

O 45. LEACHATE BASED GLUE SYNTHESIS APPROACH

Mahmut GÖKTAŞ^{1*}, Melayib BİLGİN²

¹*Aksaray University Department of Engineering Management*

²*Aksaray University Department of Engineering Management/ department of Environmental Engineering*

E-mail: *mahmutgoktas.01@hotmail.com*

ABSTRACT: Today, converting leachate into a less environmentally harmful form or using it as raw material is considered an alternative approach for effective solid waste management. Developing world rules support environmentally friendly product synthesis. In this context, there is a transition from waste to green chemistry. Solutions with different concentrations were prepared to determine the distribution of the characteristic features of leachate in the garbage cycle in terms of environmental and beneficial product synthesis. An attempt was made to produce green phenolic resin by using phenol and formaldehyde with these solutions. The most important innovation of the experimental study is the preference of leachate to prepare formaldehyde solution. Phenol and formaldehyde solutions were synthesized under alkaline conditions. Thermogravimetric (TGA) measurements were carried out with FT-IR spectrum analysis to identify the specific properties of the product obtained after the synthesis stage. The bond strength of each resin sample was investigated under dry and wet conditions. In addition, the bonding strength of each resin sample was evaluated according to the EN 205 standard and compared with the values specified in the EN 12765 standard. The obtained FT-IR and TGA results provide data that organic compounds in the leachate may negatively affect the resin samples.

Keywords: Phenol, Leachate, Green Phenolic Resin