

General Data

- Molecular Mass:** 534.01
- Solubility:** water, alcohol, DMF, DMSO
- Insoluble:** acetone, chloroform, toluene
- Storage:** Store in absence of light, desiccated and refrigerate

Description

- Hydrophilic, alkyne-reactive, long-lifetime reagent for click chemistry containing one azide function. Azides react with C≡C triple bonds in either a Cu(I)-catalyzed or Cu-free 1,3-dipolar cycloaddition reaction to triazoles. The dye contains a single positive charge and chloride as the counter-ion.

Applications

- Click Chemistry reagent.
- 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.) ~ 80 % (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 : > 100 nm.
- High fundamental polarization $P_0 = 475$ mP.
- Highly soluble in aqueous buffer (500 mg/L at 20 °C)

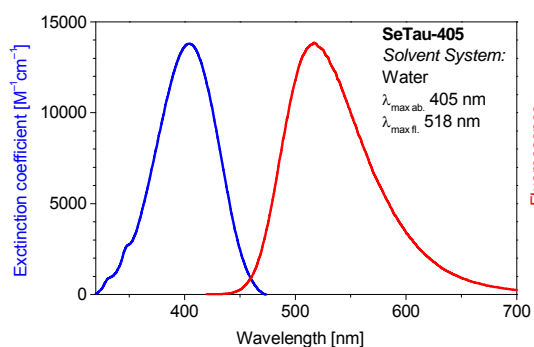
Spectral Data

Solvent System	Absorption max. [nm]	Extinction Coefficient [$M^{-1}cm^{-1}$]	Fluorescence max. [nm]	Q.Y. ¹ [%]	Luminescence Lifetime at 25 °C [ns]
ethanol	391	15,000	498	55	8.5 ²
water	405	13,800	518	80	9.3 ³

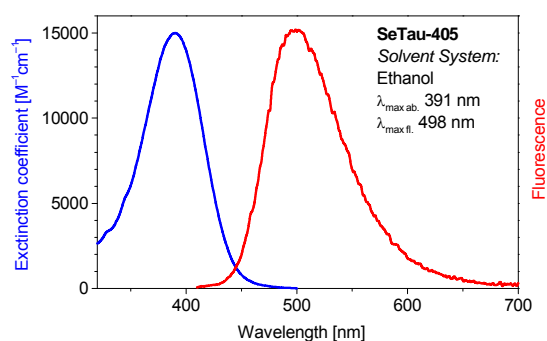
¹ Excitation at 400 nm

² **K7-537** (Free acid) vs. Dimethyl-POPOP in ethanol ($\tau = 1.45$ ns [http://iss.com/resources/reference/data_tables/FL_LifetimeStandards.html]), ISS Chronos FD, $\lambda_{ex.} = 370$ nm LED, ethanol, $\tau = 8.53 \pm 0.02$ ns, $\chi^2 = 1.53$.

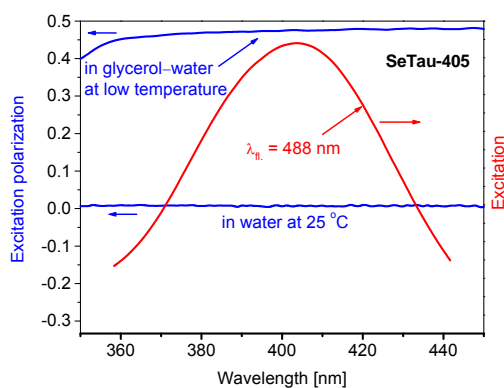
³ **K7-547** (NHS ester) vs. Ludox, ISS Chronos FD, $\lambda_{ex.} = 370$ nm LED, water, $\tau = 9.27 \pm 0.01$ ns, $\chi^2 = 1.19$.



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



Absorption and emission spectrum 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