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论文

助催化剂对N催化剂催化乙烯-苯乙烯共聚反应的影响

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摘要 研究了N催化剂分别与助催化剂$AlEt_3$和$Et_2AlOAlEt_2$结合，在给电子体二苯基二甲氧基硅烷(DDS)存在下，催化乙烯和苯乙烯共聚合反应，考察了Al/Ti摩尔比对共聚反应的影响．共聚产物经过丁酮(MEK)和四氢呋喃(THF)连续抽提，表明共聚产物包括无规聚苯乙烯, 乙烯-苯乙烯共聚物和乙烯均聚物. 乙烯-苯乙烯共聚物分别用^{13}C-NMR、DSC和GPC进行表征, 结果表明，助催化剂不仅对N催化剂的聚合活性有影响，而且对共聚产物中各级份的重量比例也有显著影响;特别是对乙烯-苯乙烯共聚物中苯乙烯的含量、熔点(T_m)和玻璃化转变温度(T_g)有明显的影响.

关键词 N催化剂 助催化剂 乙烯-苯乙烯共聚物

分类号

INFLUENCE OF COCATALYST ON THE COPOLYMERIZATION OF ETHYLENE AND STYRENE CATALYZED BY N-CATALYST

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Abstract The copolymerization of ethylene and styrene was carried out using N catalyst activated with $AlEt_3$ and $Et_2AlOAlEt_2$ at the present of DDS. The optimum copolymerization conditions of Al/Ti was investigated. The copolymerization products were fractionated by successive solvents extraction with boiling butanone and THF. The experimental results indicate the copolymerization products include polystyrene,ethylene-styrene copolymer,and polyethylene. The ethylene-styrene copolymers were characterized by ^{13}C-NMR. DSC and GPC. It is found that cocatalyst not only affects copolymetization activity of N-catalyst,but also influences the ratio of different fractions in coplymerization products,especially the styrene incorporation,the melting point and the glass transition temperature of ethylene-styrene copolymer.

Key words N-catalyst Cocatalyst Ethylene-styrene copolymer

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