

# Chem-Impex International, Inc.

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Tel: (630) 766-2112

E-mail: sales@chemimpex.com

Shipping and Correspondence:

935 Dillon Drive

Wood Dale, IL 60191

Fax: (630) 766-2218

Web site: www.chemimpex.com

Manufacturing site:

825 Dillon Drive

Wood Dale, IL 60191

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## Certificate of Analysis

<b>Catalogue Number</b>	15117
<b>Lot Number</b>	000424-201120-23097
<b>Product</b>	<b>Fmoc-D-Ala(<math>\beta</math>-cyclobutyl)-OH</b> Fmoc- $\beta$ -cyclobutyl-D-Ala-OH
<b>CAS Number</b>	478183-63-0
<b>Molecular Formula</b>	C <sub>22</sub> H <sub>23</sub> NO <sub>4</sub>
<b>Molecular Weight</b>	365.43

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<b>Appearance</b>	White powder
<b>Solubility</b>	Clear solution (0.3 g in 2 mL DMF)
<b>Melting Point</b>	147.9 - 150.8 °C
<b>Water Content (Karl Fisher)</b>	0.08%
<b>Optical Rotation</b>	[ $\alpha$ ] <sub>D</sub> <sup>20</sup> = 17.2 ° (C=1 in DMF)
<b>Infrared Spectrum</b>	Conforms to structure
<b>Analysis by Mass Spectra</b>	Conforms to standard
<b>Loss on Drying</b>	0.74% (70 °C, 2h)
<b><sup>1</sup>H NMR</b>	Conforms to structure
<b>Chiral HPLC</b>	99.98% (ee)
<b>L-Enantiomer</b>	0.0136%
<b>Purity by HPLC</b>	98.26%
<b>Storage</b>	Store at 0 - 8 °C
<b>Remarks</b>	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