

Label:

Composition: 50 ml contains: Iodine : Potassium iodide (KI) : Distilled water : Uses: It is used for Hypothyroidism. Precaution: Keep medicines away from children. Manufactured By:		Storage: Store below 25 ⁰ C protected from light, avoid contact with metal.
	IODINE SOLUTION (B.P.) 50 ML FOR ORAL USE ONLY.	Mfg. Lic. No.: Batch No. : Mfg. date : Exp. Date : MRP Rs : (Inclusive of all taxes) Marketed By:

Calculation:

$$\text{Factor} = \frac{\text{Required quantity}}{\text{Quantity given}} = \dots\dots\dots$$

Practical -3

Date: / /

Aim: To prepare and submit 50 ml of Aqueous Iodine solution (I.P.).

Reference:.....
.....

Requirements:

Apparatus/Equipment required:.....

Chemical required:.....
.....

Theory:

Aqueous Iodine Solution, I.P. The full strength Lugol's iodine solution contains 5% w/v of iodine and 10% w/v of potassium iodide (KI) in purified water. Iodine is poorly soluble in water due to its non-polar nature. Addition of potassium iodide (KI) in concentration twice as of iodine helps to solubilize iodine. Ratio of KI : I₂ equal to 2:1. It is an antiseptic medication and disinfectant used for a number of purposes.

Lugol's Iodine Solution Formulation Table (As per I.P.):

S. No.	Chemical Name	Quantity Given (100ml)	Quantity Taken (Factor x Quantity given)	Uses of Ingredients
1.	Iodine	5 gm		Antithyroid agent
2.	Potassium iodide (KI)	10 gm		Solubilizer
3.	Distilled/Purified water	q. s. 100 ml		Vehicle

Procedure:

- Dissolve the potassium iodide in small amount of the distilled water to make concentrated solution of KI.
- Add slowly iodine crystals and keep on shaking the container (test tube), until these are dissolved. Then, add remaining amount of water to produce the required volume.
- Now, transfer the formulation to an appropriate container.

Note:- Iodine react with potassium Iodide to form water soluble polyiodide like potassium tri iodide (KI₃).

Method: Aqueous iodine solution prepared by complexation.

Storage: Store at controlled room temperature 15°-30°C, Keep tightly closed and iodine resistant container. Protect from light.

Uses: It is used for Hypothyroidism.

Observation and Evaluation:

Name of the Preparation	Test	Specification	Observation
Aqueous Iodine solution (I.P.)	Description		
	Colour		
	Odour		
	Volume		

Result: I have prepared and submit the _____ in a neat and cleaned glass bottle and labelled it properly.

Note:-

1. Aqueous iodine solution (5%w/v) : Source of Iodine for internal use.
2. Weak iodine solution (2%w/v) : Antiseptic for external use.
3. Strong iodine solution (10%w/v) : Antiseptic for external use.

Questions Bank

1. What is Aqueous iodine solution?
2. What is Hypothyroidism?
3. What is the use of KI in Lugol's iodine solution preparation?
4. Which method used for the preparation of aqueous iodine solution?
5. What is the antiseptic?
6. What is meaning of internal and external use?
7. Explain the meaning of polyiodide.
8. What is Antithyroid agent?
9. What is disinfectant?
10. What is iodine tincture?