

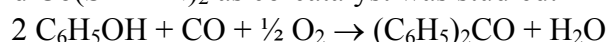
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OXIDATIVE CARBONYLATION OF PHENOL IN DIPHENYLCARBONATE

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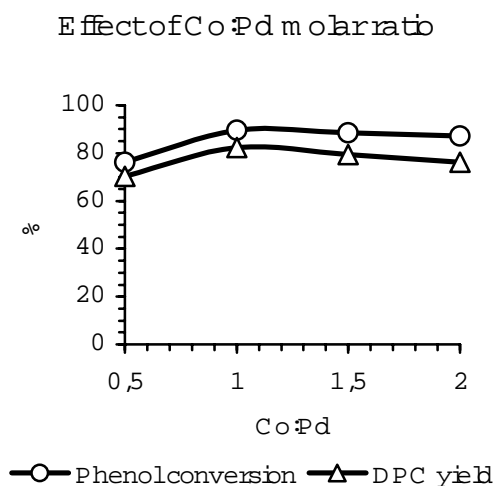
Oxidative carbonylation of phenol into diphenylcarbonate (DPC) in the presence of Pd(OAc)₂ as a catalyst and Co(SALEN)₂ as co-catalyst was studied:



Phenol conversion and PDC yield depend on Co:Pd molar ratio. The most suitable value is 1. Further increase of Co loading does not increase phenol conversion but gradually decreases DPC selectivity. When Co:Pd ratio less than 1 catalyst activity drops down significantly.

Adding desiccant to reaction mixture enhances phenol conversion significantly, from 40 to 75–80%. A number of oxides and salts were tested as desiccant. CaO and AcONa seem to be the best in terms of phenol conversion and DPC selectivity. DPC yield 71 and 74% was reached when AcONa and CaO were added, accordingly.

Temperature dependence of DPC yield is extremal. Optimal synthetic temperature is 100–120°C.



Effect of desiccant nature on catalyst performance

