KYOTO ELECTRONICS MANUFACTURING CO.,LTD.

KVX-01304enL

Application Memo

Water Content in Ketone (3)

Industry	Organic chemical industry
Instrument	Karl Fischer moisture titrator
Measurement method	Volumetric titration (Direct Method)
Standards	JIS K 0113, ASTM E 203, ISO 760

1. Overview

Moisture titration with Karl Fischer reagent is the most reliable moisture measurement method in the world. The procedure is adopted in many official standards as test method specified in ISO, ASTM, DIN, BS and JIS.
Here in this application, we measure water content of ketone by direct method of KF titration according to JIS K 0113. The ketones induce side reaction of generating water with alcohol like methanol.

$R_2CO + 2ROH \rightarrow R_2C(OR)_2 + H_2O$

However, the side reaction can be avoided by titration with commercially sold solvent for ketone.

2. Apparatus

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

3. Reagents

Titrant	KEMAQUA titrant TR-3
Solvent	KEMAQUA solvent KET for ketone

4. Example

—Measurement results—

Sample name	Max volume	Water content	
		(mg)	(%)
Hexachloro-acetone	5mL	1.56	0.12
Acetonphenone	10mL	1.60	0.029
2-fluoroaceto-phenone	10mL	2.11	0.21
2,4-dihydroxy-acetophenone	5g	0.82	0.021
2-aminoaceto-phenone	10mL	4.46	0.13

Sample name	Max volume	Water content	
		(mg)	(%)
Pyruvic acid	1mL	2.39	1.07
2-ketobutyric acid	1g	3.30	0.95
Levulinic acid	10mL	4.05	0.22
3-benzoyl-propionic acid	5g	0.46	0.020
1,2-cyclohexoic acid	1g	3.00	0.90

Please feel free to contact us for any further information.

＜Contact＞Kyoto Electronics Manufacturing Co., Ltd.
Overseas Sales & Marketing Sect.
http://www.kyoto-kem.com/en/contact/form.php