

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

Date of Testing: 2022-11-21 17:20:09  
 Date of Next Testing: 2026-11-20 17:20:09  
 Product Name: **CHES**  
 CAS Number: 103-47-9  
 Specifications & Purity:  $\geq 99.5\%$ (T)  
 Lot #: K2216366  
 SKU #: **C110897**  
**Analysis:** **148790**  
 Storage Temperature: Protected from light, Argon charged

Parameter	Limit Values	Result
Manganese(Mn)	0-5 (ppm)	1.36 ppm
(As)Arsenic	0-0.1 (ppm)	0.03 ppm
Barium(Ba)	0-5 (ppm)	0.15 ppm
Magnesium(Mg)	0-5 (ppm)	0.63 ppm
Lithium(Li)	0-5 (ppm)	0.56 ppm
UV Absorbance 280nm	0-0.05	0.00
Cobalt(Co)	0-5 (ppm)	1.05 ppm
Aluminum(Al)	0-5 (ppm)	1.14 ppm
UV Absorbance 260nm	0-0.08	0.00
Strontium(Sr)	0-5 (ppm)	0.69 ppm
useful PH range	8.6-10	8.90
Molybdenum(Mo)	0-5 (ppm)	1.12 ppm
Ignition Residue	0-0.05 (%)	0.02 %
loss on drying, 110 °C	0-0.5 (%)	0.00 %
Bismuth(Bi)	0-5 (ppm)	1.06 ppm
Calcium(Ca)	0-10 (ppm)	2.35 ppm
Nickel(Ni)	0-5 (ppm)	0.74 ppm
Potassium(K)	0-50 (ppm)	10.63 ppm
Iron(Fe)	0-5 (ppm)	1.55 ppm
Zinc(Zn)	0-5 (ppm)	1.32 ppm
Cadmium(Cd)	0-5 (ppm)	1.03 ppm
Sodium(Na)	0-50 (ppm)	12.63 ppm
Sulfate(SO42-)	0-500 (ppm)	23.62 ppm
Chloride (Cl-)	0-50 (ppm)	8.65 ppm
Chromium(Cr)	0-5 (ppm)	1.32 ppm
Copper(Cu)	0-5 (ppm)	0.47 ppm

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Parameter	Limit Values	Result
Heavy metal (as Pb)	0-5 (ppm)	0.94 ppm
Purity (Titration by NaOH)(anhydrous)	99.5-100.5 (%)	99.51 %
PH(25 °C, 0.5 M in Water)	3-5	4.98
Appearance (C110897)	white crystalline powder	white crystalline powder
Insoluble matter	pass	Pass
pKa	6.8	6.8
Solubility in H <sub>2</sub> O , soluble , 1M , 20°C, clear, colorless λ,0.5 M in H <sub>2</sub> O	pass	Pass
Infrared spectrum	Pass	Pass
	Conforms to Structure	Conforms to Structure

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

John Su  
QA & QC Manager