

Tests
for -ve
ions

Cl^- white ppt. add HCl + CO_3^{2-} $\text{CO}_2 \uparrow$
Lime water turns milky

Br^- cream ppt. BaCl_2 SO_4^{2-} white ppt.

Dil. HNO_3 $\rightarrow$
then AgNO_3
silver nitrate

I^- pale yellow ppt. NO_3^-
 NaOH , warm
 NH_3 ammonia
given off

Li The halogens

Na

K

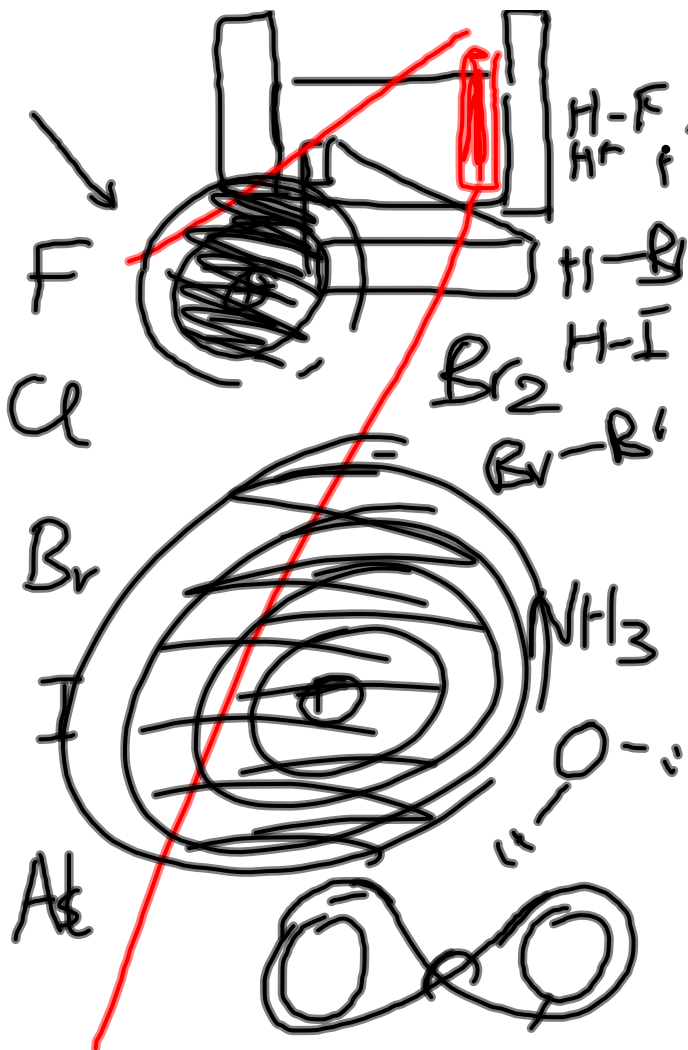
Rb

clear gas →
colourless

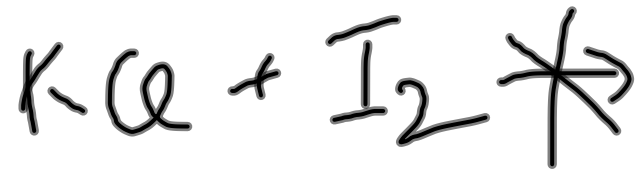
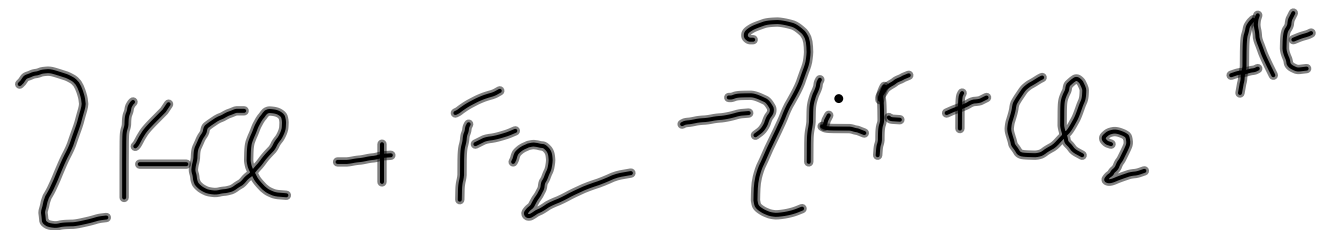
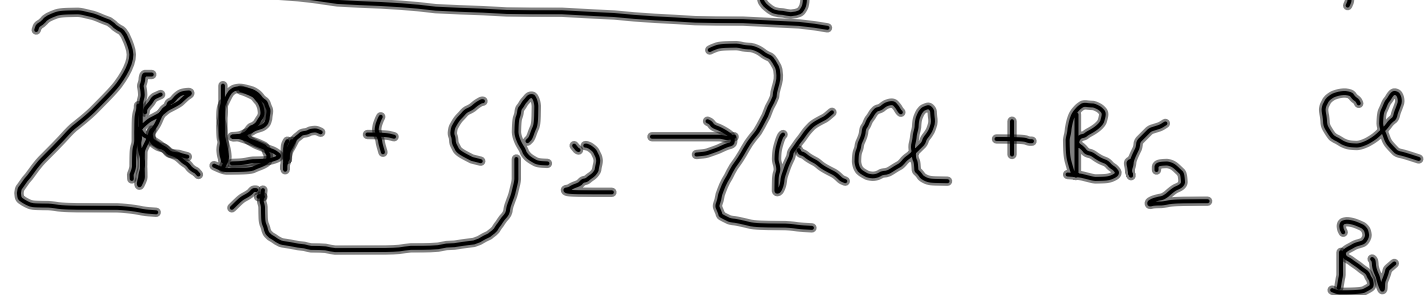
yellow-green gas → Cl

Orange brown gas → Br

Purple Solid → I



Displacement Halogens



Positive Ion Tests

Flame tests

Li^+ bright red

Na^+ yellow

K^+ lilac

Ca^{2+} (2 ways) brick red

Ba^{2+} green

Al^{3+} white ppt NaOH

Mg^{2+} white ppt

Cu^{2+} light blue ppt

white ppt

iron (II)

iron (III)

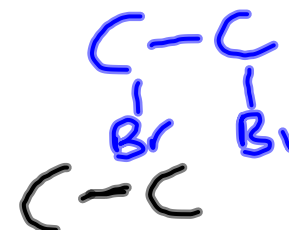
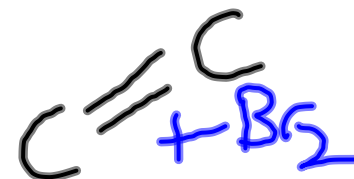
Fe^{2+} dirty green

Fe^{3+} rust red brown

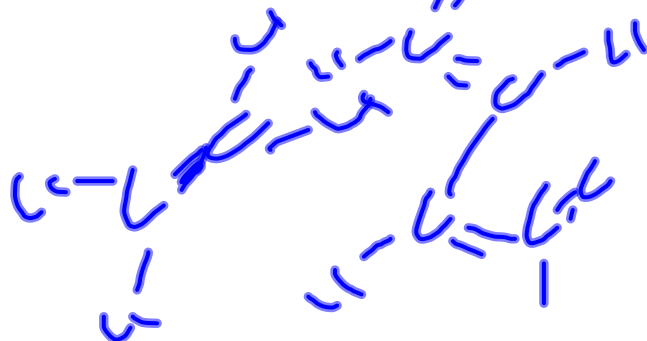
$\text{NH}_4^+ \rightarrow \text{NH}_3(\uparrow)$

Organic Compounds

Unsaturated hydrocarbons. turns
bromine
water
colourless



Saturated. no reaction
with bromine
water

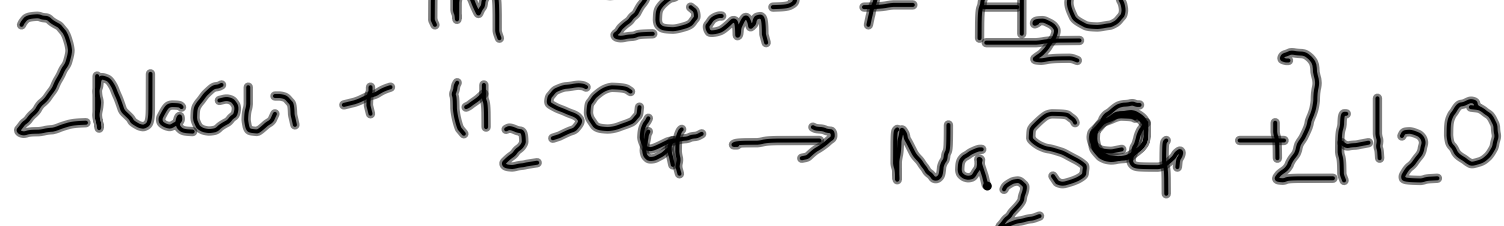
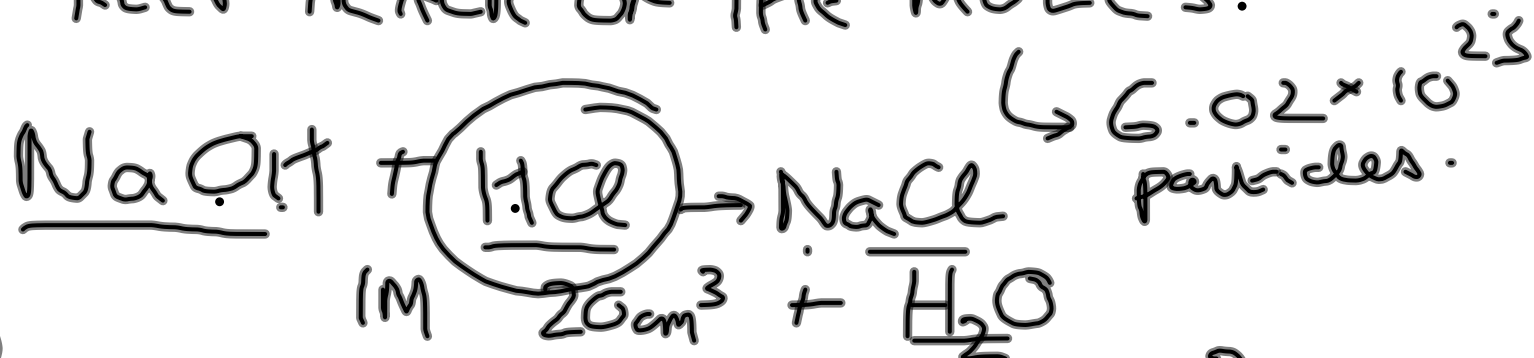


bromine Br_2
water orange

Titration

Number one rule:

KEEP TRACK OF THE MOLES.



$$1\text{M} \times \frac{20}{1000} = 0.02 \text{ mol HCl}$$

0.02 mol NaOH 0.05, ~~was~~
50cm³ 0.4M