

05/03/2015

Warning! This experiment involves hazardous materials and procedures, be careful to wear all off the required protection equipment and a person with chemical lab experience.

YOU NEED:

- 50 mg of CCPO (Bis-(2,4,5-trichloro-6-(pentyloxycarbonyl)phenyl)oxalate) or more expensive TCPO (Bis(2,4,6-trichlorophenyl) oxalate) ;
- 10 ml of diethyl phthalate (solvent);
- 100 mg of sodium acetate;
- 3ml of 30% hydrogen peroxide;
- 3mg of fluorescent dye:
The fluorescent dye can be 9,10-bis(phenylethynyl)anthracene for green, Rubrene for yellow, 9,10-diphenylanthracene for blue and rhodamine B for red.

PROCEEDING:

As a first step put the solvent in a vial. Then add the dye and shake.

Add the oxalate and the sodium acetate and shake again.

Now turn off the lights, add the H_2O_2 and shake again. You will have your glow sticks.



05/03/2015

WHY DOES IT HAPPEN?

Actually, there is not a well-established theory to explain what happens in this reaction. However we can superimpose that the reaction that occurs in the final stage releases some energy as light (because it is absorbed by the polarization of the dye), not as usual by heat.

In this way the fluid lights up and glows in the dark. This theory is supported by the fact that without any dye the liquid doesn't light up and heats a little.

Credits

<http://www.instructables.com/id/Make-Glow-Sticks-The-Science/>