

Granular Binder Electrodes Lining Lab

General Description

Commercially available carbon products show a wide range of properties, particularly in the degree of calcination, baking, or graphitization and, as a result, in density. The measurement of the real density is essential to ensure and understand the heat treatments that the different materials have undergone during their production, which can lead to issues during their use. Combined with other measurements, such as the crystallite size measured by X-Ray diffraction, it could be used to determine the nature of a given coke or to perform temperature distribution profiles in a baking furnace.

With the RDC-152 apparatus, the real density at 25°C of a milled product is determined by pycnometry. The equipment is composed of several vacuum chambers where the pycnometers containing the samples are filled with xylene or water determined by the type of material to be measured. The number of chambers may be increased depending on the required testing capacity. After filling, the pycnometers are placed in a water bath at 25°C until the temperature has stabilized. By measuring the weights at different analysis steps, the real density is calculated and reported in kg/dm³.



Technical Information

Standard Method	ISO 8004, ISO 9088, ISO 6999
Property	Real Density [kg/dm ³]
Sample	5 g of powder (< 63 µm) or of pitch (2 - 1 mm)
Process Time	~ 2 hours
Installation	Workbench
Dimensions (LxWxH)	Vacuum Unit : 150 x 60 x 80 cm Bath : 92 x 43 x 48 cm
Weight	Vacuum Unit - 37 kg Bath - 45 kg
Electrical Property	Vacuum Unit : 230 V 1/N/PE, 50 Hz 0.42 kW, 2 A Bath : 230 V 1/N/PE, 50 Hz 0.35 kW, 1.6 A
Certified Reference Material	RDC 1152-C
Consumable	Distilled Water and Xylene
Database Connection	No

Additional Recommended Equipment

Drying oven (min. temperature 180°C)
Dessicator
Weighing scale with an accuracy of 0.0001 g
Crusher (< 4 mm)
Vibratory Mill (< 63 µm)
Sieving machine for the pitch (2 and 1 mm sieves)

Certified Reference Material



RDC 1152-C

Weight per unit	150 g
Number of tests	30