

Attrition characteristics of FCC catalysts at the bubbling fluidized bed

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Solid particle attrition has often been one of the major obstacles for developing a new fluidized bed processes. Especially at high temperature and high pressure conditions, solid attrition and fine particle scattering occur more frequently. So far, the ASTM D5757-95 fluidized bed test has been one of the most commonly used attrition resistance evaluation methods. However previous ASTM studies reported just ambient temperature and relatively low pressure results. In this study, attrition tests were executed at real operating conditions with varying temperature, pressure, solid height and input gas flow rate at the bubbling fluidized bed reactor. AI (attrition index), CAI (corrected attrition index), particle size distributions and microscopic images of FCC catalyst were compared with ASTM results.