Kentucky Method 64-225-08
Revised 04/15/08
Supersedes 64-225-02
Dated 12/27/02

SODIUM CHLORIDE

1. SCOPE: This test method outlines the procedure for testing sodium chloride to be used for road conditioning purposes.

2. APPARATUS AND MATERIALS:

   2.1. 1/2", 3/8", No.4, No. 8, and No. 30 Sieves.

   2.2. Calcium Chloride

   2.3. Dextrin Solution (2%)

   2.4. Dichlorofluorescein Indicator (0.1%)

   2.5. Silver Nitrate (0.1N)

   2.6. Iron Mortar and Pestle

   2.7. Nitric Acid (conc.)

3. PROCEDURE:

   3.1. Sieve Analysis: Pour entire sample through sand splitter, and reserve one of the two portions obtained. Repeat splitting until only about enough of one split portion remains to fill partially a 120 ml (4 oz.) sample bottle. Also weigh 100 g of the discard portions, and pour sample onto the top sieve of a stack which contains in order, 1/2", 3/8", No.4, No. 8, and No. 30 Sieves and Pan. Shake the entire stack with a circular motion and occasional gentle tapping for 2 - 3 minutes. Carefully remove sieves from the stack, starting with the pan, and weigh the size fractions. By leaving fractions in the weighing pan, the percent passing each sieve can be read directly from the balance without calculations.

   3.2. Sodium Chloride Determinations:

      3.2.1. Pulverize 25 - 30 grams of the sample in the 120 ml (4 oz.) bottle using iron mortar and pestle, or electrically powered grinder, and transfer to a weighing bottle. If there is evidence of moisture in the sample, it should be placed in a drying oven for 1 - 2 hours at a temperature of 100° to 150 °C. Remove from the oven, and cool in dessicator. Carefully weigh 5 gm of sample on an analytical balance, and transfer to a 500 ml volumetric flask. Add about 250 ml of distilled water, and mix with a swirling motion. If the sample does not completely dissolve, stopper the flask and

let set overnight. Bring the sample up to volume with distilled water, and mix well. Pipette a 10 ml aliquot, and transfer to a 250 ml erlenmeyer flask. Add 5 ml of a 2% dextrin solution and 10 drops of 0.1% dichlorofluorscein indicator. Titrate in subdued light with 0.1N silver nitrate to the color change from greenish-yellow in the solution to a salmon pink on the suspended precipitate.

3.2.2. Calculations: mL x 5.8434 = Percent NaCl

3.3. Moisture Content Determination:

3.3.1. On a top load balance, weigh a 150 ml beaker. Half-fill the weighed beaker with salt, and weigh again. Heat beaker with the salt in an oven at a temperature of 105°C to 110°C, for three hours. Cool in desiccator and reweigh.

3.3.2. Calculations:

Wt. beaker and salt - Wt. beaker = Wt. Sample

Wt. beaker and salt from oven - Wt. beaker = Wt. salt

Wt. sample - Wt. salt = Wt. moisture

Wt. moisture divided by Wt. sample x 100 = % Moisture

4. CALCULATIONS: Calculations are included in the Procedure.

5. PRECAUTIONS: A few drops of nitric acid may be used to aid in dissolving the salt sample. If nitric acid is used the solution must be adjusted to a pH of approximately 7 with calcium chloride.

6. REPORT:

6.1. Percent passing each required sieve.

6.2. % Sodium Chloride

6.3. % Moisture

APPROVED _____

DIRECTOR
DIVISION OF MATERIALS

DATE 04/15/08

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