

**Janik, M., Kus, K. Analyzing the Possibility of Improving the Parameters of Hydraulic Transport for Sludge Generated During Water Treatment. *Ochrona Srodowiska* 2011, Vol. 33, No. 3, pp. 53–57.**

**Abstract:** Water treatment plants produce large volumes of sludge that requires thickening prior to utilization. The use of mixing is recommendable during sludge processing, since this causes the particles of the mechanically thickened sludge to disintegrate, and consequently changes favorably its rheological properties. Within the scope of the study reported on in this paper determined were the rheological properties of coagulation sludge, which was mechanically thickened (3.5–4.5% of dry solids content) and additionally subjected to mechanical disintegration. Rheological parameters were determined by viscosimetry, using the Ostwald-de Waele model. Measurements were performed in a rotational rheometer, using methods adapted to flocculated sludge with thixotropic properties. It has been demonstrated that the flow curve of the sludge was strongly influenced by the dry solids content and mixing conditions. The disintegration of the sludge significantly reduced friction losses during flow in the pipeline. The variable properties of the sludge, as well as the equally variable mixing conditions, substantiate the necessity of an individual approach to the disintegration process and to the computation of thickened sludge flow in the pipeline.

**Keywords:** Water treatment sludge, rheological properties, mechanical disintegration, sludge mixing.