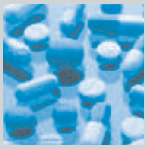
DENVER INSTRUMENT





Total Moisture of Potassium Nitrate

General

The total moisture (trapped moisture or water of crystallisation) is normally only obtained when the salt has completely dissolved. In many cases, formamide is used as a mediator or the titration is carried out at an high temperature. Some hydrates release their water of crystallisation without dissolving.

The compound dissolves very slowly in methanol. A methanol/ formamide mixture is more suitable.

Formamide improves the solubility of polar substances and is therefore preferred for the determination of water in inorganic salts.

Formamide accelerates the course of the KF reaction. It can also influence the stoichiometry of the KF reaction, and not more than 50% by volume should be added.

Reagent

Titrant: HYDRANAL-Titrant 2
Working medium: 30 ml
HYDRANAL-Solvent + 15 ml formamide
A one-component reagent can be used as well:
Titrant: HYDRANAL-Composite 2
Working medium: 30 ml methanol + 15 ml formamide

Primary Settings

Method ID:	KNO3
Use oven:	No
Auto start:	Yes
Blank:	No
Uncert. calc.:	Yes
Reproducibility:	0.1%

Parameters

Stirring speed:	600 rpm
Max. bur. speed:	150%/min
Min. titr. time:	10:00 (min:s)
Max. titr. time:	00:15 (h:min)
Max. volume:	10 ml

Sample

Sample ID:	Yes
Sample unit:	g
Advised amount:	1.000 g
Uncertainty:	0.001 g
Sample factor:	1
Result unit:	%
Number of digits:	6
Quality control:	No

Procedure

The sample is weighed out with a powder funnel.
Weigh by difference.
Sample amount: 1 g

Comments

1 g of sample needs approximately 8 minutes to dissolve completely in 45 ml of solvent.

If more sample is added to the cell, the solubility decreases. After each analysis, the solvent must be renewed.

Results

Mean: 0.246 ±0.015%
(K=2, 3 replicates)
K: coverage factor