

Product number: K7-548

Product name: SeTau-405-Maleimide

General Data

- Molecular Mass:** 574.03
- Solubility:** water, alcohol, DMF, DMSO
- Insoluble:** acetone, chloroform, toluene
- Storage:** Store in absence of light, desiccated and refrigerate

Description

- Hydrophilic, thiol-reactive long-lifetime label containing one maleimide group, with one positive charge and chloride as the counter-ion.

Applications

- Covalent labeling of proteins, thiol-modified DNA, thiol-modified oligonucleotides and lipids.
- Fluorescence lifetime assays.
- Fluorescence polarization-based assays of high molecular weight antigens.

Advantages

- Highly fluorescent label for proteins and oligos.
- High quantum yield (Q.Y.) ~ 51 % (water).
- Long fluorescence lifetime of 9 ns in water.
- Perfectly suited for excitation with the 380-nm and 404-nm diode lasers .
- Large Stokes' shift of over 100 nm.
- High fundamental polarization $P_0 = 475$ mP.
- Highly soluble in aqueous buffer (500 mg/L at 20°C).

Spectral Data

Sample	Solvent System	Absorption max. [nm]	Extinction Coefficient [$M^{-1}cm^{-1}$]	Fluorescence ¹ max. [nm]	Q.Y. ¹ [%]	Luminescence Lifetime at 25 °C [ns]
Free dye	ethanol	391	15,000	498	32	8.5 ²
Free dye	water	405	13,800	518	51	9.0 ³ , 9.1 ⁴

¹ Excitation at 400 nm

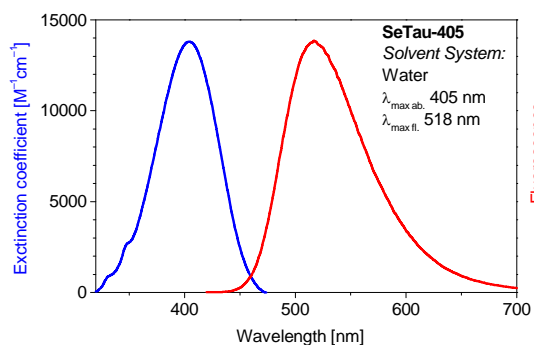
² **K7-537** (Free acid) vs. Dimethyl-POPOP in ethanol ($\tau = 1.45$ [http://iss.com/resources/reference/data_tables/FL_LifetimeStandards.html]), ISS Chronos FD, $\lambda_{ex.} = 370$ nm LED, ethanol, $\tau = 8.53 \pm 0.01$ ns, $\chi^2 = 1.53$.

³ **K7-537** (Free acid) vs. Ludox, ISS Chronos BH, $\lambda_{ex.} = 408$ nm LED, water, $\tau = 9.04 \pm 0.01$ ns, $\chi^2 = 1.08$.

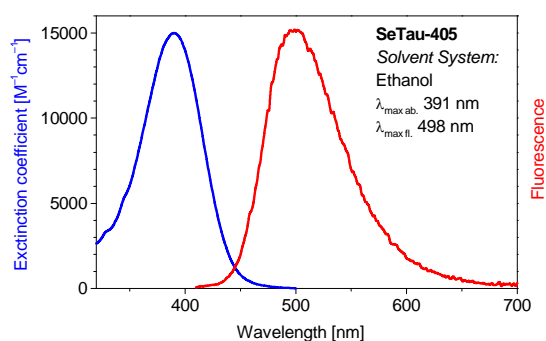
⁴ **K7-537** (Free acid) vs. Ludox, ISS Chronos BH, $\lambda_{ex.} = 370$ nm LED, water, $\tau = 9.09 \pm 0.01$ ns, $\chi^2 = 1.10$.

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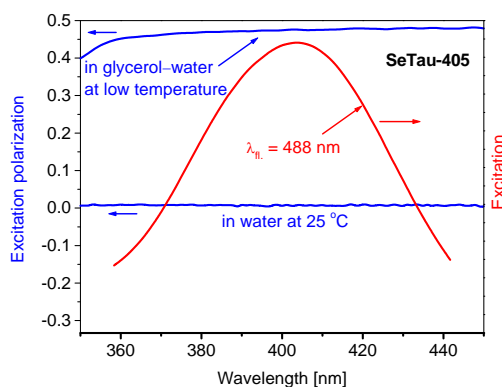
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Absorption and emission spectra of **SeTau-405** in water



Absorption and emission spectra of **SeTau-405** in ethanol



Excitation polarization spectra at low temperature in glycerol—water and at 25 °C in water and excitation spectrum of **SeTau-405** in water at 25 °C.
Fundamental polarization $P_0 = 475 \text{ mP}$ when completely immobilized