

## Reaction Pathways of Catalytic Wet Oxidation of Phenol using Pt catalyst

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Catalytic wet air oxidation(CWAO) of phenol solution was carried out on the 5wt% Pt/Al<sub>2</sub>O<sub>3</sub>, Pt/TiO<sub>2</sub> and Pt/A.C at 426K and 2.3Mpa and CWAO of maleic acid solution was carried out on the 1wt% Pt/Al<sub>2</sub>O<sub>3</sub> at 434K and 1.2MPa. Phenol solution was readily oxidized into low molecular weight acids as maleic acid and fumaric acid via hydroquinone, catechol and benzoquinone. However maleic acid solution was required severe high temperature to be totally oxidized into carbon dioxide and water. The reaction pathways of phenol solution oxidation into low molecular weight acids and malic acid solution oxidation into carbon dioxide and water were studied on the basis of reaction intermediates. Consequently, the reaction pathways of totally oxidation of phenol solution were proposed.