

3. **Greenhouse**

Greenhouse is made of glass sheets. It is used to grow plants in cold climates. The sun's radiations easily pass through these glass sheets. These rays are absorbed by the earth and the plants inside the greenhouse which in turn raise the temperature of air in the greenhouse by conduction and convection. The warm air is enclosed and is not allowed to escape. Thus heat loss is negligible. The temperature inside the greenhouse rises to a value which is suitable for plant growth.

4. Factory roofs are painted with shining aluminium paint. The bright surface reduces heat loss in winter and absorbs less heat in summer months. This helps in keeping the inside temperature moderate.

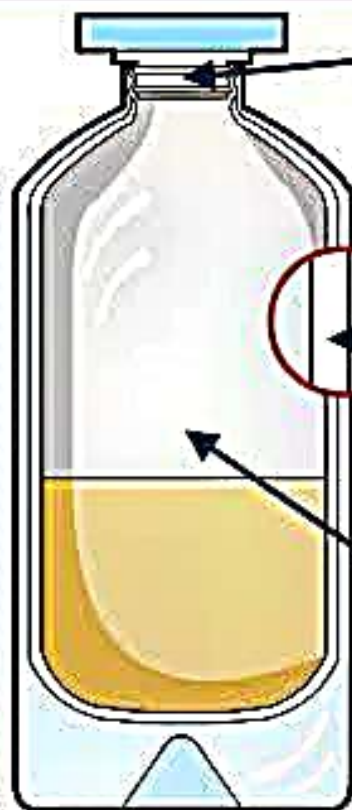
5. **Thermos Flask :**

A thermos flask, keeps drinks hot or cold, close to its temperature for longer period of time by minimizing heat loss or heat gain.

- (a) It consists of a double walled glass shell having a vacuum between the walls. Both the walls are silvered on the vacuum side. Heat cannot enter or leave the inner flask by conduction or convection through the vacuum.
- (b) A very small quantity of heat can be gained or lost by the flask by radiation but this is reduced to minimum because of silvering. A little heat is transmitted through this glass wall at neck and the cork stopper.

Energy Transfer by Heating

How is a vacuum flask able to keep hot drinks hot and cold drinks cold?



2. The plastic (or cork) lid is an insulator and the screw top prevents **convection** currents escaping from the flask.
1. There is a vacuum between two layers of glass or steel, which prevents heat leaving or entering by **conduction**.
3. The walls have silvery surfaces, which prevent heat leaving or entering by **radiation**.