

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

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

**Apparatus:** Corelok InstronTek, Inc

### Test Specimen:

Sample ID: 175\_15 (P1) (Oven dried)

Sample Type: Salt, End piece

Shape: Cylindrical

Figure 1: Salt Sample 175\_15 (P1)



### Calculation:

Sample (Oven dried) weight in air,  $W_1 = 65.160\text{g}$

Membrane (InstronTek provided) weight,  $W_p = 11.82\text{g}$

Sample weight in water (Submerged),  $W_2 = 30.630\text{g}$

Density of Water ( $\text{g}/\text{cm}^3$ ) for  $22^\circ\text{C} = 0.9977$

Using *CoreGravity* (Software), Bulk Specific Gravity,  $G_b = 2.046$

Therefore, bulk density,  $D_b = 2.041 \text{ g}/\text{cm}^3$

And sample volume,  $V = 31.926 \text{ cm}^3$

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

(Calculated using Silica oil for Sample 90\_05)

Therefore, assumed  $G_m = 2.157$

$$\% \text{ Porosity} = (1 - G_b / G_m) \times 100 = 5.15\%$$

### Results:

Sample volume =  **$31.926 \text{ cm}^3$**

Bulk Specific Gravity,  $G_b = \underline{\underline{\mathbf{2.046}}}$

Porosity =  **$5.15 \%$**

