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Hardgrove Grindability apparatus Asper

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Description

SHIVAM INSTRUMENTS is today one of the eminent and reputed manufacturer of Scientific Instruments. Ever since its existence from 1981, it has maintained its bright image worldwide with its high quality scientific instruments on indology at reasonable prices. We at SHIVAM INSTRUMENTS are constantly working for producing instruments that are widely use in all type of industrial laboratory & in research areas. We have more than 300 instruments on various fields of scintific, viz., LABORATORY OVEN, INCUBATOR, B.O.D. INCUBATOR, MUFFLE FURNACE, LAMINAR FLOW BENCH, AUTOCLAVES.

Products

We manufacture exclusive laboratory instruments so that they easily meet the international quality parameters. These are also highly durable and completely safe to use. With strict compliance to various international standards, our products are of superior



This equipment is suitable for determination of hardgrove grindability index of coal as per astm-d-409 and is 4433. the equipment is consist on a very havy base fitted with mains, digital counter, 1/4 hp. single phase motor 220v. ac 50hz. with stationery bowl placed horiziuantly and eight steel of 25mm daimeter, upper ginding ring. standard weight automatically shut motor of after 60 revolutions, the steel balls rotates under contant pressure of 29.03 kg. complete unit provided with digital counter, lead etc. to work on 220 volt ac.



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quality. Our laboratory instruments are manufactured using premium quality raw materials and widely used in various research labs, etc. Tested for both specific features and performance, our products are cost effective and manufactured after intensive research and development.

MANUFACTURING FACILITY

We have a strong infrastructural set up. Our manufacturing unit is equipped with latest machines and tools to manufacture defect free products. We are equipped with state-of-the-art production unit and laboratory, which is continuously upgraded from time to time.

which serve the purpose they are destined for. We can supply customized products in volumes as per the demand of our customers. Our unit is installed with the most modernized and sophisticated production facility which can easily churn out

instruments in bulk quantities in least turnover time. Our production unit functions round the clock in an efficient manner to provide the best to our clients.

TEAM

We have a strong and dedicated team of professionals and lab experts who successfully undertake everything from planning and designing to testing. Our team is completely focused to achieve the desired targets within the shortest possible time by reducing the amount of wastages. Right from conceptualization to final development each production process in undertaken by our proficient team which has wide knowledge and experience. Our team works in complete coordination with all the departments so as to develop the most flawless and superlative quality product.

The grindability of Coal is a measure of the ease with which it can be ground fine enough for use as a pulverised fuel, & it also shows the physical properties of coal like hardness, tenacity and fracture. There is a fixed relationship between Grindability and rank of coal in the natural series from brown coal to lignite & anthracite. Coals easier to grind have 14 to 30 percent volatile matter. Coals with higher volume matter are more difficult to grind. However petrographic & mineral constituents influence grindability. The hardgroove index of coal is affected by its moisture content and hence on the humidity of the atmosphere in which the test is carried out.

Experimental Procedure

1 kg of coal sample was taken and crushed to pass through 4.75mm sieve. The resulting sample was put in two sieve of 1.18mm sieve (upper sieve) and +600 size (lower sieve). Sieve the material for 2 minutes until the entire material pass through

1.18mm sieve. The 1.18mm by 600 size coal was mixed thoroughly and 120 gm of the sample was removed for sample divider. The 50gm sample was taken in a ball mill along with 8 iron balls with diameter 25.4 ± 0.003 mm. The mouth of the ball mill was closed and it was set to rotate for about 60 revolutions, when the rotation is achieved, the machine was stopped. The sample left in the ball mill was then collected along with any powdered substance sticking to the surface of the machine by help of a brush. This sample was then put in a sieve of 75 size and was shaken for about 10 minutes. After sieving for about 5 minutes, the sample which passes through 75 size was weighed on the balance.

Calculation - The hard groove grindability index of coal is calculated using the following formula. $HGI = 13 + 6.93 W$
 W = weight of the test sample passing through 75 sieve after grinding.