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STORAGE, HANDLING AND COMBUSTION OF A NOVEL HEATING FUEL: EL

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ABSTRACT

The liquid heating market is currently moving towards using more renewable fuels. While biodiesel and hydrogenated vegetable oil, derived from seed oil, and waste materials has had the most impact to date, the industry is looking toward other, cellulosic fuels for the future. One of the fuels that has generated interest is ethyl levulinate (EL). EL is a second generation biofuel, derived from the mild acid hydrolysis of wood waste and other materials. NORA has developed a process for the evaluation of this fuel through storage, handling, and combustion which can lead to optimization of the role that such a fuel can play in the market. Fuel factors such as conditions under which it is miscible with current fuels, low temperature performance, storage stability, elastomer compatibility, corrosion potential, and combustion performance have been included. The project team is currently working toward the development of a draft specification standard for commercially produced EL. The current areas of focus on EL are the long term storage changes of the fuel and the effects it could have on the steel tanks commonly found in the heating oil industry. While this work has been focused specifically on EL the qualification process can be applied to other candidate biofuels for use in this market sector.

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