METHODS OF SAMPLING AND TESTING
MT 526-16
MOISTURE ANALYSIS OF CLEAR ROADS CATEGORY 8A, 8B, AND 8C SOLID SODIUM CHLORIDE
(*Modified ASTM E534*)

1 Scope

1.1 This method is utilized to determine the water insoluble residue of Clear Roads specified salt for product acceptance by the Montana Department of Transportation. This method will serve as the reference method for salt with an insoluble residue of 0.0% – 10.0% by mass.

2 Referenced Documents

ASTM Standards
E534 Standard Test Methods for Chemical Analysis of Sodium Chloride

Other Standards
Clear Roads Document - Clear Roads Snow and Ice Control Chemical Products, Specifications, and Test Protocols (https://clearroads.org/wp-content/uploads/12-10-Final-CR-SPECS-wCategory4.pdf).

3 Apparatus and Reagents

3.1 *Analytical Balance*

3.2 *Desiccator*

3.3 *Oven*

4 Procedure

4.1 Weigh 100g of salt to the nearest 0.01g (split or quartered from original sample) into a previously dried and weighed moisture dish or pan. Distribute the salt in the vessel such that it is not more than 1/4 of an inch in depth at any given location.

4.2 Dry at 110°C for 2 hours.

4.3 Cool to room temperature in a desiccator and weigh.

5 Calculation and Reporting

5.1 Calculate the percentage of moisture as follows:

$$moisture, mass\ \% = \frac{(I - F)}{I} * 100$$

where:

F = final mass of the dry salt
I = initial mass of the wet salt

5.2 Report the insoluble residue to the nearest 0.01%.

6 Validation Data

6.1 Precision and Bias

Moisture %	$\sigma_{(n-1)}$ %	n	95% CL %	Intra Laboratory $\sigma_{(n-1)}$ %	Intra Laboratory n	Intra Laboratory 95% CL %	Inter Laboratory $\sigma_{(n-1)}$ %	Inter Laboratory n	Inter Laboratory 95% CL %
0-5.0%	0.005	29	0.03	0.006	3	0.03	0.006	6	0.04
5.1%-10.0%	0.008	31	0.05	0.008	3	0.06	0.009	6	0.06