## Chem-Impex International, Inc.

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## Certificate of Analysis

Catalogue Number 23004

935 Dillon Drive

**Lot Number** 001331-20170902

Product Tris-(carboxyethyl)phosphine hydrochloride

TCEP•HCl

**CAS Number** 51805-45-9 **Molecular Formula** C<sub>9</sub>H<sub>15</sub>O<sub>6</sub>P•HCl

**Molecular Weight** 286.6

**Appearance** White crystal

**Solubility** Clear and colorless (1.1 M in Water)

**Melting Point** 180.7 - 182.5 °C

<sup>1</sup>H NMR Conforms to structure

Assay by titration 99.6%

**Application** Reagent used in the reduction of disulfide bonds.

Storage Store at 0-8 °C under Nitrogen

**Additional Information**31P NMR (D<sub>2</sub>O) = No peak at 15 ppm

<sup>1</sup>H NMR (DMSO): < 10% NH<sub>4</sub>Cl

**Remarks** See material safety data sheet for additional information

For laboratory use only

The foregoing is a copy of the Certificate of Analysis as provided by our supplier

Bala Kumar

**Quality Control Manager**