

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
SUPPLEMENTARY CERTIFICATE
OF
STANDARD SAMPLE No. 102
SILICA BRICK

Density - - 2.33 g/cm³ at 25°C

The above value was obtained as follows:

The weighed sample was placed in the partially filled picnometer and very thoroughly mixed with the test liquid (distilled water) by stirring with a glass rod and evacuating to remove entrapped air. The picnometer was then completely filled with the test liquid and the excess removed by filter paper. All weighings made in air and applied in the following formula:

$$d_1 = (d_w - \rho) \frac{(W_s - W_p)}{(W - W_1) + (W_s - W_p)} + \rho$$

in which

d_1 = density in grams per milliliter

d_w = density of calibrating liquid (usually water)

W_s = apparent mass of substance

W_p = apparent mass of picnometer

W = apparent mass of picnometer filled with calibrating liquid

W_1 = apparent mass of picnometer substance and calibrating liquid to fill

ρ = air density

Specific gravity at temperature t°/t° may be obtained by dividing d_1 at temperature t by density of water at temperature t .

The formula assumes that the temperature and air density remain the same throughout the determination of the density of the sample.

(Signed) LYMAN J. BRIGGS, Director.

Washington, D. C.
May 13, 1937