

H_2O Covalent

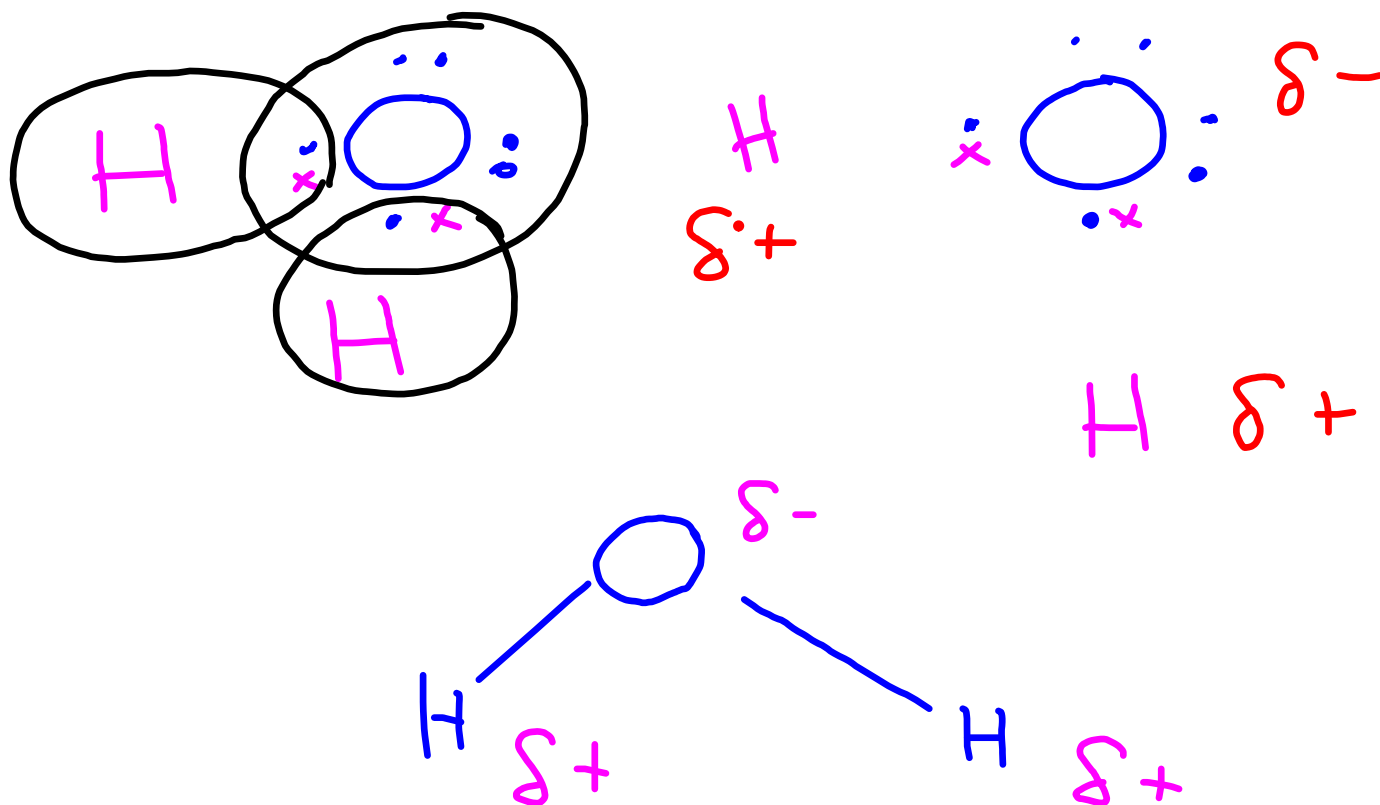
HCl H^{+1} Cl^{-1} ionics
produces ions.

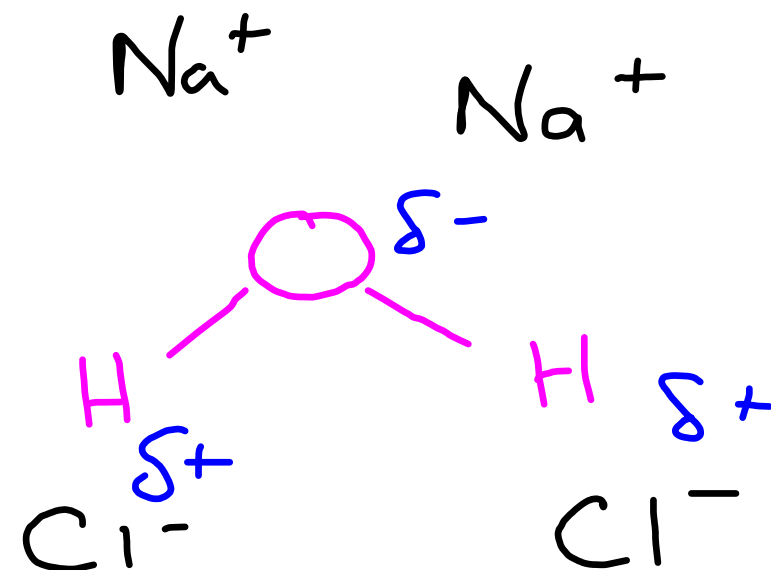
$NaCl$ Ionic

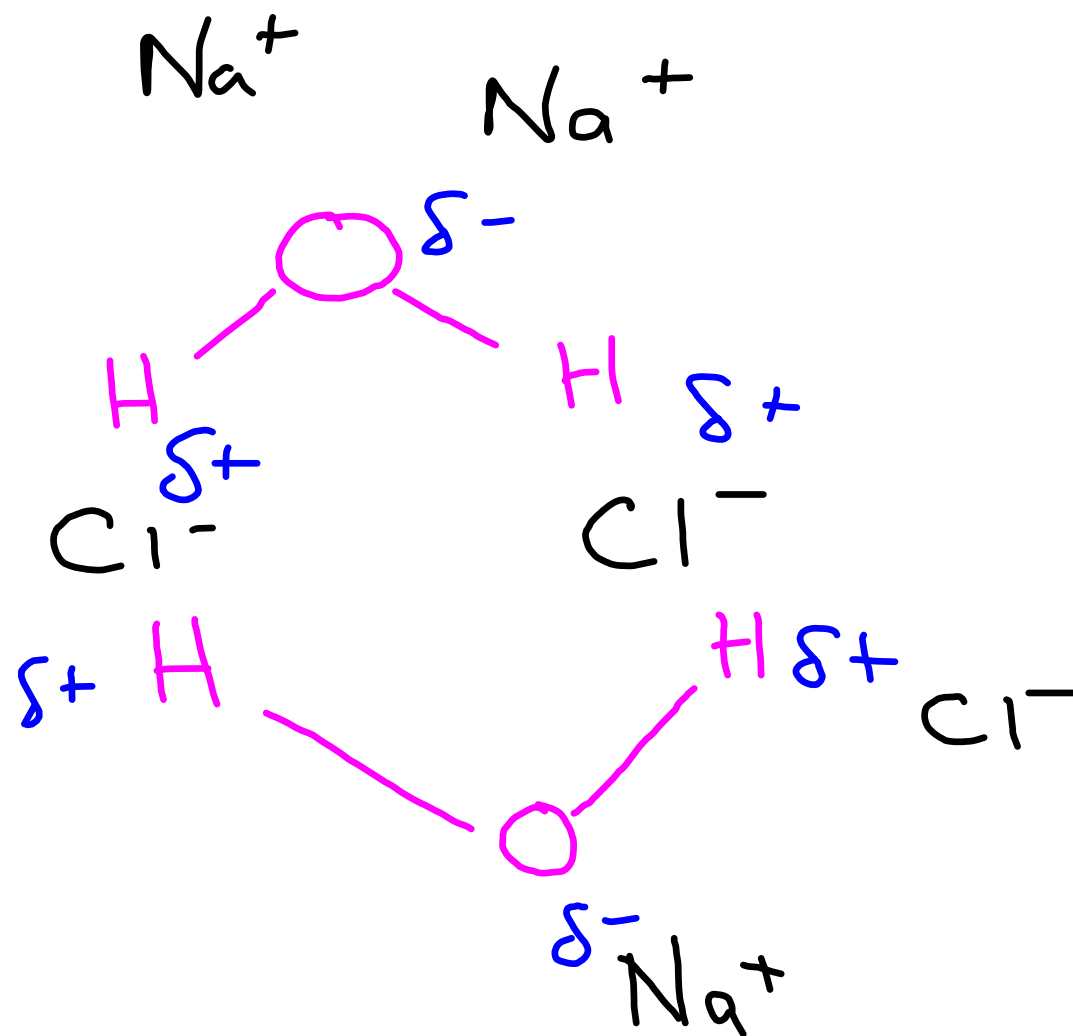
polar - produces ions.

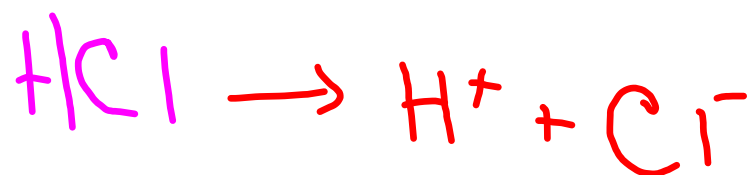
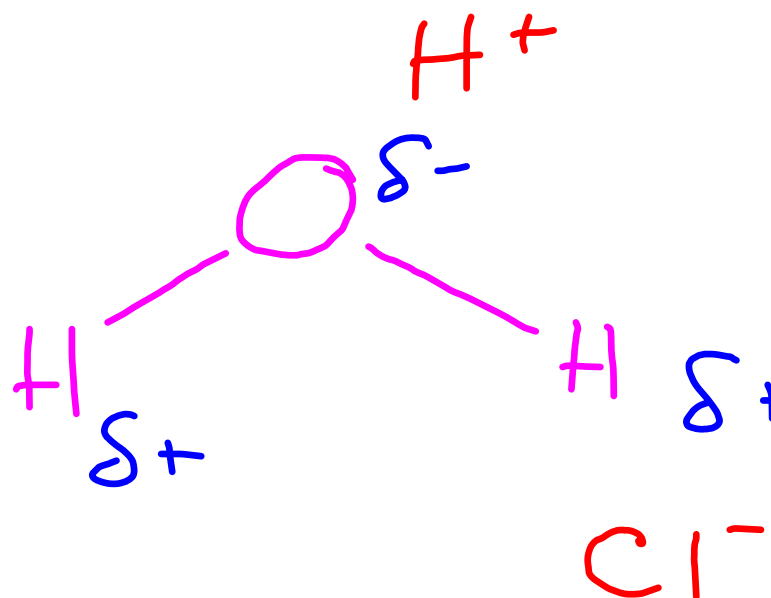
nonpolar - produces no ions

partially polar - covalently
bonded but is a molecule
like H_2O that has poles
(δ)









"like dissolves like"

Water = universal solvent
that is polar.

Salts, acids and bases
dissolve in H_2O

Does gasoline dissolve in
water?

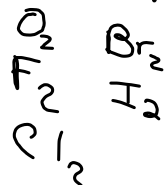
gasoline is nonpolar

CCl_4 (nonpolar)

N_2 (nonpolar)



$: \ddot{N} : \ddot{N} :$ anything that is
bonded to itself is
nonpolar



Quiz Wed

$$\textcircled{1} \quad \frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

$$\textcircled{2} \quad PV = nRT$$

① -220°C

② 2 mol

$$\frac{2.00}{400} \times \frac{.25}{x}$$

$$(400)(.25) = x(2.00)$$

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

g of solute ml is the soln

$$\% = \frac{g}{ml} \times 100$$

$$M = \frac{\text{mol solute}}{L \text{ of soln}}$$

Solute is what we dissolve
in the solvent

13. % and M 33.0g $C_6H_{12}O_6$

dissolved into 0.200L

$$\% = \frac{g}{mL} \times 100$$

$$\% = \frac{33.0g}{200 mL} \times 100 = 16.5\%$$

$$\frac{0.200L \times 1000 mL}{1L} = 200 mL$$

13. % and M 33.0g $C_6H_{12}O_6$

dissolved into 0.200L

$$M = \frac{\text{mol of solute}}{\text{L of soln.}}$$

$$C \ 12 \times 6 = 72$$

$$H \ 1 \times 12 = 12$$

$$O \ 16 \times 6 = 96$$

$$\underline{180g = 1mol}$$

$$\underline{33.0g \times 1mol}$$

$$180g$$

$$= 0.183333 \text{ mol}$$

$$\underline{.183333 \text{ mol}}$$

$$.200 \text{ L}$$

$$= .91666 \text{ M}$$

$$9.17 \times 10^{-1} \text{ M}$$

$$.917 \text{ M}$$

M = Molarity
= Molar
= "big M"

16 % and M 25.0g NaCl

250 mL

$$\frac{25.0 \text{ g}}{250 \text{ mL}} \times 100 = 10\%$$

10.0%

$$M = \frac{\text{mol of solute}}{\text{L of soln}} \quad 1.0 \times 10^{-1} \%$$

$$\begin{array}{l} \text{Na} = 1 \times 23 \\ \text{Cl} = 1 \times 35.5 \end{array} \quad \frac{25.0 \text{ g} \times 1 \text{ mol}}{58.5 \text{ g}} = 0.42735 \text{ mol}$$

$$\begin{array}{r} + 23 \\ 35.5 \\ \hline 58.5 \text{ g} = 1 \text{ mol} \end{array}$$

$$\frac{0.42735 \text{ mol}}{.250 \text{ L}} = 1.7094 \text{ M}$$

1.7 M

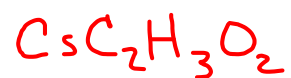
1. $\text{CsC}_2\text{H}_3\text{O}_2$ 250.0 mL

0.76 M

$$M = \frac{\text{mol of solute}}{\text{L of soln}}$$

$$\frac{0.76}{1} = \frac{x}{.250\text{L}}$$

$$(0.76)(.250) = 0.19 \text{ mol}$$



$$\text{Cs } 133 \times 1 = 133$$

$$\text{C } 12 \times 2 = 24$$

$$\text{H } 1 \times 3 = 3$$

$$\text{O } 16 \times 2 = 32$$

$$192 \text{ g} = 1 \text{ mol}$$

$$\frac{0.19 \text{ mol} \times 192 \text{ g}}{1 \text{ mol}} = 36.48 \text{ g}$$

$$36 \text{ g}$$
$$3.6 \times 10^1 \text{ g}$$

2. ?g $\text{Mg}(\text{BrO}_2)_2$ 775mL

1.34M

$$1.34 = \frac{x}{.775}$$

$$(1.34)(.775) = x$$

$$x = 1.0385 \text{ mol}$$

$$\text{Mg } 24 \times 1 = 24$$

$$\text{Br } 80 \times 2 = 160$$

$$\text{O } 16 \times 4 = \frac{64}{248} = 1 \text{ mol}$$

$$1.0385 \text{ mol} \times 248 \text{ g} = 257.548 \text{ g}$$

$$\frac{1.0385 \text{ mol} \times 248 \text{ g}}{1 \text{ mol}} = 257.548 \text{ g}$$

$$258 \text{ g}$$

$$2.58 \times 10^2 \text{ g}$$