

How To Make Microcapsules

Procedure:

1) Pour 50 ml of distilled water into a 250 ml beaker and stir as high as practical, and heat to 50°C add .05 grams of Polyvinyl alcohol (PVA), allow time for it to dissolve.

2) After the PVA is ALL dissolved add 2ml of a vegetable oil/acetone stock solution made of 8 ml oil in 100 ml of acetone with oil soluble dye if desired(Oil Red O, Sudan Black B), last add 1 ml of saturated borax solution, continue to stir for 15 minute.

3) Now the capsules can be removed and examined under a light microscope at 100x or greater magnification.

Ideas:

The system can be changed and effects to the capsules noted by; altering the polymer—sodium alginate or methylcellulose.

Using different concentrations of polymer, dye, and acetone or adding them at different times will also change the capsules. Capsule formation is also sensitive to temperature, pH, and stirring speed.

Costs:

PVA	=	25 g @	\$17.20	Aldrich P.O. Box 14508 St. Louis MO 63178-9916
Sodium Alginate	=	100 g @	\$ 23.00	
Methylcellulose	=	100 g @	\$ 27.00	
Oil Red O	=	25 g @	\$ 13.00	
Borax	=	25 g @	\$12.50	
Vegetable Oil	=	1 pt.(473 ml) @	\$ 1.29	

The vegetable oil was purchased at P&C, the Borax is also available at most grocery stores. **Minimal cost with no dye and one polymer = \$31.00**