

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

Certificate of Analysis

Date of Testing: 2023-07-01 14:52:34
 Date of Next Testing: 2027-06-30 14:52:34
 Product Name: **Tetramethylammonium hydroxide solution**
 CAS Number: 75-59-2(water)
 Specifications & Purity: Ultra pure,25% in H2O,for trace analysis
 Lot #: F23271188
 SKU #: **T131029**
Analysis: **217328**
 Storage Temperature: Argon charged

Parameter	Limit Values	Result
Thallium (ICP)	0-0.5 (ppb)	0.00 ppb
Osmium (ICP)	0-0.5 (ppb)	0.00 ppb
Iridium (ICP)	0-1 (ppb)	0.00 ppb
Vanadium (ICP)	0-1 (ppb)	0.00 ppb
Platinum(Pt)	0-0.5 (ppb)	0.00 ppb
Ruthenium (ICP)	0-0.5 (ppb)	0.00 ppb
Lead (ICP)	0-5 (ppb)	0.00 ppb
Tin(Sn)	0-0.5 (ppb)	0.00 ppb
Cerium(ICP)	0-0.5 (ppb)	0.00 ppb
Iron(ICP)	0-5 (ppb)	0.00 ppb
Rhodium(ICP)	0-0.5 (ppb)	0.00 ppb
Refractive index n ₂₀ /D	1.381-1.383	1.38
Nickel(ICP)	0-1 (ppb)	0.00 ppb
Cadmium(Cd)	0-0.5 (ppb)	0.00 ppb
Palladium (ICP)	0-0.5 (ppb)	0.00 ppb
Ion chromatography (bromide)	0-50 (ppb)	0.00 ppb
Strontium(Sr)	0-0.5 (ppb)	0.00 ppb
Germanium (Ge)	0-0.5 (ppb)	0.00 ppb
Molybdenum (ICP)	0-0.5 (ppb)	0.00 ppb
Silver (Ag)	0-0.5 (ppb)	0.00 ppb
Concentration(Titration by 1M HCL)	24-26 (%)	24.82 %
Cobalt(ICP)	0-0.5 (ppb)	0.00 ppb
Rubidium (ICP)	0-0.5 (ppb)	0.00 ppb
Density (20°C)	1.01-1.03	1.02
Indium (ICP)	0-0.5 (ppb)	0.00 ppb
Antimony (ICP)	0-0.5 (ppb)	0.00 ppb

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Parameter	Limit Values	Result
Chromium (ICP)	0-1 (ppb)	0.00 ppb
Various guarantee label trace (ICP-MS)	0-10 (ppb)	0.00 ppb
total-iodine		
Copper(ICP)	0-0.5 (ppb)	0.00 ppb
ion chromatography (fluoride)	0-50 (ppb)	0.00 ppb
Calcium(Ca)	0-10 (ppb)	0.00 ppb
Manganese(ICP)	0-0.5 (ppb)	0.00 ppb
Gallium(Ga)	0-0.5 (ppb)	0.00 ppb
Zirconium(Zr)	0-1 (ppb)	0.00 ppb
Lithium (ICP)	0-0.5 (ppb)	0.00 ppb
Zinc(ICP)	0-1 (ppb)	0.00 ppb
ion chromatography (chloride)	0-50 (ppb)	0.00 ppb
Mercury(ICP)	0-0.5 (ppb)	0.00 ppb
Dimethyl Sulfoxide(NMR)	0-5 (ppb)	0.00 ppb
Selenium (ICP)	0-1 (ppb)	0.00 ppb
ion chromatography (nitrate)	0-250 (ppb)	0.00 ppb
Gold(Au)	0-1 (ppb)	0.00 ppb
Bismuth (ICP)	0-0.5 (ppb)	0.00 ppb
Barium (ICP)	0-0.5 (ppb)	0.00 ppb
Beryllium (ICP)	0-0.5 (ppb)	0.00 ppb
ion chromatography (sulfate)	0-500 (ppb)	0.00 ppb
ion chromatography (phosphate)	0-50 (ppb)	0.00 ppb
Magnesium(Mg)	0-0.5 (ppb)	0.00 ppb
Titanium(Ti)	0-1 (ppb)	0.00 ppb
Sodium(ICP)	0-10 (ppb)	0.00 ppb
Potassium(ICP)	0-10 (ppb)	0.00 ppb
Arsenic (ICP)	0-0.5 (ppb)	0.39 ppb
Appearance (T131029)	Colorless to light yellow liquid or viscous liquid	Colorless to light yellow liquid or viscous liquid
Proton NMR spectrum	Conforms to Structure	Conforms to Structure
Metal trace analysis by ICP-MS	corresponds to requirements	CORRESPONDS TO REQUIREMENTS



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A handwritten signature in black ink that reads "John Su". The signature is written in a cursive, flowing style.

John Su
QA & QC Manager