

Abstract

Let me introduce myself briefly. My name is Dr. HONG, and I am responsible for developing several projects.

For example, CO₂ based materials' development, Cellulose nanofibers' Applications, and Eco-friendly Materials' development.

In this presentation, I'd like to show several research results for double metal cyanide complex (DMC) catalyst based on Zn– Co metal component. The basic principles of DMC catalyst is well known and anyone can get information from internet.

However, Our group is aiming for polyurethane applications and so we have to consider more things.

Firstly, I'd like to show the effect of complexing agent types for DMC catalyst synthesis.

Our group have tested 8 different types of complexing agents.

For example, Hydroxy, Diester, Keto-ester. Alkoxy, Ketone, Dicarboxylic acid, Vegetable oil and saccharide.

In hydroxyl compounds as complexing agent, our group got molecular weight 3850~3900 polycarbonate polyol. It shows that this polyol contains 16 wt% CO₂ in the chemical chain.

In diester compounds as complexing agent, our group got molecular weight 1700~1973 polycarbonate polyol.

In keto-ester compounds as complexing agent, our group got molecular weight 2912~22418 polycarbonate polyol. In alkoxy compounds as complexing agents, our group got molecular weight 1400~2200 polycarbonate polyol.

Let me conclude with my opinion.

Our group got various DMC catalyst preparation technology and can control the molecular weight of polycarbonate polyol. And, the maximum content of CO₂ is 16 wt%.