

Turkish Journal of Chemistry

Turkish Journal

Investigation of Biodiesel Production from Canola Oil Using Amberlyst-26 as a Catalyst

of


Oğuzhan İLGEN^{1,2}, Ayşe Nilgün AKIN^{1,2}, Nezahat BOZ^{1,2}

Chemistry

¹Kocaeli University, Chemical Engineering Department, 41040, Kocaeli-TURKEY

²Kocaeli University, Alternative Fuels R&D Center, 41040, Kocaeli-TURKEY

e-mail: nezahatboz@kocaeli.edu.tr

 [Keywords](#)
 [Authors](#)



chem@tubitak.gov.tr

[Scientific Journals Home Page](#)

Abstract: The transesterification of canola oil to fatty acid methyl esters was studied using Amberlyst-26 as a solid catalyst. The influence of reaction conditions, such as the reaction time, methanol to oil molar ratio, amount of catalyst, effect of co-solvent, and alcohol and oil types, were determined. When the reaction was carried out at 45 °C with a canola oil to methanol molar ratio of 6:1, a reaction time of 1.5 h, and 3 wt.% of catalyst, oil conversion was about 67%. Methanol was much more reactive than ethanol and isopropyl alcohol (IPA) in the transesterification reaction. The conversion of canola oil did not change much with the addition of tetrahydrofuran (THF) as a co-solvent; however, in the presence of n-hexane as a co-solvent in the reaction mixture, the conversion of canola oil decreased. Canola oil had the highest conversion among the other oils used, including sunflower and corn oils. All the results suggest that Amberlyst-26 cannot serve as an economical solid catalyst for the high-yield production of biodiesel from canola oil.

Key Words: Biodiesel, heterogeneous catalyst, Amberlyst-26

Turk. J. Chem., **33**, (2009), 289-294.

Full text: [pdf](#)

Other articles published in the same issue: [Turk. J. Chem., vol.33, iss.2.](#)