emulsion

Thursday, February 17, 2022 9:25 AM

Emulsion : Colloidal sol^n in which DP & DM both are liquid.

Emulsion = liq + liq

heterogenous colloidal sol^n

1-1000nm

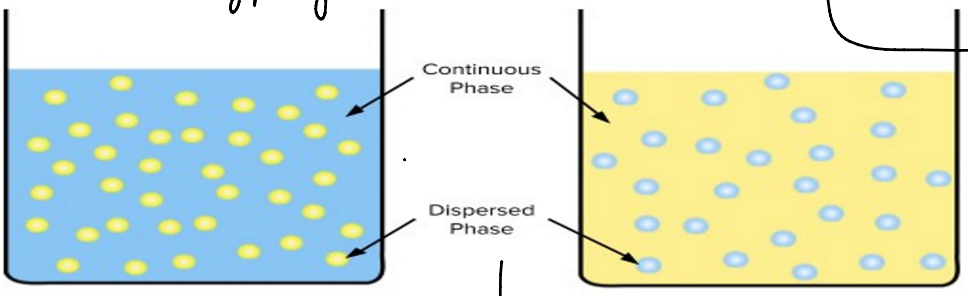
< 1nm

O/ $H_2O + C_2H_5OH$

Not emulsion

True sol^n (homogenous sol^n)

Types of emulsion :-



O/W

(oil/water)

Common Examples:
Milk, ice cream, mayonnaise, latex paint

DP : oil
DM : water

(Ex: Milk)
fat + water
(oil + water)

W/O

(water/oil)

Common Examples:
Butter, margarine, lotions, face creams

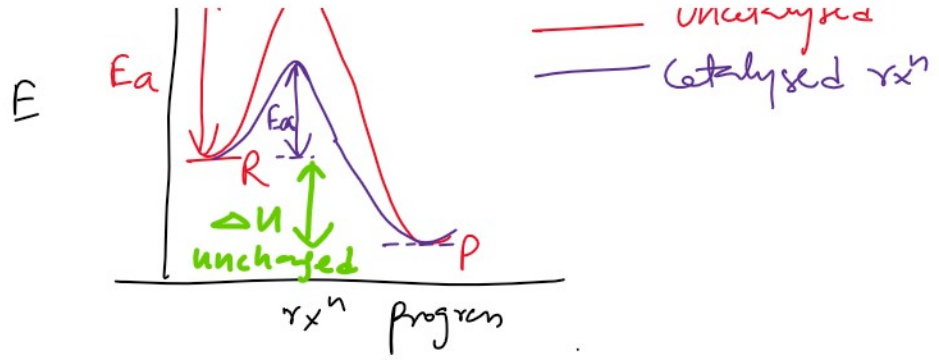
DP : water
DM : oil

Ex: Butter

Catalyst & Catalysis :

Catalyst :- Substance which ↑ or ↓ rate of reaction without participating (involving) in rx^n.

→ They decrease E_a without changing value of ΔH.



Types of catalyst

Positive Catalyst

* ↑ ror

Ex: Decomposition of $KClO_3$

$$KClO_3 \xrightarrow{\Delta} KCl + O_2$$

High temp is required

$$KClO_3 \xrightarrow[\Delta]{MnO_2} KCl + O_2$$

rxn can occur at low temp.

Ex: $N_2 + 3H_2 \rightleftharpoons 2NH_3$

t_{eqm} = 10 hours

$$N_2 + 3H_2 \xrightleftharpoons{Fe} 2NH_3$$

t_{eqm} = 1 hour

Catalyst ↓ t_{eqm}

not

Negative Catalyst

↓ ror

Ex: Hydrogenation of alkyne

$CH_3-C\equiv C-CH_3 \xrightarrow[Pd]{1\,H_2} [CH_3-CH=CH-CH_3] \xrightarrow{1\,H_2} CH_3-CH_2-CH_2-CH_3$

alkane

$CH_3-C\equiv C-CH_3 \xrightarrow[CaCO_3]{H_2/Pd} CH_3-CH=CH-CH_3$

alkene

OR

H_2/Pd + Prisan { $BaSO_4$ / S /  } ⊖ve Catalyst

Catalyst ↓ eqm

Catalyst do not change value of Keq.

Enzymes :- Enzymes are bio catalysts.

$C_{12}H_{22}O_{11}$ (Sucrose) $\xrightarrow[H_3O^+]{\text{Invertase}}$ Glucose + Fructose

→ highly specific

→ highly efficient.