

UNIT 4


WHAT IS LYOPHILIZATION?

Lyophilization

Freeze-drying, also known as lyophilization, **is a dehydration process typically used to preserve a perishable material or make the material more convenient for transport.**

For example, powdered milk or dried milk is a manufactured dairy product made by evaporating milk to get dry milk powder.

Freeze-drying works by freezing the material and then reducing the surrounding pressure to allow the frozen water in the material to sublime, that is the transition of a substance directly from the solid to the gas phase without passing through an intermediate liquid phase.

 Pharmaceutical companies often use freeze-drying to increase the shelf life of the products, such as vaccines and other injectables. By removing the water from the material and sealing the material in a vial, the material can be easily stored, shipped, and later reconstituted to its original form for injection or infusion.