

(4) A surfactant interferes with the formation of hydrogen bonds, thus reducing surface tension.

(5) Dissolve well (polar or ionic):

Salt,  $Mg(OH)_2$ ,  $CuSO_4$

Dissolve poorly or not at all (nonpolar):  
oil,  $CCl_4$ ,  $CH_4$

(6) The last three substances should dissolve well in benzene, since both solute and solvent would be nonpolar.

(7) An electrolyte is a substance that conducts electricity in the molten state or in aqueous solution. Ionic (and some polar) substances are electrolytes.

(8) Strong electrolytes break up into ions almost completely in solution, while weak electrolytes only partially dissociate in solution.

(9) Hygroscopic: absorb water from the surroundings (ex: silica gel)

Deliquescent: absorb enough water to form an aqueous solution (ex:  $NaOH$ )

Efflorescent: lose water of hydration to the surrounding (ex:  $CuSO_4$ )

(10) 
$$\frac{\text{mass of } H_2O}{\text{mass of hydrate}} = \frac{36.0}{147.1} \times 100 = 24.5\%$$
  
H<sub>2</sub>O