

ALADDIN SCIENTIFIC CORPORATION

14078 Meridian Parkway, Riverside, CA. 92518

## Certificate of Analysis

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| Date of Testing:         | 2024-04-27 16:53:40                                  |
| Date of Next Testing:    | 2028-04-26 16:53:40                                  |
| Product Name:            | <b>Ethyl N-(tert-Butoxycarbonyl)-D-pyroglutamate</b> |
| CAS Number:              | 144978-35-8                                          |
| Specifications & Purity: | ≥95%(HPLC)                                           |
| Lot #:                   | D2418494                                             |
| SKU #                    | <b>E156111</b>                                       |
| Version                  | <b>0</b>                                             |
| Analysis #:              | <b>338089</b>                                        |
| Storage Temperature:     | Room temperature                                     |

| Parameter                                           | Limit Values                            | Result                                  |
|-----------------------------------------------------|-----------------------------------------|-----------------------------------------|
| Purity(HPLC)                                        | 95-100 (%)                              | 99.68200 %                              |
| Specific Rotation [α] <sub>20</sub> /D(c=1 in MeOH) | 44-47 (°)                               | 44.16300 °                              |
| Melting point                                       | 54-58 (°C)                              | 56.02000 °C                             |
| Proton NMR spectrum                                 | Conforms to Structure                   | Conforms to Structure                   |
| Appearance (E156111)                                | White to Almost white powder to crystal | White to Almost white powder to crystal |



John Su  
QA & QC Manager