

Solid-liquid equilibria for binary systems containing methyl phenyl carbonate at atmospheric pressure

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Diphenylcarbonate(DPC) has several desirable properties, such as good electrical insulation, a high heat of distortion, transparency, and impact resistance. DPC is also a convenient intermediate for the synthesis of polycarbonate without using phosgene, i.e green synthetic process. In this process, DPC can be synthesized via a two-step reaction from dimethylcarbonate (DMC) and phenol since the direct synthesis of DPC is limited due to low equilibrium constants for the forward reaction. The first step, transesterification of DMC and phenol proceeds as shown in reaction and formed methylphenylcarbonate (MPC) is disproportionated into DPC and DMC in reaction. However, to date, relatively very few investigations of the phase equilibria and mixture properties of systems containing MPC have been reported. In the present work, we analytically determined the binary solid-liquid equilibria at atmospheric pressure of the MPC containing systems.

**Acknowledgment** : This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology.