

Malczewska, B., Czaban, S., Glowski, R., Swierzko, R., Kiwacz, T., Sobota, J. Influence of Admixture on Rheological Properties of Ash-Water Mixture. *Ochrona Srodowiska* 2014, Vol. 36, No. 3, pp. 65–70.

Abstract: Rheological parameters of ash-water mixture with Pantarhit[®] TB 100 (FM) added were determined as a function of ash content in the hydromixture. While applying the admixture, particularly at doses exceeding 2% of ash content, a tendency of particulate matter to sediment was noted. This is a highly unfavorable phenomenon in case of hydraulic transport of ash, causing significant increase of energy losses upon transport of such a mixture. It was demonstrated that an increase of the admixture amount to 3%, at the ash/water ratio of 0.9/1.0, did not impact the mixture behavior in terms of its texture, compared to Pantarhit[®] TB 100 (FM) at 2%. In case of non-newtonian liquids, viscosity determination consists in measuring flow curves and selection of the appropriate rheological model. In the experiment, the two two-parameter models (Ostwald de Waele power-law model and Bingham model) and one three-parameter model (Herschel-Bulkley model) were applied to describe the flow curves. The tested ash-water mixture was demonstrated to possess thixotropic structure.

Keywords: Hydrotransport, rheology, viscosity, shear stress.