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## anions

### types

1. Carbonate ion,  $\text{CO}_3^{2-}$
2. Chloride ion,  $\text{Cl}^-$
3. Sulfate ion,  $\text{SO}_4^{2-}$
4. Nitrate ion,  $\text{NO}_3^-$

### testing

#### 1. $\text{CO}_3^{2-}$

bubbling



- add dilute acid — results in Effervescence observed
- bubble the gas given off into limewater ( $\text{CO}_2$ )
  - ↳ wld form white ppt of calcium carbonate (w limewater)  
CaCO<sub>3</sub>

#### 2. $\text{Cl}^-$

- add dilute nitric acid, then add aq silver nitrate
  - ↳ forms white ppt — silver chloride,  $\text{AgCl}$

#### 3. $\text{SO}_4^{2-}$

- add dilute nitric acid, then add aq barium nitrate

↳ white ppt of barium sulfate,  $\text{BaSO}_4$

#### 4. $\text{NO}_3^-$

- add  $\text{NaOH (aq)}$ , then add a piece of aluminium  
then warm mixture  $\rightarrow$  resulting in Effervescence  
test gas given off w damp red litmus paper  
↳  $(\text{NH}_3)$