



Uka Tarsadiya University

Maliba Pharmacy College

Report on Industrial Visit to Shri Harikrishna Pharmaceutical Pvt. Ltd. - Ahmedabad

Date of visit	7 April 2026, Saturday
Place of visit	Shri Harikrishna Pharmaceutical Pvt. Ltd. - Ahmedabad -380001
Coordinator from college	Dr. Sandesh Lodha
Approval by	Dr. Ashish D Mishra, Principal
Participating students	3 students of M.Pharm 4th semester
Accompanying faculty member	Dr. Sandesh Lodha, Dr. Shrikant Nilewar
Coordinators from industries	Dr. Sandesh Lodha.



Objective of the Visit

The main objective of the industrial visit to **Shri Harikrishna Pharmaceutical Pvt. Ltd.** was to gain practical exposure to **Active Pharmaceutical Ingredient (API) manufacturing**, quality control systems, and industrial-scale chemical processes.

Students aimed to understand:

- Bulk drug synthesis and reaction handling
- Industrial equipment used in API production
- Quality control and quality assurance practices
- Implementation of **Good Manufacturing Practices (GMP)**
- Micro testing labs
- Safety protocols and waste management

The visit helped bridge the gap between theoretical pharmaceutical chemistry and real industrial production environments.

Program Outline

The visit started with an introduction to the company's operations, focusing on bulk drug/API manufacturing. The industrial experts explained the complete production workflow, including:

- Raw material procurement and storage
- Batch processing in reactors
- Filtration, drying, and purification
- Final product packaging

Students were guided through different departments:

- Production Unit
- Quality Control (QC) Laboratory
- Quality Assurance (QA) Laboratory
- Research & Development (R&D) Lab
- Warehouse and storage areas

Equipment Observed

1. Reaction Vessels (Reactors)

- Used for **large-scale chemical synthesis of APIs**
- Both **glass-lined reactors (GLR)** and **stainless steel (SS 316L) reactors** were observed
- Equipped with:
 - Agitators for proper mixing
 - Temperature control systems (heating/cooling jackets)
 - Pressure control systems
- Provide controlled conditions for safe and efficient reactions

2. Centrifuge

- Used for **separation of solid and liquid phases**
- Helps in **isolation of intermediates and final products**
- Works on centrifugal force principle

3. Filtration Units (Nutsche Filter)

- Used for **solid-liquid separation and purification**
- Enables filtration and washing of product
- Important for removal of impurities

4. Drying Equipment

- **Tray Dryer:** Conventional drying using hot air
- **Rotary Vacuum Dryer (RVD):** Drying under reduced pressure for heat-sensitive compounds
- **Fluid Bed Dryer (FBD):** Provides rapid and uniform drying using fluidization
- **Cone Dryer (Double Cone Dryer):** Ensures gentle and uniform drying under vacuum
Used to **remove moisture from final API**

5. Storage Tanks

- Used for **storage of solvents and raw materials**
- Made of **SS 316L stainless steel**
- Maintained under controlled environmental conditions

6. Autoclave

- Used for **sterilization of equipment and materials**
- Operates using **high-pressure steam**
- Ensures microbial-free processing conditions

7. Oil Bath / Heating System

- Used for **uniform heating of reactors**
- Maintains controlled temperature during reactions
- Suitable for high-temperature processes

8. Rotary Evaporator (Rota Evaporator)

- Used for **evaporation and recovery of solvents**
- Operates under **reduced pressure (vacuum)**
- Prevents thermal degradation of compounds

9. Pumps

- Used for **transfer of liquids, solvents, and reaction mixtures**
- Types observed:
 - Centrifugal pumps
 - Vacuum pumps
- Essential for smooth and continuous processing

10. Cooling System (Chilling Plant & Cooling Tower)

Chilling Plant

- Provides **chilled water or coolant**
- Used for:
 - Maintaining low reaction temperatures
 - Condensation processes

Cooling Tower

- Removes heat from circulating water
- Supplies cooling water to:
 - Reactors
 - Condensers

Water Usage

- Cooling water used in **heat exchangers and condensers**
- Helps in maintaining proper process temperature

11. Water Purification Equipment

- Water is a critical utility in pharmaceutical industries used for **cleaning, processing, and laboratory purposes**
- The system ensures water quality as per **GMP standards**

11.1 Raw Water Treatment System

- Removes **suspended particles, dirt, and turbidity**
- Methods used:
 - Sand filtration
 - Activated carbon filtration

11.2 Water Softener

- Removes **hardness (Ca^{2+} and Mg^{2+} ions)**
- Prevents scaling in pipelines and equipment
- Works on **ion-exchange principle**

11.3 Reverse Osmosis (RO) System

- Major purification step
- Removes:
 - Dissolved salts
 - Microorganisms
 - Organic impurities
- Uses **semi-permeable membrane under pressure**

11.4 Deionization (DI) Unit

- Removes remaining ionic impurities
- Produces **high-purity water**
- Uses **cation and anion exchange resins**

11.5 UV Treatment

- Used for **microbial control**
- UV radiation destroys bacteria and microorganisms
- No chemical addition required

11.6 Water Storage Tank

- Purified water stored in **SS 316L tanks**
- Designed to prevent contamination
- Properly sealed and maintained

11.7 Distribution System

- Water circulated through **SS 316L pipelines**
- Continuous circulation prevents microbial growth
- Maintains hygienic conditions

Learning Outcomes

- Gained understanding of large-scale API manufacturing processes
- Learned complete process flow: reaction → filtration → drying → packaging
- Understood working of reactors (GLR and SS 316L)
- Learned operation of centrifuge and Nutsche filter for separation and purification
- Gained knowledge of drying equipment (Tray dryer, RVD, FBD, cone dryer)
- Understood the role of pumps in fluid transfer
- Learned use of HPLC, GC, FTIR, and UV instruments in quality control
- Understood importance of SS 316L in preventing contamination
- Gained knowledge of water purification system (RO, DI, UV)
- Learned about cooling systems (chilling plant and cooling tower)
- Understood GMP guidelines and safety practices (PPE, clean environment)
- Gained exposure to industrial-scale equipment and operations
- Learned about process optimization and R&D activities
- Understood basics of pharmaceutical business and production scale (~₹100 crore)
- Improved understanding of real industrial working environment

Some of the glimpse from the visit:



Group photos of students at Shri Harikrishna Pharmaceutical Pvt. Ltd. while giving token of thanks to Dr. Bhavesh Thumber and Team

Acknowledgments

We would like to express our sincere gratitude to **Dr. Bhavesh Thnumber and the entire team of Shri Hari Krishna Pharmaceutical Pvt. Ltd.** for giving us the opportunity to visit their organization and for sharing their valuable knowledge and guidance during the industrial visit.

We are also highly thankful to our faculty members **Dr. Sandesh R. Lodha** and **Dr. Shrikant Nilewar** for their continuous support and guidance throughout the visit.

We extend our gratitude to our respected Principal **Dr. Ashish D. Mishra** for granting permission to organize this industrial visit.

Their support and encouragement made this visit informative and beneficial for all the students.

Conclusion: The industrial visit to Shri Harikrishna Pharmaceutical Pvt. Ltd. was informative and enhanced our understanding of API manufacturing, equipment, and quality control. It helped bridge the gap between theoretical knowledge and practical industrial applications.

Prepared by: M.Pharm P'Chem Batch 2024-2026

Verified by: Dr. Pintu Prajapati

