28 COPPER METER CU-5Z

Copper Density Measurement for Copper Sulfate Etching Solution and Plating Solution

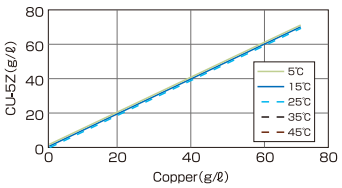
Measurement outline

This Meter indicates Copper Density in the Solution as mol Density (mol/ℓ), Copper Sulfate Density (g/ℓ), and Copper Density (g/ℓ) by calculating the Signals in proportion to Copper Density which comes from Light Absorbance Detector through Converter which is composed of LED of suitable Wavelength for Copper Density Measurement, receiving Optics, Special Optical Window of Chemical-Resistance and Pre-Amplifier.
This Meter is equipped with Reference Light, and Automatically controls the Luminance of LED Light Source influenced by Temperature. The Materials of Liquid Junction are PFA and PVC and Excellent Chemical-Resistant Detector..

Features

- Possible to measure High Density Copper Solution by shifting 3 Modes.
  mol Density (0.000~1.200 mol/ℓ)
  Copper Sulfate Density (0~300 g/ℓ)
  Copper Density (0~76.3 g/ℓ)
- Copper Sensor not influenced by Sulfuric Acid and Hydrogen Peroxide
- Copper Sensor with Reference Light and Automatically controlled LED Light Source

Lineality & Temp. Caracteristic



Specifications

Product Name/Model	Portable Copper Density Meter CU-5Z
Measuring Method	Light Extinction Method
Measuring Range	0.00~1.20 mol/ℓ (mol Density) 0~300g/ℓ (Copper Sulfate Density) 0.0~76.3g/ℓ (Copper Density)
Measuring Unit	①mol/ℓ mol Density ②g/ℓ Copper Sulfate Density ③g/ℓ Copper Density
Resolution	①0.01mol/ℓ mol Density ②1g/ℓ Copper Sulfate Density ③0.1g/ℓ Copper Density
Accuracy	Within ±2%
Calibration	Zero : with Pure Water or distilled Water Span : with Copper standard Solution
Self Diagnosis	Battery Voltage : Battery Mark Detector Error : "S","ERR" blinks Calibration Error : "CAL", "ERR" blinks Scale Over : Max. Value in measuring Range blinks
Sample Water Temperature	5~50℃
Power Supply	Alkaline Battery LR03×3 (DC 4.5V)
Outer Dimensions	Meter : 75(W)×38(H)×180(D)mm Detector : ϕ40×250mm
Detector Model	CUD-61
Cable length	2m Standard
Weight	Meter : Approx. 300g Detector : Approx. 500g (Without cable)
Standard Components	Meter(CU-5Z), Detector(CUD-61 with 2m cable) Transparent Plastic Cover, Carrying Bag, Instruction Manual, Guarantee, Measuring Vessel Strap, Brush, Alkali AAA Batteries(LR03×3)
Optional Accessories	Copper Standard Solution 250ml

Technical Information

Converting Calculation of mol, Copper Sulfate and Copper Density

mol Density (mol/ℓ)	$CuSO_4$ Density (g/ℓ)	Copper Density (g/ℓ)
0.050	12	3.2
0.100	25	6.4
0.200	50	12.7
0.800	200	50.8
1.000	250	63.5
1.200	300	76.3

Molecular weight : copper(II)sulfate pentahydrate=249.69
Copper=63.546

Comparison of each density at 1 mol/ℓ	mol density 1 : Copper Density(g/ℓ) 63.546 : Copper Sulfate Density(g/ℓ) 249.69
How to calculate mol Density	mol Density(mol/ℓ)=Copper Density(g/ℓ)÷63.546 =Copper Sulfate Density(g/ℓ)÷249.69
How to calculate Copper Sulfate Density	Copper Sulfate Density(g/ℓ)=Copper Density(g/ℓ)×3.929 =mol Density×249.69
How to calculate Copper Density	Copper Density(g/ℓ)=Copper Sulfate Density(g/ℓ)÷3.929 =mol Density×63.546