

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2022-03-24 17:19:25
 Date of Next Testing: 2023-03-24 17:19:25
 Product Name: **Ammonia solution**
 CAS Number: 1336-21-6
 Specifications & Purity: for HPLC, $\geq 25\%$ in H₂O
 Lot #: C2219186
 SKU #: **A112080**
 Analysis: **055408**

| 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) | 0.01 ppm |
| Magnesium (Mg) | 0-0.01 (ppm) | 0.01 ppm |
| Lithium (Li) | 0-0.01 (ppm) | 0.00 ppm |
| Titanium (Ti) | 0-0.01 (ppm) | 0.01 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) | 0.01 ppm |
| Manganese (Mn) | 0-0.01 (ppm) | 0.00 ppm |
| Evaporation Residue concentration (as NH ₃) | 0-0.001 (%) 25-100 (%) | 0.00 % 29.00 % |
| 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) | 0.01 ppm |
| Vanadium (V) | 0-0.01 (ppm) | 0.01 ppm |
| Strontium (Sr) | 0-0.01 (ppm) | 0.01 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) | 0.10 ppm |
| Cobalt (Co) | 0-0.01 (ppm) | 0.00 ppm |
| Zinc (Zn) | 0-0.01 (ppm) | 0.01 ppm |
| Molybdenum (Mo) | 0-0.01 (ppm) | 0.01 ppm |
| Silver (Ag) | 0-0.01 (ppm) | 0.00 ppm |
| Bismuth (Bi) | 0-0.01 (ppm) | 0.01 ppm |
| Barium (Ba) | 0-0.01 (ppb) | 0.01 ppb |

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|----------------------|-----------------------|-----------------------|
| Iron(Fe) | 0-0.01 (ppm) | 0.00 ppm |
| Platinum(Pt) | 0-0.01 (ppm) | 0.00 ppm |
| Calcium(Ca) | 0-0.5 (ppm) | 0.05 ppm |
| Phosphate(PO4) | 0-0.2 (ppm) | 0.10 ppm |
| Sulfate(SO42-) | 0-1 (ppm) | 0.18 ppm |
| Cadmium(Cd) | 0-0.01 (ppm) | 0.01 ppm |
| Sodium(Na) | 0-0.01 (ppm) | 0.01 ppm |
| (Pb)Lead | 0-0.01 (ppm) | 0.00 ppm |
| Beryllium(Be) | 0-0.01 (ppm) | 0.01 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