

Illuminating Chemistry

Preparation Recipes

A. Phosphorescence and fluorescence

Solution A (phosphorescence):

500 mg 4-biphenylcarboxylic acid in 250 mL MeOH

Solution B (fluorescence):

500 mg 1-naphthanoic acid in 250 mL MeOH

B. Chemiluminescence

Luminol solution:

Dissolve 4 g Na_2CO_3 in 500 mL water. Add 0.2 g luminol (3-aminophthalhydrazide), 24 g NaHCO_3 , 0.5 g $(\text{NH}_2)_2\text{CO}_3 \cdot \text{H}_2\text{O}$, and 0.4 g $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$. Dilute to 1 L with water to yield 200 vials of 5-mL solution.

Weak hydrogen peroxide solution:

Dilute 5 mL of 30% hydrogen peroxide in 1 L water to yield 200 vials of 5-mL solution

Strong hydrogen peroxide solution:

Place 5-10 mL 30% H_2O_2 in each vial

Dissolve 50 mg luminol in 30 mL CH_2Cl_2

Add a few drops of luminol solution to each vial