KYOTO ELECTRONICS MANUFACTURING CO.,LTD.

KVX-01324enL

Application Memo

Water Content of Amine (3) [Aliphatic and Aromatic Amine (3)] Part-2

Industry	:	Organic Chemical
Instrument	:	Karl Fischer Moisture Titrator
Measurement method	:	Volumetric Titration (Direct Method)
Standards	:	JIS K 0113, ASTM E 203, ISO 760

1. Overview

Moisture titration using Karl Fischer reagent is popularly practiced water determination worldwide as the most reliable method. The procedure is adopted in many official standards as test method specified in ISO, ASTM, DIN, BS and JIS.
Here in this application, water content of both aliphatic and aromatic amine (3) is determined by volumetric titration according to JIS K 0113-2005 as quoted below. We use KEMAQUA KET solvent as extracting medium.
Side reaction of aliphatic and aromatic amine (3) can be removed by using mixture of commercially sold KET solvent and acetic acid.

The samples we have tested this time are as follows:
Methylamine(40%)/Ethylamine(70%)/Ethylenediamine/Anilin/N,N-Diethylethanolamine/N,N-Diethyl-p-Phenyldiamine/o-Phenyldiamine/m-Xylenediamine

2. Apparatus

Main unit	:	Karl Fischer moisture titration volumetric system
Electrode	:	Twin platinum electrode for KF titration

3. Reagents

Titrant	:	KEMAQUA TR-3 (Kyoto Electronics)
Solvent	:	KEMAQUA KET (for ketone) (Kyoto Electronics) , Acetic acid

4. Example

—Measurement results—

Sample name	Water content	
	(mg)	(%)
Methylamine (40%)	49.21	59.87
Ethylenediamine	0.7889	0.097
N,N-Diethylethanolamine	9.8782	0.11
o-Phenyldiamine	0.4931	0.11

Sample name	Water content	
	(mg)	(%)
Ethylamine (70%)	29.01	29.55
Anilin	0.8976	0.018
N,N-Diethyl-p-Phenyldiamine	0.6837	0.082
m- m-Xylenediamine	3.9984	0.27

Please feel free to contact us for any further information.

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