

**METHODS OF SAMPLING AND TESTING**  
**MT 526-16**  
**MOISTURE ANALYSIS OF PNS 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 PNS 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**

PNS Document - Pacific Northwest Snowfighters Snow and Ice Control Chemical Products, Specifications, and Test Protocols for the PNS Association of British Columbia, Colorado, Idaho, Montana, Oregon and Washington. <http://pnsassociation.org/wp-content/uploads/PNSSPECS.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:

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

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