KYOTO ELECTRONICS MANUFACTURING CO.,LTD.

KVX-01303enL

Application Memo

Water Content in Ketone (2)

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)	(%)
3-ocotanon	10mL	5.37	0.082
2-decanon	10mL	3.64	0.080
Di-n-hexyl ketone	5g	0.43	0.009
Cyclohexane	10mL	3.05	0.032
1,1,1-Trifluoro acetone	10mL	10.87	0.25

Sample name	Max volume	Water content	
		(mg)	(%)
Acetylacetone	10mL	2.15	0.043
2,5-hexane diol	10mL	4.29	0.32
Benzoylacetone	10g	1.47	0.037
Benzyl	10g	1.84	0.032
Dibenzoylmethane	10g	1.09	0.036

Please feel free to contact us for any further information.

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