

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

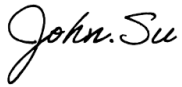
Date of Testing: 2022-10-10 17:46:52  
 Date of Next Testing: 2026-10-09 17:46:52  
 Product Name: **Imidazole**  
 CAS Number: 288-32-4  
 Specifications & Purity: 99.5%,for Fluorimetric Analysis  
 Lot #: I2221393  
 SKU #: **I108705**  
**Analysis:** **142230**  
 Storage Temperature: Desiccated

Parameter	Limit Values	Result
Nickel(Ni)	0-5 (ppm)	3.10 ppm
Potassium(K)	0-50 (ppm)	18.00 ppm
Iron(Fe)	0-5 (ppm)	1.60 ppm
Zinc(Zn)	0-5 (ppm)	3.20 ppm
Purity(GC)	99.5-100 (%)	99.86 %
Calcium(Ca)	0-10 (ppm)	5.10 ppm
Chloride (Cl-)	0-50 (ppm)	22.00 ppm
Sodium(Na)	0-50 (ppm)	12.00 ppm
Cadmium(Cd)	0-5 (ppm)	0.00 ppm
PH	9.5-11	10.50
Ignition Residue (as sulfate)	0-0.05 (%)	0.05 %
Chromium(Cr)	0-5 (ppm)	2.50 ppm
Strontium(Sr)	0-5 (ppm)	2.54 ppm
UV Absorbance 280nm	0-0.1	0.01
Copper(Cu)	0-5 (ppm)	1.10 ppm
UV Absorbance 260nm	0-0.1	0.01
Molybdenum(Mo)	0-5 (ppm)	2.61 ppm
Melting point	86-92 (°C)	91.93000 °C
Magnesium(Mg)	0-5 (ppm)	2.90 ppm
Lithium(Li)	0-5 (ppm)	2.25 ppm
Manganese(Mn)	0-5	3.10
(Pb)Lead	0-5 (ppm)	2.30 ppm
Cobalt(Co)	0-5 (ppm)	2.20 ppm
Water by Karl Fischer	0-0.2 (%)	0.15 %
Sulfate(SO42-)	0-50 (ppm)	10.00 ppm
Appearance (I108705)	White to Off-White Powder	White to Off-White Powder

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Parameter	Limit Values	Result
Fluorescence, $\lambda_{ex}$ 200-600 nm; $\lambda_{em}$ 300-800 nm (corresponds)	Conforms	Conforms
Infrared spectrum	Conforms to Structure	Conforms to Structure
Insoluble matter	pass	Pass
pKa	6.8	6.8
$\lambda$ , 0.1 M in H <sub>2</sub> O	Pass	Pass

A handwritten signature in black ink that reads "John Su".

John Su  
QA & QC Manager