

## Certificate of Analysis

Date of Testing: 2022-07-18 10:21:31  
Date of Next Testing: 2024-07-07 10:21:31  
Product Name: **Tris(2-carboxyethyl)phosphine hydrochloride**  
CAS Number: 51805-45-9  
Specifications & Purity: 98%  
Lot #: G2214350  
SKU #: **T107252**  
**Analysis: 092700**  
Storage Temperature: Store at 2-8°C, Argon charged

Parameter	Limit Values	Result
Carbon by Elemental Analysis(anhydrous)	37-40.2 (%)	37.70%
Water by Karl Fischer	0-6 (%)	3.23%
Purity(HPLC)	98-100 (%)	98.01000%
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