel, No. 2 home heating oil and No. 1 kerosene. Bxx refers to the biodiesel/petroleum ratio used to create the blend, where xx represents the volume percentage of biodiesel fuel in the blend.

Will I need to make any changes to my heating system?

No. One of the greatest features of Bioheat® blends up to B20 is that they are “drop-in” fuels that can be used in your existing heating system without any modifications. Brookhaven National Laboratory on Long Island has successfully completed extensive tests of bioheat blends, including B20. Note: If you have a particularly old storage tank, the fuel filter may need to be replaced after a few deliveries because the biodiesel will act as a cleaning agent in your tank.

How much does Bioheat® cost?

Greenleaf Biofuels and its partners are committed to the success of Bioheat®, and therefore will only charge a small premium for this clean, renewable fuel. You can expect to pay 5 cents to 15 cents more per gallon for Bioheat®, depending on the percentage of biodiesel and on your current source for home heating oil. Please consider what it is worth to you and your family to use biofuel from the Midwest rather than petroleum from the Middle East. Look at the benefits below, and you will see that bioheat is an easy choice.

Can bioheat help mitigate global warming?

Yes. CO₂ is the leading greenhouse gas that contributes to global warming. A 1998 biodiesel lifecycle study, jointly sponsored by the US Department of Energy and the US Department of Agriculture, concluded biodiesel reduces net CO₂ emissions by 78 percent compared to petroleum diesel. This is due to biodiesel's closed carbon cycle: the CO₂ released into the atmosphere when biodiesel is burned is recycled by growing plants, which are later processed into fuel. Heat your home, not the planet!

Why should I use Bioheat®?

Using Bioheat® supports our domestic economy, reduces our dependence on foreign oil and enhances our national security. Furthermore, using Bioheat® will significantly decrease emissions of greenhouse gases, unburned hydrocarbons and particulate matter that contribute to lung disease. Biodiesel is the only alternative fuel to have fully completed the health effects testing requirements of the Clean Air Act.

Biodiesel in its pure form (B100):

- is less toxic than table salt
- biodegrades as fast as sugar
- blends easily with petroleum products
- reduces CO₂ emissions by up to 78% (16% in a B20 blend)
- substantially reduces unburned hydrocarbons, carbon monoxide, and particulate matter, thus reducing the localized formation of smog
- dramatically reduces polycyclic aromatic hydrocarbons (PAH) and nitrated polycyclic aromatic hydrocarbons (nPAH), which have been identified as potential cancer causing compounds
- essentially eliminates emissions of sulfur oxides and sulfates (20% reduction in a B20 blend), thus reducing major components of acid rain.



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Do oil burner manufacturers recommend the use of Bioheat® fuel with their equipment?

At this time the emergence of Bioheat® fuel is too new for many burner manufacturers to comment on. However, Bioheat® fuel appears to have little or no negative impact on a burner's performance while providing emissions, lubricity, global warming and health benefits. Current ASTM standards for home heating oil (D 396) allow for up to 5% blends.

What about my oil tank--is it compatible with Bioheat® fuel?

All known oil tanks and systems are compatible with Bioheat® fuel at blends of 20% or less. For higher biodiesel blends, up to and including 100% biodiesel, compatibility will depend on the materials (metals, plastics, and rubber parts) in your tanks, pumps and fuel lines. For blends higher than 20% biodiesel only steel, mild steel, stainless steel, aluminum, fluorinated polyethylene fluorinated polypropylene and fiberglass vessels are recommended. Use of tanks or lines made of brass, bronze, and copper or lead, tin, and zinc (i.e. galvanized) may cause high sediment formation and filter clogging and are not recommended.

How about Bioheat® fuel in large commercial boilers or electric power generation?

The major differences between large commercial boilers and electrical generation units and home heating oil applications are the gallons per hour being combusted. Large or small-scale boilers or electrical generation systems all have the same fundamental considerations as home heating applications. All the same advantages, and precautions, apply to these applications as they do in home heating applications.

How can I get my Bioheat® fuel delivered already blended?

You should contact your existing heating oil supplier and determine if they are familiar with Bioheat® fuel and biodiesel in general. If not, have them contact us. It is highly recommended that you source your Bioheat® fuel from a reputable fuel supplier that has the ability to economically store, receive, blend and deliver it to your tank to ensure proper blending and storage strategies.

Will the cold weather impact my Bioheat® fuel?

Bioheat® fuel has similar cold weather properties as the heating oil it is made from. Bioheat® fuel Blends up to 20% biodiesel may increase the cold flow temperature approximately 15-30 degrees Fahrenheit from the base heating oil it is blended with. If cold weather handling and usage are a concern with regular home heating oil, they will be a concern with Bioheat® fuel. Cold flow properties can be enhanced by implementing the same solutions used with heating oil: blend the fuel with kerosene, use pour point depressants, or plan your storage accordingly utilizing inside protection or tank heating elements.

Where can I find further information?

For further information on bioheat, go to: <http://www.biodiesel.org/markets/hom/default.asp>