Biodiesel Association of Canada
Association canadienne de biodiésel

Tips on Ensuring Biodiesel Stability[i]

Know the level of saturation of your biodiesel. The lower the level of saturation—less compounds containing double bonds—the more likely the fuel will oxidize. Tallow-derived biodiesel has the least number of double bonds, followed by soy- and then canola-derived biodiesel fuels. Saturated fatty acids are stable, and each time the level of saturation decreases the stability of the fuel goes down.

Do not store B100 in clear or translucent plastic totes in the summer. Heat and sunlight will accelerate the oxidation process.

Do not store B100 for long periods of time in systems containing reactive metals. Certain metals such as copper, brass, bronze, lead, tin, and zinc will serve to accelerate the degradation process and form even higher levels of sediment than would be formed otherwise. Metal chelating additives may reduce the negative impact of the presence of these metals.

Know how your fuel is processed. Bleaching, deodorizing or distilling oils and fats before or as a part of the biodiesel process can remove natural antioxidants, which will lessen fuel stability. If some or all of the aforementioned have been part of the biodiesel production process, stability additives are recommended.

Keep oxygen away from fuel. By limiting the fuel's exposure to oxygen the risk of fuel oxidation can be greatly reduced or eliminated. This will increase the storage life of the biodiesel.

Antioxidants protect stability. Antioxidants, whether natural or incorporated as an additive, can significantly increase the stability of biodiesel. The current data from field tests and studies have shown that **biodiesel has good thermal stability** and therefore, this does not appear to be an area of concern.

---

[i] Tyson, Shaine, Department of Energy/NREL. 2004 Biodiesel Handling and Use Guidelines, DOE/GOV – 102004 – 1999 – September 2004 (www.osti.gov/bridge)