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# STERILISATION

## **Sterilization by radiation**

**Ms. Shubhashree Das**

**Assistant Professor**

**School of Pharmacy**

**Centurion University of Technology and Management**

**Balasore**

**[shubhashree.das@cutm.ac.in](mailto:shubhashree.das@cutm.ac.in)**



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# Radiation Sterilization

## Sterilization by U.V light:

- U.V rays for sterilization is produced by passing a low current at high voltage through mercury vapour in an evacuated glass tube.
- The antimicrobial activity of U.V. light depends on its wave length.

## Applications:

- It is used for sterilisation of air to prevent cross infection in hospitals. - It is used in maintain the aseptic area in the pharmaceutical industry & also used for sterilisation.
- It is used for sterilisation of thermolabile substances before packing.



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## **Sterilization by Ionising Radiation**

- The ionising radiations are X-rays & Gamma rays.
- These are kill to bacterial cell & destroys the nuclei of the cell.
- Gamma rays are produced from radio-isotonic source such as cobalt-60 or cesium-137 or of electrons energised by suitable electron accelerator.
- Ionising radiations are much more efficient as a sterilized agent than U.V rays.

### **ADVANTAGES:**

- Gamma rays have high penetration power. So, it can be sterilized after filling them in the final container.
- No aseptic precautions are required.
- This method suitable for all types of materials such as dry, moist & frozen.



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## **DISADVANTAGES :**

- A lot of capital is required in setting up the plant.
  - The radiations are harmful to workers.
  - It produces undesirable changes in many medicaments, such as, color, solubility & texture of the product.
- Sterilization by Ionising Radiation**