

# Chem-Impex International, Inc.

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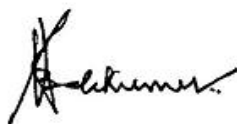
Wood Dale, IL 60191

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## Certificate of Analysis

|                           |  |
|---------------------------|--|
| <b>Catalogue Number</b>   | 23196  |
| <b>Product</b>            | <b>Z-L-β-Glutamic acid γ-tert-butyl ester</b>  |
| <b>Lot Number</b>         | 003259-2023-02-21  |
|                           | Z-β-Glu(OtBu)-OH   |
| <b>CAS Number</b>         | 118247-88-4  |
| <b>Molecular Formula</b>  | C <sub>17</sub> H <sub>23</sub> NO <sub>6</sub>                                      |
| <b>Molecular Weight</b>   | 337.7  |
| <hr/>                     |  |
| <b>Appearance</b>         | Syrupy oil   |
| <b>Optical Rotation</b>   | [α] <sub>D</sub> <sup>25</sup> = -0.18 ± 2 ° (C=0.4 in MeOH)                         |
| <b><sup>13</sup>C NMR</b> | Conforms to structure  |
| <b><sup>1</sup>H NMR</b>  | Conforms to structure  |
| <b>Purity by HPLC</b>     | 98.23%   |
| <b>Purity</b>             | > 98% (NMR)  |
| <b>Storage</b>            | Store at < 4 °C  |
| <b>Remarks</b>            | See material safety data sheet for additional information<br>For laboratory use only |

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



**Bala Kumar**  
**Quality Control Manager**