

LUBRICATION FLUIDS FROM BRANCHED FATTY ACID METHYL ESTERS

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We have invented a new method for the synthesis of lubrication fluids using natural vegetable oils. Ordinary vegetable oils are good lubricants, but in their native form, they lack the stability for many applications. Materials made from this new technology display significantly increased stability, yet maintain their good lubricating properties. Coefficients of friction, measured in a ball-on-disk test, were much lower when the branched ester materials were used, as compared to fluid without the additives. The materials also have the ability to flow at low temperatures, which was measured by pour point analysis. Starting from commercially available epoxidized soybean oil based compounds, our product can be made without additional catalyst and in high yield, an advantage over other existing methods of modifying vegetable oil. This technology could benefit those who want to use lubricants, especially those industries where lubrication is lost to the environment, such as forestry.

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