

Certificate of Analysis

Date of Testing: 2022-12-16 16:40:04
 Date of Next Testing: 2023-12-16 16:40:04
 Product Name: **Ammonia solution**
 CAS Number: 1336-21-6
 Specifications & Purity: for HPLC, $\geq 25\%$ in H₂O
 Lot #: L2213330
 SKU #: **A112080**
Analysis: 169023

Parameter	Limit Values	Result
Germanium (Ge)	0-0.01 (ppm)	0.00 ppm
Indium (In)	0-0.01 (ppm)	0.00 ppm
Stannum (Sn)	0-0.01 (ppm)	0.00 ppm
Magnesium (Mg)	0-0.01 (ppm)	0.00 ppm
Lithium (Li)	0-0.01 (ppm)	0.00 ppm
Titanium (Ti)	0-0.01 (ppm)	0.00 ppm
Potassium (K)	0-0.01 (ppm)	0.00 ppm
Gallium (Ga)	0-0.01 (ppm)	0.00 ppm
Zirconium (Zr)	0-0.01 (ppm)	0.00 ppm
Manganese (Mn)	0-0.01 (ppm)	0.00 ppm
Evaporation Residue concentration (as NH ₃)	0-0.001 (%) 25-100 (%)	0.00 % 28.06 %
Copper (Cu)	0-0.01 (ppm)	0.00 ppm
Chromium (Cr)	0-0.01 (ppm)	0.00 ppm
As, Sb (as As)	0-0.01 (ppm)	0.00 ppm
Nickel (Ni)	0-0.01 (ppm)	0.00 ppm
Vanadium (V)	0-0.01 (ppm)	0.00 ppm
Strontium (Sr)	0-0.01 (ppm)	0.00 ppm
Boron (B)	0-0.01 (ppm)	0.00 ppm
Aurum (Au)	0-0.01 (ppm)	0.00 ppm
Chloride (Cl ⁻)	0-0.2 (ppm)	0.06 ppm
Cobalt (Co)	0-0.01 (ppm)	0.00 ppm
Zinc (Zn)	0-0.01 (ppm)	0.00 ppm
Molybdenum (Mo)	0-0.01 (ppm)	0.00 ppm
Silver (Ag)	0-0.01 (ppm)	0.00 ppm
Bismuth (Bi)	0-0.01 (ppm)	0.00 ppm
Barium (Ba)	0-0.01 (ppb)	0.00 ppb

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Parameter	Limit Values	Result
Iron(Fe)	0-0.01 (ppm)	0.00 ppm
Platinum(Pt)	0-0.01 (ppm)	0.00 ppm
Calcium(Ca)	0-0.5 (ppm)	0.00 ppm
Phosphate(PO4)	0-0.2 (ppm)	0.10 ppm
Sulfate(SO42-)	0-1 (ppm)	0.03 ppm
Cadmium(Cd)	0-0.01 (ppm)	0.00 ppm
Sodium(Na)	0-0.01 (ppm)	0.00 ppm
(Pb)Lead	0-0.01 (ppm)	0.00 ppm
Beryllium(Be)	0-0.01 (ppm)	0.00 ppm
Appearance (A112080)	Colorless Liquid	Colorless liquid
Infrared spectrum	Conforms to Structure	Conforms to Structure

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

John Su
QA & QC Manager