

Effect of mixture components on the properties of MUF resin

Abstract

The effect of disodium tetraborate decahydrate (DTD) on the properties of melamine-urea-formaldehyde (MUF) resin was studied. The leachability from the MUF resin into solvents was investigated. The solvents chosen in this research were distilled water, 10% ethanol, and 30% ethanol. The main constituents that contribute to the leaching in water are melamine, additional urea, and DTD concentrations. Based on the statistical analysis using Response Surface Methodology, it was found that melamine and DTD should be reduced and additional urea required to get the least leach out in water. For 10% ethanol, the components that contribute to the leaching were melamine, initial urea. Therefore, these should be reduced to get the least leach out in 10% ethanol. The similar trend was also observed in the case of 30% ethanol solvent. On the other hand, addition of DTD resulted in longer resin's shelf-life and better water solubility. However, DTD gave higher resin viscosity and pH. © 2008 Academic Journals.