

ABSTRACT

The invention provides an efficient process for producing
5 alkylated aromatic compounds by directly reacting an aromatic
compound with a ketone and hydrogen in a compact reactor. The
invention further provides a process for producing phenol which
includes a step of producing cumene by the above alkylation
process.

10 The process for producing alkylated aromatic compounds
includes feeding raw materials including an aromatic compound,
a ketone and hydrogen in a gas-liquid downward concurrent flow
mode to a fixed-bed reactor packed with a catalyst thereby to
produce an alkylated aromatic compound, wherein the catalyst
15 includes a solid acid component and a metal component, the
catalyst is loaded in the fixed-bed reactor such that the
catalyst forms a catalyst layer, and the reaction gas flow rate
defined by Equation (1) below is not less than 0.05 at an
entrance of a layer containing the solid acid:

20
$$p_g \cdot u_g \cdot [p_{air} \cdot p_{water} / (p_g \cdot p_l)]^{1/2} \text{ (kgm}^{-2}\text{s}^{-1}\text{)}$$