

Limit test of arsenic:

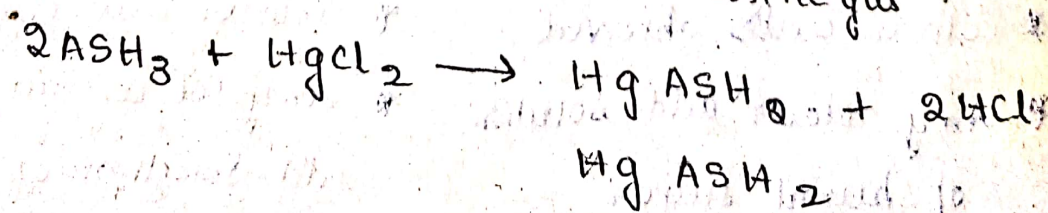
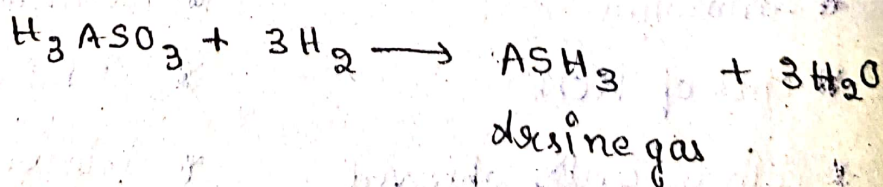
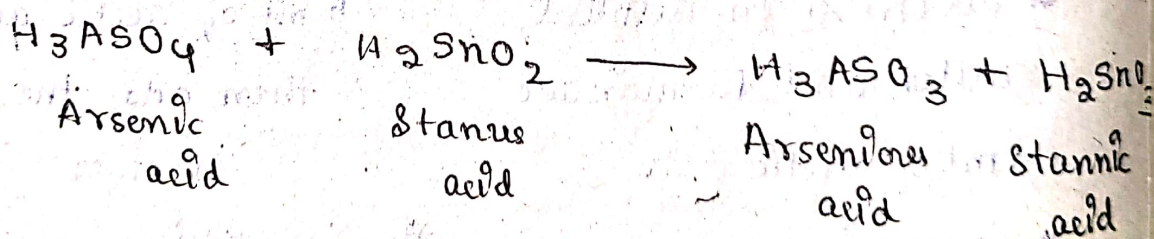
Principle:

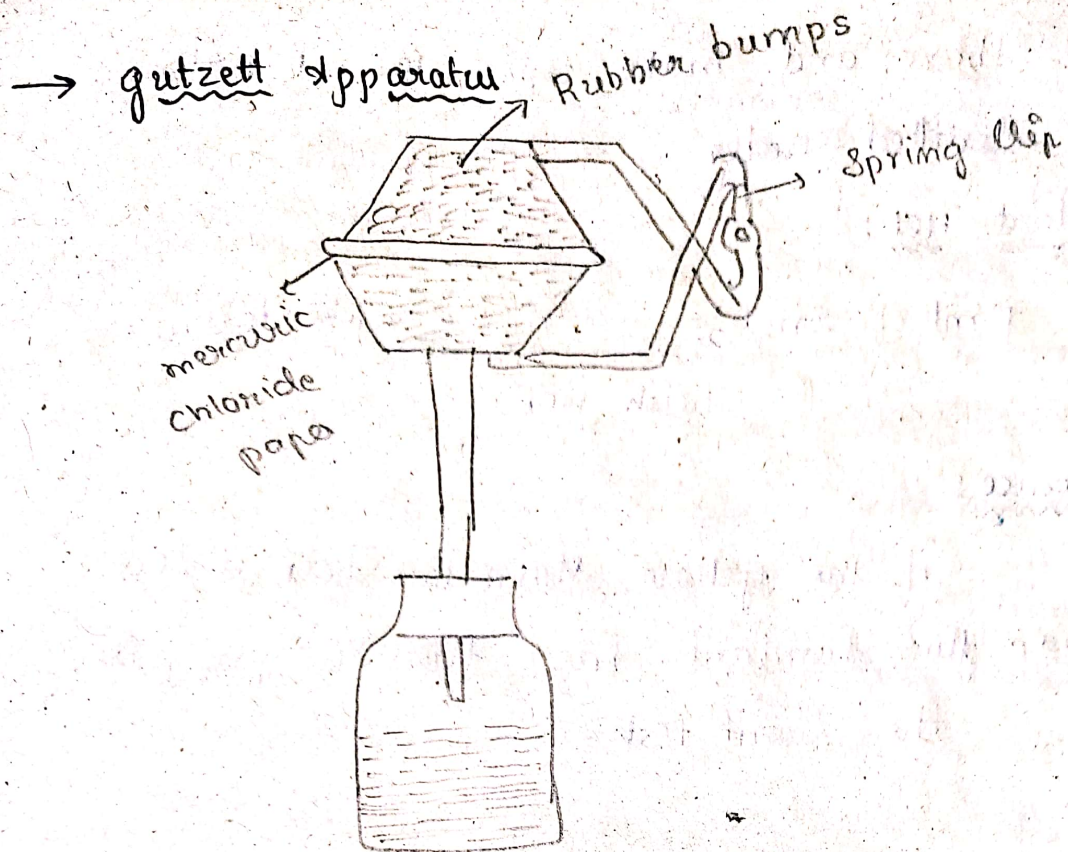
it is based on the fact that arsenic in arsenious state can be easily reduced to arsine gas. when this gas is ^{passed over} ~~passed over~~ mercuric Bromide paper produces a stain which changes in colour from yellow to Brown. Reduction

Reduction of arsenic to arsine gas:

when this sample is dissolved in acid, the arsenic is converted to arsenic acid and gets reduced by reducing agents (potassium iodine, Stannous acid) to arsenious acid. The nascent Hydrogen formed during Reaction further reduces arsenious acid to arsine gas, which reacts with mercuric Bromide paper giving a yellow stain.

Reaction Involved:





Test

- * Add 50 ml of distilled water.
- * Sample = 2 gm.
- * 10 ml of Standard HCl
- * 1 gm KI
- * Add 10 gm of zinc
- * Stir with glass Rod and wait for 40 minutes

Standard

- * Add 50 ml of distilled water
- * Standard Lead solution
- * 10 ml of Standard HCl
- * 1 gm KI
- * Add 10 gms of zinc
- * Stir with glass Rod and wait for 40 minutes

Standard Solution:

0.132 g of Arsenic trioxide + 50 ml
HCl → make up to 100 ml with
distilled water

1 ml of above and make upto 100 ml with
distilled water

Standard HCl:

1 ml of $\text{SnCl}_2 \longrightarrow$ make upto 100 ml
with HCl

Inference:

If the yellow stain in test is less
than the standard then the sample passes
the limit test.

Interpretation

Test