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## **A WASTE CATALYST FOR A HAZARDOUS CHLORINE – CONTAINING PLASTIC WASTE**

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### **Abstract**

The recycling of plastic waste is important both in the conservation of resources and the environmental protection. A plastic waste (PE/PP/PS/PVC) was pyrolyzed over a series of post-use FCC catalysts using a fluidizing reaction system similar to the FCC process operating isothermally at ambient pressure. Experiments carried out with these catalysts gave good yields of valuable hydrocarbons with differing selectivity in the final products dependent on reaction conditions. A model based on kinetic considerations associated with chemical reactions and catalyst deactivation in the catalytic degradation of plastics has been developed. Greater product selectivity was observed with a hybrid catalyst of MCM-41/Cat-R1 with more than 70.5 wt% olefins products. It is demonstrated that the catalytic degradation of post-consumer chloro-commingled plastics over these recycled catalysts coped with the utility of fluidizing cracking system was shown to be a useful method for the production of potentially valuable hydrocarbons.

*Key words:* catalyst, plastic waste, pyrolysis, selectivity

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