溶劑極性對矽橡膠胺解反應之效應

Room temperature vulcanized polydimethylsiloxane network was cracked by aminolysis reaction under ambient condition in this study. By adding ethanol to diethylamine, potassium hydroxide was soluble in the cosolvent, which greatly enhanced the nucleophilic cleavage reaction of the Si-O bond by amine. Complete dissolution time was reduced from 8 hours to 25 minutes. However, backbiting effect was found to be important using polar solvents, as was evidenced by the fact that the main products were cyclic compounds, mostly D/sub 4/. If less polar solvents were employed, the main products became linear siloxane polymers with measured weight average molecular weight of 17000. In this case, the end groups were hydroxyl group and ethoxyl group.