

GOUY'S METHOD GMX - 01



Apparatus for Measurement of Susceptibility of Paramagnetic Solids by Gouy's Method

In the Gouy's method of susceptibility measurement, the solid sample in the form of a long cylinder (area of cross section A) is hung from the pan of a balance and is placed such that one end of the sample is between the pole-pieces of the magnet (field H) and the other one is outside the field. The force exerted on the sample by the inhomogeneous magnetic field is obtained by measuring the apparent change (Δm) in the mass of the sample. The susceptibility χ is given by

$$\chi = 2\Delta mg / AH^2$$

if the sample is in the form of powder, it is filled in a long nonmagnetic tube which is then suspended from the pan of the balance

The set up consists of the following:

(a) Scientific Balance,

Capacity : 200 gms

Sensitivity : 1/10 mg. by vernier

Beam : Hard Bronze/ Brass

Arrestment : Circular, falling away type

Air Damping : Very quick and positive, beam coming to rest in 2-3 sec

Chainomatic Device : A gold plated chain is suspended from the beam with its other end screwed on the Device rotating drum on which a scale graduated from 0 to 10 div each division representing 1mg is installed.

By the movement of this scale before a vernier, reading upto 1/10th mg is taken

(b) Sample in the form of a long rod : Set of samples

(c) Electromagnet, Model : EMU-50T

Pole Pieces : 50mm tapered to 25mm Mag. Field : 10KG at 10mm air gap

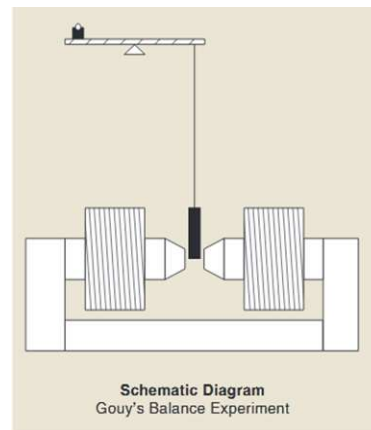
Energizing Coils : Two of approx. 4.0 ohms each.

(d) Constant Current Power Supply, Model CC-50

Power supply : 0- 4A (specifications as per datasheet)

(e) Digital Gauss meter, Model DGM-100 (specifications as per datasheet)

Note: There may be any change in specification due to continuous R & D without notice.



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