

## POROSITY CALCULATION OF COMPACTED SALT SAMPLE USING VACUUM SEALING METHOD

**Scope:** To determine the bulk specific gravity & porosity of specimen of compacted salt sample

**Apparatus used:** Corelok InstronTek, Inc

**Test Specimen:**

Sample ID: 250\_03 (Oven dried)

Sample Type: Salt, Core

Shape: Cylindrical

*Figure 1: Salt Sample 250\_03*



**Calculation:**

Sample (Oven dried) weight in air,  $W_1 = 1217.480 \text{ g}$

Membrane (InstronTek provided) weight,  $W_p = 20.240 \text{ g}$

Sample weight in water (Submerged),  $W_2 = 646.240 \text{ g}$

Density of Water ( $\text{g/cm}^3$ ) for  $20.9^\circ\text{C}$  (recorded)  $0.99768$

Bulk Specific Gravity of the sample,  $G_b = 2.14$

*Using CoreGravity (Software)*

So, bulk density,  $D_b = 2.135 \text{ g/cm}^3$

Sample volume,  $V = 570.240 \text{ cm}^3$

Maximum Specific gravity,  $G_m = [W_1 / (W_1 - W_3)] \times \rho_s = 2.157$

(Based on calculation for Sample 90\_05, where  $W_3$  = sample weight in Silica oil- pores filled with same fluid)

Hence we will assume,  $G_m = 2.157$

% Porosity =  $(1 - G_b / G_m) \times 100 = 0.79\%$

**Results:**

Therefore the sample volume =  $570.240 \text{ cm}^3$

Bulk Specific Gravity,  $G_b = 2.14$

And calculated Porosity =  $0.79\%$