

Abstract

Disclosed is a catalytic cracking process and a catalyst system, the process comprising a step of contacting a cracking feedstock with a catalytic cracking catalyst in the presence of a radical initiator for reaction under catalytic cracking conditions; wherein the radical initiator comprises a dendritic polymer and/or a hyperbranched polymer, the dendritic polymer and the hyperbranched polymer each independently has a degree of branching of about 0.3-1, and the dendritic polymer and the hyperbranched polymer each independently has a weight average molecular weight of greater than about 1000. The catalytic cracking process is beneficial to enhancing and accelerating the free radical cracking of petroleum hydrocarbon and promoting the regulation of cracking activity and product distribution; by using the process disclosed herein, the conversion of catalytic cracking can be improved, the yields of ethylene and propylene can be increased, and the yield of coke can be reduced.

Fig. 1