

## Questions & Answers

CBSE Chemistry Grade 12 Transition Elements



Question Answers Related Questions



**Nessler's reagent is used to detect trace amounts of ammonia. Its formula is:**



A.  $KHgI_4$

B.  $K_2HgI_2$

C.  $K_2HgI_4$

D.  $KHgI_3$

Answer ✓ Verified

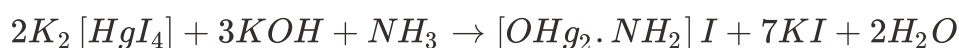
39.6K+ Views

**Hint:** Nessler's reagent is used to detect ammonia. It is a pale solution which gets darker yellow when some amount of ammonia is added. A brown precipitate may form at higher concentration. Nessler's reagent can be crystallized from a concentrated solution of mercury iodide with potassium iodide.

**Complete step-by-step answer:** Nessler's reagent is a potassium tetraiodomercurate(II) which is an inorganic compound that consists of cations and anions. Here, cations are potassium ions and anions are tetraiodomercurate(II). Nessler's reagent is an alkaline solution of  $K_2HgI_4$ .

To detect the amounts of ammonium ions present in a solution, we have to use  $0.09\text{mol/L}$  solution of potassium tetraiodomercurate in  $2.5\text{mol/L}$  potassium hydroxide. This solution is a pale solution which becomes darker yellow in presence of ammonium ions.

Let us see the reaction:



The active species for the detection of ammonia is  $HgI_4^{2-}$ . This active species reacts with  $NH_4^+$  ions and forms precipitate.

Nessler's reagent is used for the qualitative analysis of ammonia. Qualitative analysis is basically defined as the chemical properties of an unknown substance that are determined by reacting the unknown substance with different reagents.

**The formula for Nessler's reagent is  $K_2HgI_4$ . Therefore, the correct option is C.**

**Note:** It is to note that we have to remember the chemical formula of Nessler's reagent and also the complex formed when the reagent reacts with ammonia. A brown precipitate is formed due to this complex. The brown precipitate is known as Milon's base. The colour of Nessler's reagent is pale yellow. Nessler's reagent is widely used for the determination of ammonia in the solution.

39.6K+ Views

## Related Questions

When zinc powder is added to the acetic acid \_\_\_\_\_.

A.The mixture becomes warm

B.A gas is evolved