

## Certificate of Analysis

Date of Testing: 2022-05-16 19:27:31  
Date of Next Testing: 2024-05-05 19:27:31  
Product Name: **Tris(2-carboxyethyl)phosphine hydrochloride**  
CAS Number: 51805-45-9  
Specifications & Purity: 98%  
Lot #: E2209216  
SKU #: **T107252**  
**Analysis: 090898**  
Storage Temperature: Store at 2-8°C, Argon charged

Parameter	Limit Values	Result
Carbon by Elemental Analysis(anhydrous)	37-40.2 (%)	37.58 %
Purity(HPLC)	98-100 (%)	99.37900 %
Water by Karl Fischer	0-6 (%)	4.21 %
Appearance (T107252)	White Powder or Crystals	White Powder or Crystals
Proton NMR spectrum	Conforms to Structure	Conforms to Structure
Solubility in H <sub>2</sub> O , Colorless, Clear to Very Slightly Hazy, 50mg/ml(5%)	pass	Pass



John Su  
QA & QC Manager