



Subject: Biodiesel Position Statement

Date: September 6, 2005

Delavan has been supplying the oil heating industry with precision nozzles for over 60 years and has maintained an active role in various aspects of innovation and technological breakthroughs. In an effort to promote the development of both cleaner energy sources and renewable energy sources, Delavan has adopted the position that biodiesel blends of five percent (B5) of ASTM rated D6751 are acceptable for use with our nozzles. Delavan bases this decision on three key factors: overall supply, fouling issues, and installed base.

Current production levels of biodiesel are approximately 300 million gallons per year. With a finite supply chain and increased demand, B5 blends present an alternative to diesel that combines the elements of availability and affordability. As production capacity increases, these levels will increase and result in higher percentage blends being available. However, these higher blends present other obstacles, such as compatibility and storage issues, that need to be addressed prior to their adoption.

As an example, B20 blends without additives and stabilizers have been found to degrade at a rate twice that of standard petroleum diesel fuel. Fuel degradation results in higher acid formation and microbial growth that can cause fouling of the nozzle and filters. The entire system has copper alloys from tank fittings, tubing, pump fittings, adapters, nozzle pre-filters, and nozzles that under certain conditions may promote the formation of varnish that could result in reduced appliance performance over long periods of time. Additional concerns include: solvent properties that tend to release tank contamination, polymer compatibility, higher flow point, gum and sediment formation.

Field studies conducted by Brookhaven National Lab and others have not reported obvious adverse effects on the nozzles during their testing. B5 is a blend that presents fewer reported compatibility and storage issues. While Delavan considers blends of five percent or B5 as acceptable, this support does not replace or void our standard product warranty. Use of substandard fuel, fuels of higher blends, or unapproved fuels cannot be covered under warranty.

Delavan will continue to conduct, support, and monitor further testing and update this position as needed.



Delavan Spray Technologies

PO Box 969

Bamberg, SC 29003

www.Delavaninc.com

Phone (803) 245-4347

Fax (803) 245-4146