**Product number:** K9-4179  
**Product name:** SeTau-680-NHS

### General Data

**Molecular Mass:** 2011.73  
1624.00 (protonated form)

**Solubility:** Water, Alcohol, DMF, DMSO

**Insoluble:** Chloroform

**Storage:** Store in absence of light, desiccate and refrigerate

### Description

- Extremely bright, water-soluble, amine-reactive label containing one NHS-ester group. The ideal label for proteins and other amine-modified biomolecules including oligonucleotides.

### Advantages

- Perfectly suited for excitation with 635, 640, and 650-nm diode lasers
- Low quenching tendency at high dye-to-protein ratios compared to other labels e.g. Cy5.5™
- Considerably higher photostability compared to fluorescein or other cyanine dyes (Cy5 or Cy5.5 dyes)
- High chemical stability against oxidation with peroxides or other oxygen species
- Longer fluorescence lifetime compared to Cy5.5
- Extremely bright label: most sensitive organic fluorescent label for proteins currently on the market for the 647-nm Kr-ion and 670 laser lines

### Spectral Data

**Solvent System:** phosphate buffer pH 7.4

<table>
<thead>
<tr>
<th>Sample</th>
<th>Dye-to-protein Ratio</th>
<th>Absorption max. [nm]</th>
<th>Extinction Coefficient [M⁻¹·cm⁻¹]</th>
<th>Fluorescence max. [nm]</th>
<th>Quantum Yield¹ [%]</th>
<th>Fluorescence Lifetime at 25 ºC [ns]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free dye</td>
<td>—</td>
<td>683</td>
<td>295,000</td>
<td>705</td>
<td>58</td>
<td>2.86</td>
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<tr>
<td>IgG conjugate 4</td>
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<td>682</td>
<td></td>
<td>703</td>
<td>25</td>
<td>2.76</td>
</tr>
</tbody>
</table>

¹ Cy5.5 in phosphate buffer pH 7.4 (QY = 23% [1]) was used as the reference. λ_{Ex} = 660 nm.

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Absorption and emission spectrum of SeTau-680-NHS in phosphate buffer (pH 7.4)

Absorption and emission spectrum of a SeTau-680 — IgG conjugate in phosphate buffer (pH 7.4, Dye-to-protein ratio 1.0)

Quantum yield vs. dye-to-protein ratio of SeTau-680 — IgG conjugates in phosphate buffer (pH 7.4) as compared to Cy5.5 — IgG conjugates

Total brightness (QY × ε × D/P) vs. dye-to-protein ratio (D/P) of SeTau-680 — IgG conjugates in phosphate buffer (pH 7.4)

Mean fluorescence lifetime vs. dye-to-protein ratio of SeTau-680 — IgG conjugates in phosphate buffer (pH 7.4)