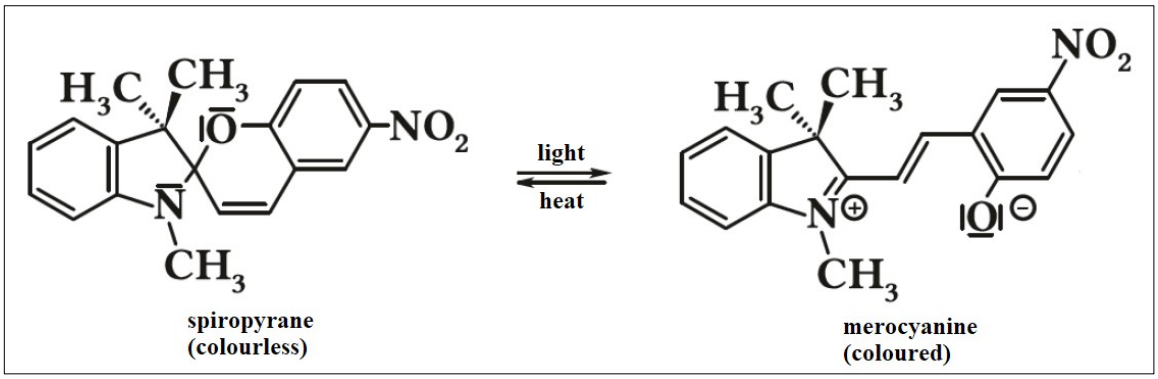
(Upper secondary) Name: _____ Date: _____

Solvatochromism (Sek. II/supper secondary level)

The solutions of the same substance in different solvents differ in colour

<u>Group 3: Chemical equilibrium</u>

C1 Formulate a chemical equilibrium constant for the spiropyrane-merocyanine-equilibrium.



C2 In the dark, chemical equilibria have been reached in the three different solutions. Estimate the ratio of the merocyanine molecules, which are responsible for the colour of the solution, in xylene (or n-heptane) and ethanol. Afterwards, formulate a rough mathematical relation between the two equilibrium constants ("bigger than"/"smaller than").

C3 Measure the time the spiropyrane-merocyanine-equilibrium in xylene (or n-heptane) needs to settle after switching off the violet LED torch. How much time will the same solution need at 0°C and 70°C? Propose a hypothesis and test it out by way of experiments.