

## **Solubility of Carbon Monoxide in Different Bio-Oil Components**

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The solubility of carbon monoxide has been determined in five different bio-oil components namely crotonaldehyde, diacetyl, methylfuran, allyl alcohol and furan at three different temperatures 273.15, 298.15 and 323.15 K and the pressure range from 1 to 7 MPa. The measurements were carried out using static analytic VLE (Vapor-liquid equilibrium) cell equipped with ROLSI™ (Rapid Online Sampler Injector) sampler connected to a gas chromatograph through a heated transfer line. PC-SAFT EOS was employed to model the acquired data. Pure component parameters of the PC-SAFT ( $m, \epsilon, \sigma$ ) of the bio-oil components were calculated by a simultaneous regression of vapor pressure and liquid molar volume data using Aspen Plus®. Binary Interaction parameters for PC-SAFT have also been regressed. Carbon monoxide solubility in all cases was found to be very low.