**Safety:** Wear the appropriate PPE when working in the Lab.

**Purpose:** Determination of Bulk Density for Crystalline Salt Samples

# Procedure:

Background Information:

It is sometimes important to know how much space a certain weight of a crystalline product will take up in transport and/or storage. This is where the term bulk density is used. Bulk density for crystalline samples is analogous to the density for liquid samples. It denotes the weight of a certain volume of crystalline sample or the volume of a certain weight of a crystalline sample. Bulk density is an intrinsic property of the material being tested and does not depend on the amount of the sample present. The following procedure is used to determine bulk density.

Scope:

A crystalline sample is thoroughly compacted to a known volume in a tarred graduated cylinder. The mass of the sample in the cylinder is measured. The bulk density is calculated and converted to lb/ft3.

Equipment:

100-mL graduated cylinder

Funnel

Small spatula

Weighing Balance

1. A 100-mL graduated cylinder is placed on the balance and tared to zero.

2. The Cylinder is filled with the salt sample until the level reaches 100ml.

3. The cylinder is tapped lightly with spatula until sample ceases to drop.

4. The volume of the sample in the cylinder is recorded.

5. The cylinder is placed back on the balance and weight of the sample is

recorded.

6. The bulk density can be determined by using the following calculation

**weight of salt sample ( g ) / Volume of salt sample ( mL ) = bulk density ( g/mL )**

**g / mL x 62.4 = lb. / ft3**

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| Revision  Number | Revision  Date | Effective  Date | Revision  Author | Quality  Approval | Production Approval | Revision Description |
| 00 | 03/28/06 | 03/28/06 | Carl Mooney |  |  | New Document |
| 02 | 06/29/09 | 06/29/09 | Stacey Lindsey |  |  | -Removed compacting the sample initially  -3 year revision  -Placed on new form |
| 03 | 8/16/12 | 8/16/12 | Stephen Ballew | Deborah  Durbin | Jason  Bumgarner | -3 year revision  -Placed on new form |
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