

Liquid-liquid equilibria for the ternary systems of  
Di-methyl carbonate + C1 ~ C4 alcohols + water  
at 298.15 K and Atmospheric Pressure

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Dimethyl Carbonate is a solvent of both extraction and reaction used in many industries (pharmaceuticals, agrochemicals, hydrocarbon refinery, paint, coatings and fragrances). It is used as a methylation and carbonylation agent in organic synthesis. It can be used as fuel and lube additive. Recently, methyl tert-butyl ether (MTBE), a widely used gasoline additive for octane and oxygen enhancement, was found polluting the groundwater and being not biodegradable, as a result, the research activity related to DMC has increased greatly.<sup>1</sup> Di-methyl carbonate (DMC) could be a suitable candidate for gasoline additive with ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME) and Di-iso propyl ether (DIPE). In present work, we report the liquid-liquid equilibrium (LLE) data for the ternary systems of DMC + C1 ~ C4 alcohols (methanol, ethanol, propanol and butanol) + water at 298.15 K were experimentally determined by using tie-line measuring method and atmospheric pressure. We present a correct description of the experimental LLE data of the binary and ternary systems by using a NRTL and UNIQUAC models.