

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2023-12-13 11:33:49  
Date of Next Testing: 2024-12-12 11:33:49  
Product Name: **Ammonia solution**  
CAS Number: 1336-21-6  
Specifications & Purity: for HPLC,  $\geq 25\%$  in H<sub>2</sub>O  
Lot #: L2308143  
SKU #: **A112080**  
**Analysis: 303991**

| 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<br>concentration (as NH <sub>3</sub> ) | 0-0.001 (%)<br>25-100 (%) | 0.00 %<br>28.97 % |
| 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          |
| Iron(Fe)   | 0-0.01 (ppm)              | 0.00 ppm          |

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|----------------------|-----------------------|-----------------------|
| Platinum(Pt)         | 0-0.01 (ppm)          | 0.00 ppm              |
| Calcium(Ca)          | 0-0.5 (ppm)           | 0.00 ppm              |
| Sulfate(SO42-)       | 0-1 (ppm)             | 0.10 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