

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

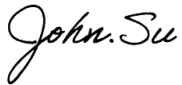
Date of Testing: 2022-10-27 14:46:40  
 Date of Next Testing: 2023-10-27 14:46:40  
 Product Name: **Ammonia solution**  
 CAS Number: 1336-21-6  
 Specifications & Purity: for LC-MS, ≥25% in H<sub>2</sub>O  
 Lot #: J2225075  
 SKU #: **A112084**  
**Analysis: 149115**

| Parameter                               | Limit Values  | Result   |
|-----------------------------------------|---------------|----------|
| Sodium(Na)                              | 0-0.01 (ppm)  | 0.00 ppm |
| Beryllium(Be)                           | 0-0.01 (ppm)  | 0.01 ppm |
| (Pb)Lead                                | 0-0.01 (ppm)  | 0.01 ppm |
| Sulfate(SO <sub>4</sub> <sup>2-</sup> ) | 0-1 (ppm)     | 0.20 ppm |
| Potassium(K)                            | 0-0.01 (ppm)  | 0.01 ppm |
| Platinum(Pt)                            | 0-0.01 (ppm)  | 0.00 ppm |
| Iron(Fe)                                | 0-0.01 (ppm)  | 0.00 ppm |
| Gallium(Ga)                             | 0-0.01 (ppm)  | 0.01 ppm |
| Barium(Ba)                              | 0-0.01 (ppm)  | 0.00 ppm |
| Cobalt(Co)                              | 0-0.01 (ppm)  | 0.01 ppm |
| Vanadium(V)                             | 0-0.01 (ppm)  | 0.01 ppm |
| Nickel(Ni)                              | 0-0.01 (ppm)  | 0.01 ppm |
| Boron(B)                                | 0-0.01 (ppm)  | 0.00 ppm |
| Evaporation Residue                     | 0-0.001 (%)   | 0.00 %   |
| Cadmium(Cd)                             | 0-0.01 (ppm)  | 0.01 ppm |
| concentration (as NH <sub>3</sub> )     | 24.5-25.5 (%) | 25.00 %  |
| Chromium(Cr)                            | 0-0.01 (ppm)  | 0.01 ppm |
| Manganese(Mn)                           | 0-0.01 (ppm)  | 0.01 ppm |
| Phosphate(PO <sub>4</sub> )             | 0-0.2 (ppm)   | 0.13 ppm |
| Bismuth(Bi)                             | 0-0.01 (ppm)  | 0.01 ppm |
| Calcium(Ca)                             | 0-0.5 (ppm)   | 0.00 ppm |
| Zirconium(Zr)                           | 0-0.01 (ppm)  | 0.01 ppm |
| Titanium(Ti)                            | 0-0.01 (ppm)  | 0.01 ppm |
| Molybdenum(Mo)                          | 0-0.01 (ppm)  | 0.01 ppm |
| Stannum(Sn)                             | 0-0.01 (ppm)  | 0.01 ppm |
| Magnesium(Mg)                           | 0-0.01 (ppm)  | 0.00 ppm |
| Lithium(Li)                             | 0-0.01 (ppm)  | 0.01 ppm |

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

| Parameter            | Limit Values          | Result                |
|----------------------|-----------------------|-----------------------|
| Zinc(Zn)             | 0-0.01 (ppm)          | 0.00 ppm              |
| Germanium (Ge)       | 0-0.01 (ppm)          | 0.01 ppm              |
| As, Sb (as As):      | 0-0.01 (ppm)          | 0.01 ppm              |
| Indium (In)          | 0-0.01 (ppm)          | 0.00 ppm              |
| Strontium(Sr)        | 0-0.01 (ppm)          | 0.01 ppm              |
| Copper(Cu)           | 0-0.01 (ppm)          | 0.01 ppm              |
| Silver (Ag)          | 0-0.01 (ppm)          | 0.01 ppm              |
| Aurum(Au)            | 0-0.01 (ppm)          | 0.00 ppm              |
| Chloride (Cl-)       | 0-0.2 (ppm)           | 0.10 ppm              |
| Appearance (A112084) | 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