## Chem-Impex International, Inc.

Tel: (630) 766-2112 Fax: (630) 766-2218

E-mail: sales@chemimpex.com Web site: www.chemimpex.com

**Manufacturing site:** 

Shipping and Correspondence:

935 Dillon Drive

Wood Dale, IL 60191

Wood Dale, IL 60191

## Certificate of Analysis

Catalogue Number 00412

**Lot Number** 000424-220816-16739

Product L-Glutamic acid γ-(p-nitroanilide)

 $L\text{-}Glu(PNA)\text{-}OH \bullet HCl$ 

**CAS Number** 67953-08-6

**Molecular Formula**  $C_{11}H_{13}N_3O_5 \bullet HCl$ 

Molecular Weight 303.7

**Appearance** Light yellowish powder

**Solubility** Clear solution (0.3 g in 2 mL DMF)

**Melting Point** 191.7 - 192.3 °C

Water Content (Karl 0.75%

Fisher)

**Optical Rotation** 

 $[a]_D^{20} = 33.6$  ° (C=1 in 1N HCl)

Infrared Spectrum Conforms to structure
Analysis by Mass Spectra Conforms to standard

**Loss on Drying** 0.44% (90 °C at 2 h) **1H NMR** Conforms to structure

Purity by HPLC 99.25%

**Storage** Store at  $\leq$  -4 °C

**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**