

Catalytic decomposition of 1,2-dichlorobenzene over $\text{MoO}_3\text{-V}_2\text{O}_5/\text{TiO}_2$ catalysts

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The destruction of volatile organic compounds, such as polychlorinated dibenzodioxins(PCDDs) and polychlorinated dibenzofurans(PCDFs) has received a lot of attention, due to a worldwide concern about the toxicity of these compounds. Thus, stringent limits have been imposed on the emissions of such compounds in many countries. Catalytic oxidation can be utilized for destruction of these compounds what have high toxicity and low concentration in the exhaust gas to CO_2 and HCl. It operates at a relatively low destruction temperature, works for a wide range of pollutant concentration, and exhibits an excellent selectivity for the formation of harmless products.

A systematic investigation of catalytic decomposition of 1,2-dichlorobenzene was carried out on $\text{MoO}_3\text{-V}_2\text{O}_5/\text{TiO}_2$ catalysts prepared by impregnation method. $\text{MoO}_3\text{-V}_2\text{O}_5/\text{TiO}_2$ catalysts were characterized by XRD, N_2 sorption analysis, Raman spectroscopy, and SEM etc. $\text{MoO}_3\text{-V}_2\text{O}_5/\text{TiO}_2$ catalysts showed relatively high activity compared to $\text{V}_2\text{O}_5/\text{TiO}_2$ catalysts at low temperature.