

Study of coal water fuel rheology

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Abstrak

The rheological properties of CWF were studied in laboratory scale. A subbituminous coal was ground to a medium size of about 75 micrometer and mixed with water and small quantities of additives. The coal contents and types of chemical additives were varied to investigate effects on rheology behavior. Direct plots of viscosity and shear stress versus shear rate were obtained using a rotational viscometer. The results indicate that CWF exhibits non-Newtonian pseudoplastic rheological behavior. The viscosity increases rapidly with increasing coal concentration. The CWF of 55% coal content, obtained by adding a mixture of CMC and kaocool, represents a practical slurry that shows good handling properties and good automation behavior. One of the most obvious factors that may have an effect on rheological behavior of viscosity decreases when the temperature increases up to 50 degree Celcius but increase at 80 degree Celcius. However, the yielded CWF stress point increases with increasing temperature up to 80 degree Celcius.