KYOTO ELECTRONICS MANUFACTURING CO.,LTD.

KVX-01531-enL

Application Memo

Moisture of Plastics

Industry	:	Plastic, Rubber
Instrument	:	Karl Fischer Moisture Titrator
Measurement 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. Plastic samples are hard to dissolve in Karl Fischer solvent, and therefore, the indirect method using an oven to evaporate moisture in sample is generally practiced. The test sample is first heated in the oven, and the evaporated moisture is transferred to solvent by carrier gas where moisture titration is performed according to JIS K 0113-2005 Standard Test Method by Potentiometric, Amperometrtic, Coulometric and Karl Fischer Titration For indirect method, the extracting solvent ME from Riedel de Haen is used. Test samples measured this time are as follows:
Nylon 6, Polycarbonate, Polyethylene, ABS resin

2. Apparatus

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

3. Reagents

Reagent	:	Hydranal Composit 2 (Riedel de Haen)
Solvent	:	Extracting medium ME (for gas)(Hayashi Chemicals)

4. Example

－Measurement results－

Sample name	Sample (g)	Solvent	Oven (℃)	Water content	
				mg	%
Nylon 6	0.214	ME	150	4.47	2.09
Polycarbonate	2.498	ME	150	3.23	0.13
Polyethylene	2.944	ME	130	0.16	0.005
A B S resin	1.009	ME	180	2.05	0.20

Please feel free to contact us for any further information.

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