

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2022-06-23 14:14:38  
 Date of Next Testing: 2026-06-22 14:14:38  
 Product Name: **CHES**  
 CAS Number: 103-47-9  
 Specifications & Purity:  $\geq 99.5\%$ (T)  
 Lot #: F2216283  
 SKU #: **C110897**  
**Analysis:** **094149**  
 Storage Temperature: Protected from light, Argon charged

Parameter	Limit Values	Result
Manganese(Mn)	0-5 (ppm)	3.10 ppm
(As)Arsenic	0-0.1 (ppm)	0.05 ppm
Barium(Ba)	0-5 (ppm)	2.90 ppm
Magnesium(Mg)	0-5 (ppm)	2.60 ppm
Lithium(Li)	0-5 (ppm)	3.20 ppm
UV Absorbance 280nm	0-0.05	0.03
Cobalt(Co)	0-5 (ppm)	2.87 ppm
Aluminum(Al)	0-5 (ppm)	2.91 ppm
UV Absorbance 260nm	0-0.08	0.03
Strontium(Sr)	0-5 (ppm)	2.77 ppm
Molybdenum(Mo)	0-5 (ppm)	3.00 ppm
Ignition Residue	0-0.05 (%)	0.03 %
Bismuth(Bi)	0-5 (ppm)	2.90 ppm
Calcium(Ca)	0-10 (ppm)	5.10 ppm
Nickel(Ni)	0-5 (ppm)	3.30 ppm
Heavy metal (as Pb)	0-5 (ppm)	1.04 ppm
Potassium(K)	0-50 (ppm)	24.70 ppm
Iron(Fe)	0-5 (ppm)	3.00 ppm
Zinc(Zn)	0-5 (ppm)	3.20 ppm
Cadmium(Cd)	0-5 (ppm)	2.98 ppm
Sodium(Na)	0-50 (ppm)	26.80 ppm
Sulfate(SO <sub>4</sub> <sup>2-</sup> )	0-500 (ppm)	276.00 ppm
Chloride (Cl <sup>-</sup> )	0-50 (ppm)	25.05 ppm
Chromium(Cr)	0-5 (ppm)	3.00 ppm
Copper(Cu)	0-5 (ppm)	2.60 ppm
PH(25 °C, 0.5 M in Water)	3-5	4.98

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Parameter	Limit Values	Result
Purity (Titration by NaOH)(anhydrous)	99.5-100.5 (%)	99.97 %
useful PH range	8.6-10	9.01
loss on drying, 110 °C	0-0.5 (%)	0.50 %
Appearance (C110897)	white crystalline powder	white crystalline powder
Infrared spectrum	Conforms to Structure	Conforms to Structure
Insoluble matter	pass	Pass
pKa	6.8	6.8
Solubility in H <sub>2</sub> O , soluble , 1M , 20°C, clear, colorless	pass	Pass
λ,0.5 M in H <sub>2</sub> O	Pass	Pass

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

John Su  
QA & QC Manager