



## Total Oxidation of Toluene and Propane over Co<sub>3</sub>O<sub>4</sub> Catalysts: Influence of Precipitating pH and Washing

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Catalysts	Yield (%) <sup>a</sup>	SSA (m <sup>2</sup> g <sup>-1</sup> ) <sup>b</sup>	V <sub>p</sub> (cm <sup>3</sup> g <sup>-1</sup> ) <sup>b</sup>	D <sub>p</sub> (nm) <sup>b</sup>
Co-pH 8.5-1	77	20.2	0.040	7.7
Co-pH 8.5-24 h-1	71	25.9	0.086	12.7
Co-pH 8.5-80 °C-1	68	15.9	0.044	10.4

<sup>a</sup> Product yields estimated by assuming that all Co was converted into Co<sub>3</sub>O<sub>4</sub>.

<sup>b</sup> Specific surface areas, total pore volumes and average pore sizes obtained from N<sub>2</sub> adsorption isotherms.



**Figure S1.** Variation of (A) toluene conversion (B) propane conversion to CO<sub>2</sub> with the reaction temperature during three consecutive cooling cycles over Co-pH 9.0 catalyst.



**Figure S2.** (A) N<sub>2</sub> adsorption–desorption isotherms and (B) pore size distributions of cobalt oxides prepared at different conditions.