

# LAB INFORMATION

## Machine Room



**ADINA Institute of Pharmaceutical Sciences, Sagar (M.P)**

An ISO 9001:2000 Certified Institute

Opposite J L Nehru Agricultural Research Center (Bamhori Seed Farm) Bhopal Road Sagar, M. P.

Approved by PCI & AICTE, New Delhi, Affiliated to RGPV, Bhopal, Recognized by DTE & M. P. Govt.

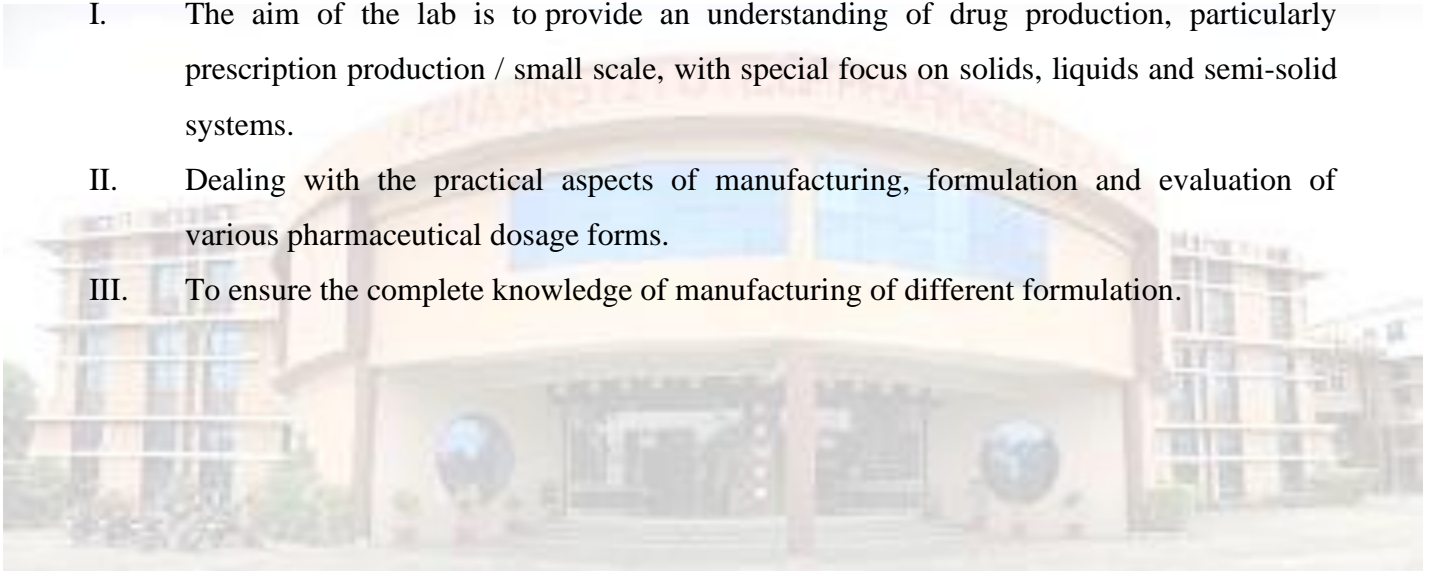
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## **Machine Room**

The Adina institute of pharmaceutical sciences is college of pharmacy having a well settled machine room containing various machines required for various unit operations simulating with pharmaceutical industry unit operations. The machine room is provided with 24 h stabilized electric power supply system. each machine has separate platform with standard operating procedure, log book, standard cleaning procedure and calibration or validation and operation manual.

### **OBJECTIVES**

- I. The aim of the lab is to provide an understanding of drug production, particularly prescription production / small scale, with special focus on solids, liquids and semi-solid systems.
- II. Dealing with the practical aspects of manufacturing, formulation and evaluation of various pharmaceutical dosage forms.
- III. To ensure the complete knowledge of manufacturing of different formulation.



MACHINE ROOM



## FACULTY

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## LIST OF INSTRUMENTS

S. No.	Name of instrument	Make	Model	Quantity
1.	Tablet coating Machine	Nil	Nil	1
2.	Ball Mill	Rolex	Nil	1
3.	Double Cone Blender	Nil	Nil	1
4.	Tablet Punching Machine	Lab tech	Nil	1
5.	Capsule Filling Machine	Nil	Nil	1
6.	Ampoule Washing Machine	Nil	Nil	1
7.	Clarity Test Apparatus	Jayco	Nil	1
8.	Tray Dryer	Universal	Nil	1
9.	Capsule Counter	Nil	Nil	1

## Tablet coating Machine



Tablet coating machine is the mechanical device that apply an essentially dry, thin layer of coating material to the surface of tablet dosage forms in order to confer specific benefits over uncoated variety. It is an equipment that coats the outer surface of tablet with a thin layer of coating material:

- To mask the taste, odour, and colour of the drug.
- To provide physical and chemical protection for the drug.
- To prevent decomposition of drugs sensitive to air (oxygen), light, or humidity.
- To minimize the unpleasant taste of certain drugs that may come during partial dissolution of the drug in buccal fluids during absorption.

## Ball Mill



A ball mill is a type of grinder used to grind or blend materials for use in mineral dressing processes, paints, pyrotechnics, ceramics, and selective laser sintering. It works on the principle of impact and attrition: size reduction is done by impact as the balls drop from near the top of the shell. It is a mechanical technique widely used to grind powders into fine particles and blend materials. Being an environmentally-friendly, cost-effective technique, it has found wide application in industry all over the world. A ball mill consists of a hollow cylindrical shell rotating about its axis. The axis of the shell may be either horizontal or at a small angle to the horizontal. It is partially filled with balls. The grinding media are the balls, which may be made of steel (chrome steel), stainless steel, ceramic, or rubber. The inner surface of the cylindrical shell is usually lined with an abrasion-resistant material such as manganese steel or rubber lining. Less wear takes place in rubber lined mills. The length of the mill is approximately equal to its diameter.

## Double Cone Blender



A double cone blender is a type of mixer that you can use to produce a homogenous solid mixture. Mixing is a complex process step in manufacturing products for different industries. These industries include food, healthcare, chemicals, detergents, cosmetics, plastics, and fertilizers. Double Cone Blender is an efficient and versatile machine for mixing of dry powders and granules homogeneously.

All the contact parts are made of stainless steel. The effective volume for optimum homogeneity is between 35-70% of gross volume. The SLANT double cone design eliminates dead spots. The conical shape at both ends enables uniform mixing and easy discharge. The cone is statically balanced which protects the gear box and motor from any excessive load. Powder is loaded into the cone through a wide opening and discharged through a butterfly or a Slide valve.



## Tablet Punching Machine



Single punch tablet press also called eccentric press or single station press is the simplest machine for tablet manufacturing. Single punch tablet as the name implies employ single set of station tooling that is a die and a pair of upper and lower punches.

The compaction force on the fill material is exerted by only the upper punch while the lower punch is static; such action equivalent to hammering motion and as a result, the single punch press is referred to as stamping process. The single punch tablet press produces about 60-85 tablets/min.

## Capsule Filling Machine



The machine is best suited for small to medium batch size production requirements and a wide range of products can be made using this process. The manual capsule filler is able to fill and close hard gelatin capsules containing powders and granules.

Capsule filling machines are an automatic device that has been propelling various industries such as pharmaceuticals, cosmetics, and food industry, etc. for years. Encapsulators or capsule fillers are put on work to fill empty capsules made of gelatin with powders, granules, semi-solids, liquids substances, etc. These ingredients comprise API or active pharmaceutical ingredients or a mixture of active drug substances and excipients. Thus, this whole process of filling in the empty capsules is often termed as Encapsulation.

## Clarity Test Apparatus



Clarity test apparatus is a apparatus used to check the clarity of ampoules, solutions and other pharmaceuticals. Black & white screen fitted on a base board with light arrangement. An adjustable side-arm has been provided with clamp for holding a magnifier for easy and magnified viewing during process. A proper light source is needed for clear visualization of the particles in the ampoules, solutions and other pharmaceuticals against the white and black background.

## Tray Dryer



Tray dryer is widely used for material drying in pharmaceutical manufacturing. Its drying process is based on circulation of hot air through the chamber having material. Tray Dryer is used for the best drying results in conventional process. It is a double walled cabinet with Single or Two doors. The gap between two walls is filled with high density fiber glass wool insulation material to avoid heat transfer. Doors are provided with gaskets. Stainless steel trays are placed on the movable trolleys. Tray Dryer is provided with control panel board, process timer, Digital temperature controller cum indicator etc.