

## Thermoplastic 상태의 석탄 점도 평가 기술 개발

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The plastic property of a coal is a significant factor influencing the mechanical properties of metallurgical coke. The plasticity of coal depends on the physical and chemical properties of coal as well as the operating condition. Therefore, it is necessary to determine the plasticity of various coals under the conditions similar to the coking process in order to predict the property of the coke. The objectives of this research are to install a viscometer and to measure the viscosity.

We designed a viscometer which consists of the cell using the concentric cylinder configuration, short cylindrical furnace, a quick connect for rotor and torque measuring unit connection, and ventilation system for volatiles. A packing device was also designed and constructed for consistent packing. Viscosity measurement procedure was established to obtain repeatable data. We measured the viscosity of plastic coals at the temperatures ranged between 300°C and 600°C, and the data do show the U shape trend of molten coal viscosity.