

COMPOSITIONS AND PROCESSES FOR REDUCING NO_x EMISSIONS DURING FLUID CATALYTIC CRACKING

Abstract

Compositions for reduction of NO_x generated during a catalytic cracking process, preferably, a fluid catalytic cracking process, are disclosed. The compositions comprise a fluid catalytic cracking catalyst composition; preferably containing a Y-type zeolite, and a particulate NO_x reduction composition containing particles of a zeolite having a pore size ranging from about 3 to about 7.2 Angstroms and a SiO₂ to Al₂O₃ molar ratio of less than about 500. Preferably, the NO_x reduction composition contains NO_x reduction zeolite particles bound with an inorganic binder, In the alternative, the NO_x reduction zeolite particles are incorporated into the cracking catalyst as an integral component of the catalyst. Compositions in accordance with the invention are very effective for the reduction of NO_x emissions released from the regenerator of a fluid catalytic cracking unit operating under FCC process conditions without a substantial change in conversion or yield of cracked products. Processes for the use of the compositions are also disclosed.

Figure 1