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Studies on the Emulsifying Plasticizer

Toshio TANAKA*

In the plastic industries, various surfactants have been used for emulsifying of the starting monomer and the obtained polymers at emulsion polymerization. They are also necessary as the dispersing agents at pearl polymerization.

Plastics must be blended with plasticizers to improve their physical properties, since they are generally hard and brittle. Then, if it is able to make a compound which has two activities, both the emulsifying and the plasticizing, it is very useful.

This report was concerned with the preparation of the following three types of the oxyethyl esters.

(1) Bis- [mono-, di-, tri-, and tetraoxyethyleneglycol] phthales and—adipates obtained from the corresponding polyoxyethyleneglycolchlorohydrin and potassium phthalates and potassium adipate.

(2) The ethyl ethers of those oxyethylene esters (1) obtained from the corresponding polyoxyethyleneglycolmonoethylether and dibasic acids.

and (3) Neopentylglycol-di- $[\beta$ -hexyl-, octyl-, decyl-, dodecyl-, tetradecyl-, and hexadecyloxy]-propionates obtained from neopentylglycol and the corresponding β -alkoxypropionic acids.

Furthermore, the plasticizing activities of them were determined with P. V. C. plastics. The results were as follows. The first group gave the limited compatibility against P. V. C., while the second and third types were compatible with P. V. C.. Generally, their compatibilities decreased with the increase of ethoxy radicals. They gave good low-temperature flexibilities on P. V. C. resin.

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