



BioHeat[®] Update

ASTM and Oilheat Industry Activities

National Biodiesel Conference

2/4/08 – Vic Turk – Beckett



Rationale

- ⊕ ASTM D396 cited in codes, manuals, etc.
 - ⊕ One change handles everything
- ⊕ UL – credible testing authority
- ⊕ NORA, NBB, & BNL – support





Status of B5 approval

- ✦ Strategy to amend D396 – 3-06
- ✦ UL Fact-Finding Study commissioned 8-06
- ✦ Investigation & testing complete 4-07
- ✦ UL report submitted to NBB, NORA 5-07
- ✦ Ballots to ASTM 5-07 & 10-07
 - ✦ B5 in diesel, fuel oil – B6-B20 stand-alone diesel
- ✦ All biodiesel issues passed first review:
 - ✦ Second ASTM ballot review 6-08
 - ✦ All linked to changes in B100



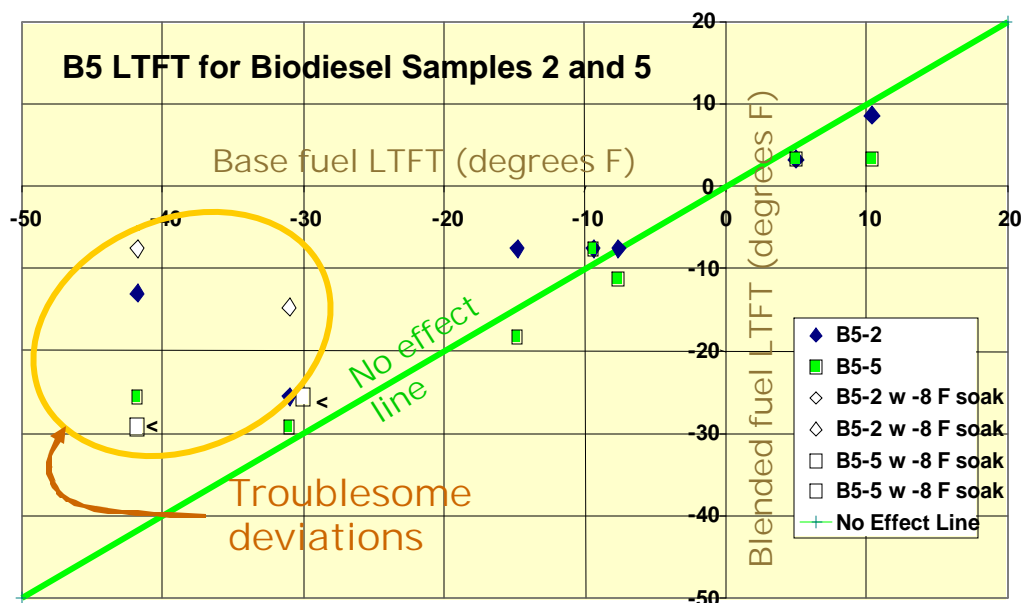
Persistent biodiesel blend issues:

Low temperature properties

‘Waxing’ above cloud point; cloud point elevation

- Not feedstock related
- Engine testing in process

Need for low temp problem solver – petroleum Grade 1 / Kerosine unequalled



Courtesy - ASTM Task Force – Cold Soak Filterability

Persistent biodiesel blend issues:

- ✦ Long term storage stability
 - ▣ Biodiesel is chemically more reactive, especially with copper, water, sludge, microbes
 - Unknowns exist
 - At low levels (<B5) – minimal problems expected
 - ▣ Standard tests (in glass) do not predict stability typical of summer fuel storage
 - Storage – oxidation – thermal – ASTM
 - Tentative method includes copper – EN

Persistent biodiesel blend issues:

- ✦ Wick-fed applications (kerosine)
 - ❑ High level biodiesel (>B20) – deposits, poor lighting
 - ❑ Long term use at low levels – indications of reduced performance – under investigation
 - ❑ Distillation ‘end point’ effects





Using BioHeat[®] –

Recommendations

- ⊕ Know your fuel – insist on certification
 - ⊕ 5% B100 to D6751, 95% No.2/1 to D396
 - ⊕ BQ9000 suppliers where possible
- ⊕ Additives help during summer, transition
- ⊕ Filtration – watch, change
- ⊕ Tanks – check for sludge, water
- ⊕ Yellow metals – minimize contact

