Crystalline Polyaldehydes

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Makromol. Chem., **37**, 149 (1960)

We found that aldehydes such as acetaldehyde propionaldehyde and trichloroacetaldehyde were polymerized by organometallic compound or by metal alkoxide to give crystalline resinous polymer of high molecular weight.

Crystalline polyacetaldehydehyde was much less soluble in organic solvents than the amorphous one. The infra-red spectrum of crystalline polyacetaldehyde was shwn to be sharper than that of amorphous one and to have specific absorption bands, although it indicated also the structure of methyl polyoxymethylene.

Active species of this polymerization was supposed to be the metal alkoxide.

Polymerization of Diketene

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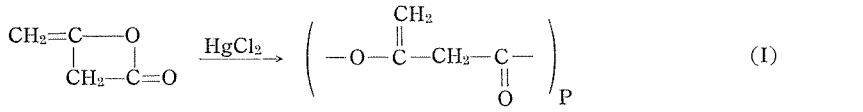
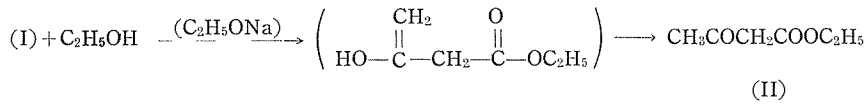
It was found that mercuric chloride polymerized diketene to give the polymer of polyester structure (I). The molecular weight of this polymer was 1630. The structure of the polymer was assumed by the infra-red spectrum. The alkali-alcoholysis of the polymer with ethanol gave ethylacetoacetate (II), and this finding supports the structure (I).



(I)



(II)

Polymerization of Olefins by the Binary Mixture of Organometallic Compond and Silica-Alumina-Titania

Junji FURUKAWA, Takeo SAEGUSA, Teiji TSURUTA, Shiro ANZAI, Tsuneaki NARUMIYA and Akihiro KAWASAKI

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Silica-alumina-titania was prepared by the hydrolysis of a mixture of ethyl orthosilicate, alumilinum isopropoxide and ethyl orthotitanate followed by calcination. The catalyst consisting of silica-alumina-titania (wt. ratio 45 : 5 : 50) and