

Quantitative study for predicting dust explosibility characteristics (Kst, Pmax) of coal dust

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In the coal silos, which reserve coal, coal dust has been the cause of many severe incidents leading to fatalities and injuries. To prevent dust explosions in coal silos, the silos should be designed based on dust explosibility characteristics, the maximum overpressure (Pmax) and dust deflagration index (Kst). About pure compound such as sugar and lactose, the way of predicting Pmax and Kst had been studied. However, in the case of coal, which is non-uniformed mixture, there has been no similar research, so the characteristics have been always attained by experiments. In this study, the model predicting Pmax and Kst of coal dust is introduced based on the coal properties.