

# Chem-Impex International, Inc.

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## Certificate of Analysis

<b>Catalogue Number</b>	02479
<b>Lot Number</b>	000424-121116-36605
<b>Product</b>	<b>Fmoc-D-glutamic acid <math>\gamma</math>-tert-butyl ester</b>  Fmoc-D-Glu(OtBu)-OH  Fmoc-D-glutamic acid 5-tert-butyl ester
<b>CAS Number</b>	104091-08-9
<b>Molecular Formula</b>	C <sub>24</sub> H <sub>27</sub> NO <sub>6</sub>
<b>Molecular Weight</b>	425.5

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<b>Appearance</b>	White powder
<b>Solubility</b>	Clear solution (0.3g in 2 mL DMF)
<b>Melting Point</b>	87.2-88.9 °C
<b>Water Content (Karl Fisher)</b>	4.01%
<b>Optical Rotation</b>	[ $\alpha$ ] <sub>D</sub> <sup>20</sup> = +9.1° (C = 1 in MeOH)
<b>Infrared Spectrum</b>	Conforms to structure
<b>Analysis by Mass Spectra</b>	Conforms to structure
<b>Loss on Drying</b>	0.16% (40 °C, 2h)
<b><sup>1</sup>H NMR</b>	Conforms to structure
<b>L-Enantiomer</b>	0.1326%
<b>Purity by HPLC</b>	99.12%
<b>Purity by TLC</b>	98%
<b>Chiral Purity</b>	99.86% (ee)
<b>Storage</b>	Store at 0-8 °C

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**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**