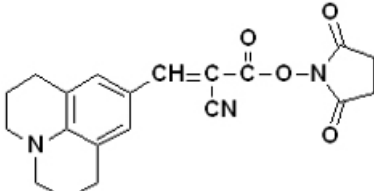


| <b>Certificate of Analysis</b><br>(C of A) |   |                 |   |   |             |
|--|---|-----------------|---|---|-------------|
| <b>Name:</b>                               | <b>CCVJ, SE</b><br>9-(2-Carboxy-2-cyanovinyl)julolidine N-succinimidyl Ester        |                 |   |   |             |
| <b>Catalog Number:</b>                     | 6563  |                 | <b>Lot:</b>                                     | 51738   |             |
| <b>CAS Number:</b>                         | 21189-93-4  |                 | <b>Formula:</b>                                 | C <sub>20</sub> H <sub>19</sub> N <sub>3</sub> O <sub>4</sub> |             |
| <b>Molecular Weight:</b>                   | 365.38 (g/mol)  |                 |   |   |             |
|  |   |                 |   |   |             |
|  | <b>Observed</b>   |                 | <b>Standard</b>                                 |   |             |
| <b>HPLC Purity:</b>                        | 92% at 254 nm   |                 | ≥ 90% at 254 nm                                 |   |             |
| <b>Absorption (Methanol)</b>               |   |                 |   |   |             |
| <b>Wavelength (λ<sub>max</sub>):</b>       | 472 nm  |                 | 472 ± 3 nm                                      |   |             |
| <b>Extinction:</b>                         | 77,500 cm <sup>-1</sup> M <sup>-1</sup>   |                 | 75,000 ± 5,000 cm <sup>-1</sup> M <sup>-1</sup> |   |             |
| <b>TLC Purity:</b>                         | > 99%   |                 | ≥ 90%   |   |             |
| <b>TLC System:</b>                         | 2:1 Ethyl acetate / Hexane  |                 |   |   |             |
| <b>Storage:</b>                            | Freeze: Store at -5 to -30°C (F), Protect from moisture (D), Protect from light (L) |                 |   |   |             |
| <b>Production Lot:</b>                     | 16232   | <b>Release:</b> | 16-Aug-2019                                     | <b>Expiration:</b>  | 16-Aug-2024 |
| <b>Structure:</b>                          |  |                 |   |   |             |

This data reflects the accuracy of the analysis of the subject lot  
 For research use only. Not for human use. No animal source.  
 This material is chemically synthesized and manufactured in the USA

**Approved by:** Dianna M Wineinger  
 Analytical Services Manager

**Date:** 16-Aug-2019

**Signature:** 