

Chem 101-sp-2021; Double Displacement Lab.

Observations

	$\text{AgNO}_3 (\text{Ag}^+)$	$\text{Pb}(\text{NO}_3)_2 (\text{Pb}^{2+})$	$\text{Ca}(\text{NO}_3)_2 (\text{Ca}^{2+})$
$\text{Na}_2\text{CO}_3 (\text{CO}_3^{2-})$	White precipitate is formed $\text{Ag}_2\text{CO}_3(\text{s})$	White precipitate is formed $\text{PbCO}_3(\text{s})$	White precipitate is formed $\text{CaCO}_3(\text{s})$
$\text{Na}_2\text{S} (\text{S}^{2-})$	Black precipitate is formed $\text{Ag}_2\text{S}(\text{s})$	Black precipitate is formed $\text{PbS}(\text{s})$	Pale yellow precipitate is formed $\text{CaS}_2(\text{s})$
$\text{NaOH} (\text{OH}^-)$	Brown precipitate is formed $\text{AgOH}(\text{s})$	White precipitate is formed <del>is soluble in excess</del> $\text{NaOH}$ to form colorless solution	White precipitate is formed $\text{Ca}(\text{OH})_2(\text{s})$
$\text{Na}_2\text{SO}_4 (\text{SO}_4^{2-})$	White precipitate is formed $\text{Ag}_2\text{SO}_4(\text{s})$	White precipitate is formed $\text{PbSO}_4(\text{s})$	White precipitate is formed. $\text{CaSO}_4(\text{s})$
$\text{NaCl} (\text{Cl}^-)$	White precipitate is formed $\text{AgCl}$	White precipitate is formed $\text{PbCl}_2$	No precipitate

A. a, b, c, d, e, f, g, i, j, k, l, m, n

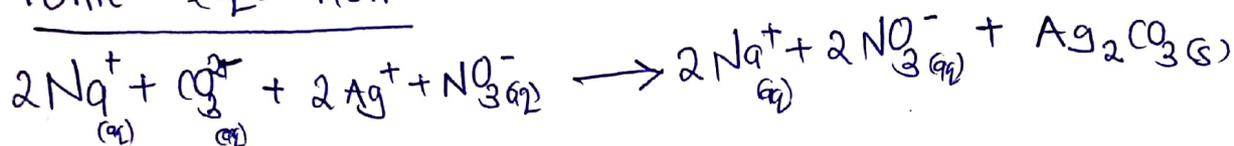
B. Equations for the above reactions

(a)  $\text{Na}_2\text{CO}_3$  with  $\text{AgNO}_3$

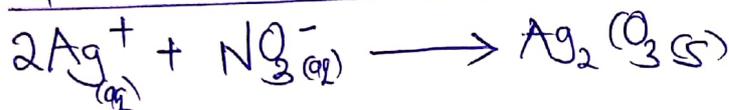
Molecular equation



Ionic equation

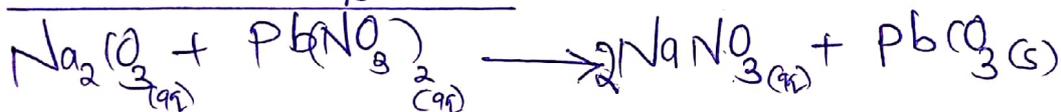


Net ionic equation



(b)  $\text{Na}_2\text{CO}_3$  with  $\text{Pb}(\text{NO}_3)_2$

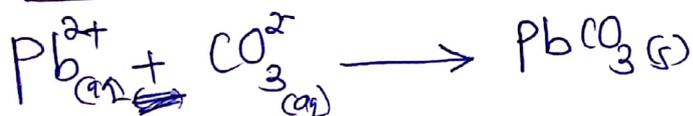
Molecular equation



Ionic equation

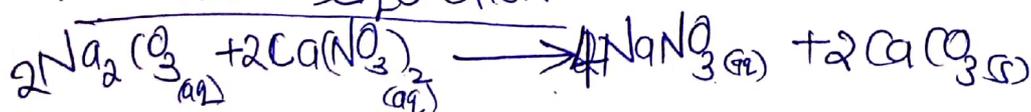


Net ionic equation

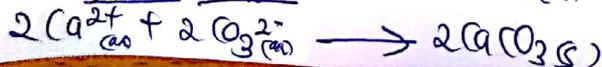


(c)  $\text{Na}_2\text{CO}_3$  with  $\text{Ca}(\text{NO}_3)_2$

Molecular equation

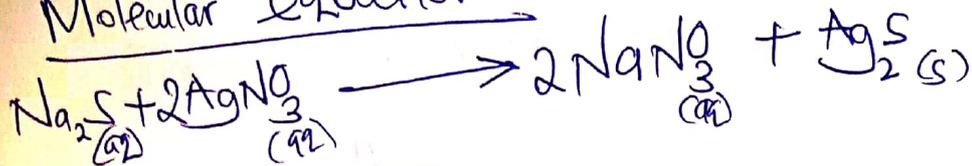


Net ionic equation

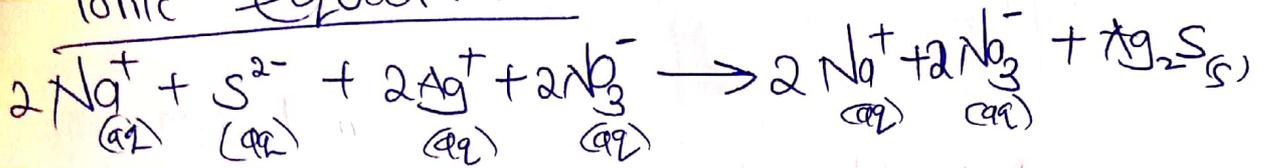


(d)  $\text{Na}_2\text{S}$  with  $\text{AgNO}_3$

Molecular equation



Ionic equation

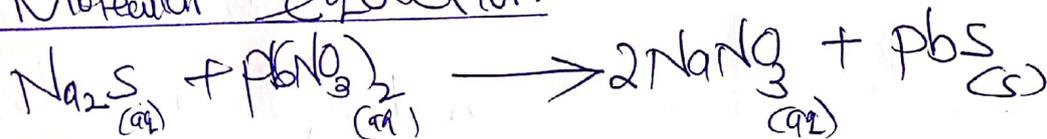


Net ionic equation

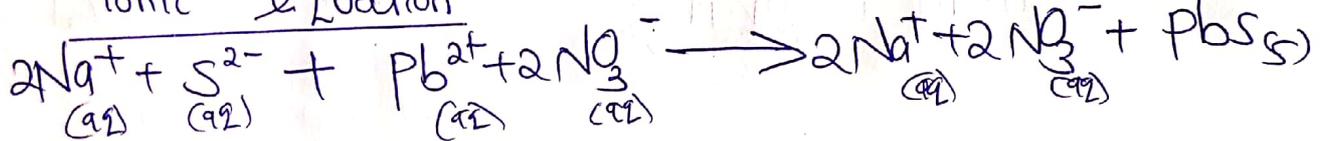


(e)  $\text{Na}_2\text{S}$  with  $\text{Pb}(\text{NO}_3)_2$

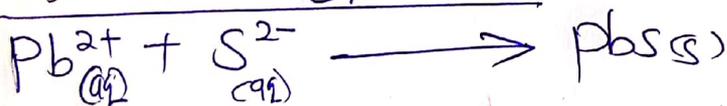
Molecular equation



Ionic equation

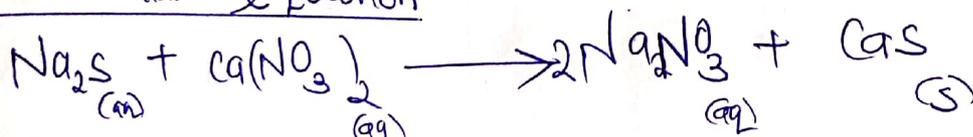


Net ionic equation



(f)  $\text{Na}_2\text{S}$  with  $\text{Ca}(\text{NO}_3)_2$

Molecular equation



Ionic equation

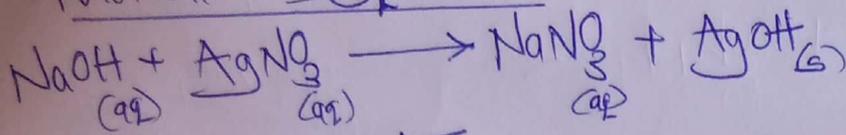


Net ionic equation

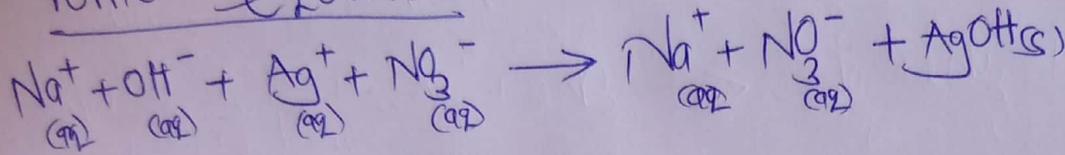


(g) NaOH with  $\text{AgNO}_3$

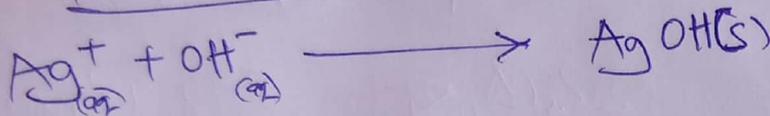
Molecular equation



Ionic equation

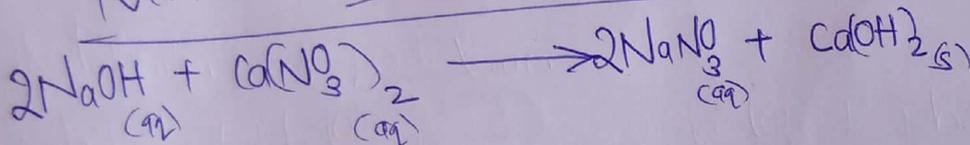


Net ionic equation

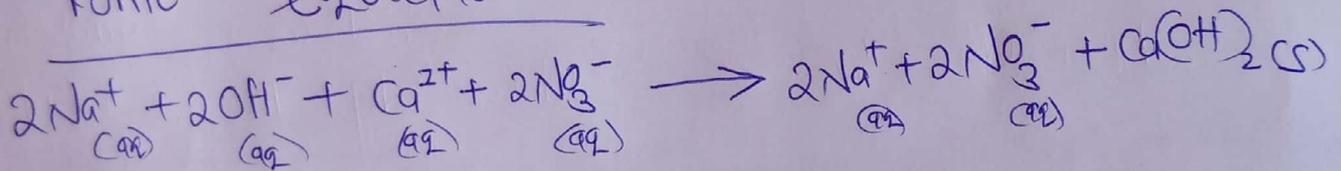


(i) NaOH with  $\text{Ca(NO}_3)_2$

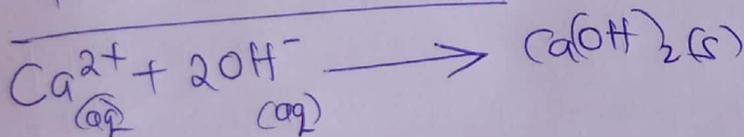
Molecular equation



Ionic equation

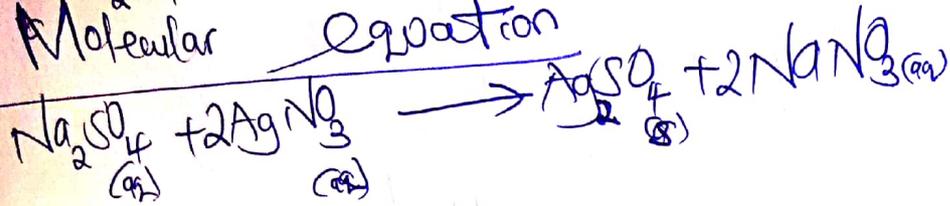


Net ionic equation



(j)  $\text{Na}_2\text{SO}_4$  with  $\text{AgNO}_3$

Molecular equation



Ionic equation

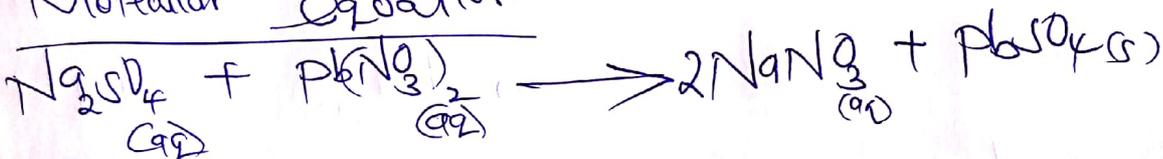


Net ionic equation

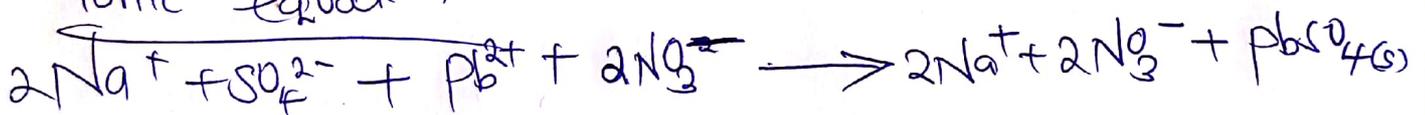


(k)  $\text{Na}_2\text{SO}_4$  with  $\text{Pb}(\text{NO}_3)_2$

Molecular equation



Ionic equation



Net ionic equation



(l)  $\text{Na}_2\text{SO}_4$  with  $\text{Ca}(\text{NO}_3)_2$

Molecular equation



Ionic equation

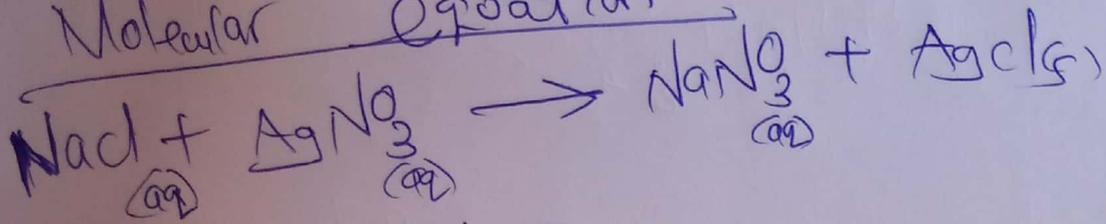


Net ionic equation

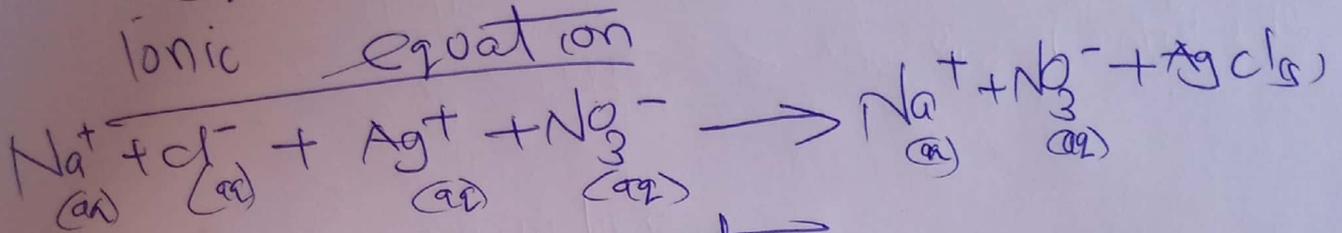


(m) NaCl with  $\text{AgNO}_3$

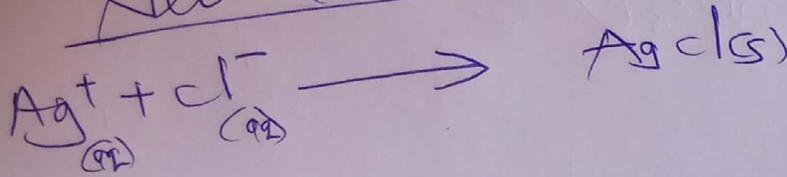
Molecular equation



Ionic equation

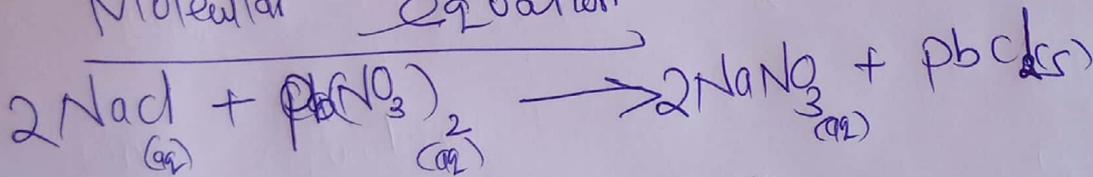


Net ionic equation

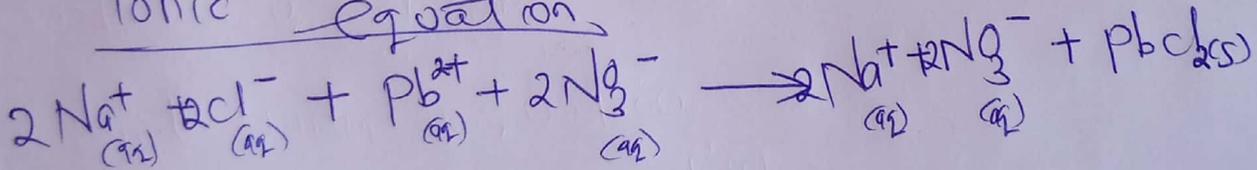


(n) NaCl with ~~the~~  $\text{Pb}(\text{NO}_3)_2$

Molecular equation



Ionic equation



Net ionic equation

