



Project Report: Pharmaceutical Plant Construction

1. Executive Summary

The proposed project involves constructing a modern pharmaceutical manufacturing facility to produce high-quality medicines while adhering to Good Manufacturing Practices (GMP).

Objectives: - Establish a facility with production capacity of 1,00,000 units/year. - Comply with GLP, GMP, FDA, and local regulatory standards. - Incorporate advanced automation and quality control systems. - Achieve sustainable and energy-efficient operations with introduction of various utility systems which serve as a heart of the Project System.

2. Project Background

The global pharmaceutical industry is expanding, and Sekhmat Pharma Ventures aims to meet growing demands for quality API based drugs such as Gabapentin and Valproic Acid used for treating central nervous disorder and other mental disorders. Current production facilities are insufficient, necessitating a new and improvised plant. **Rationale:** - Growing demand in domestic and international markets - Need for upgraded technology to improve efficiency and quality - Compliance with stringent regulatory standards.

3. Project Scope

Scope Includes: - Construction of production blocks for tablets, capsules, injectables, and liquids - Installation of clean rooms, laboratories, and quality control units - Utility services: water purification, HVAC, power supply - Administrative and support facilities

Scope Excludes: - Marketing and distribution activities - External infrastructure beyond the plant premises

Investor Approvals - Understanding the financial constraints within the Plant Productions, Evaluate production requisites, understand the demand of the Product in the upcoming years framed strategies to identify necessary return backs of the Production from the expanded

Project to seek approvals and authorizations from Investors.

4. Project Location

- **Site:** 85 -88 ,105 -106 ,115 -116 SIPCOT Industrial Estate ,EPIP Park , Gummidipoondi - 601201
- **Land Area:** 30 Acres
- **Accessibility:** Proximity to highways, ports, and railway facilities ,being present inbetween state borders of Andhra Pradesh and Tamilnadu
- **Utilities Availability:** Water, electricity,biogas etc

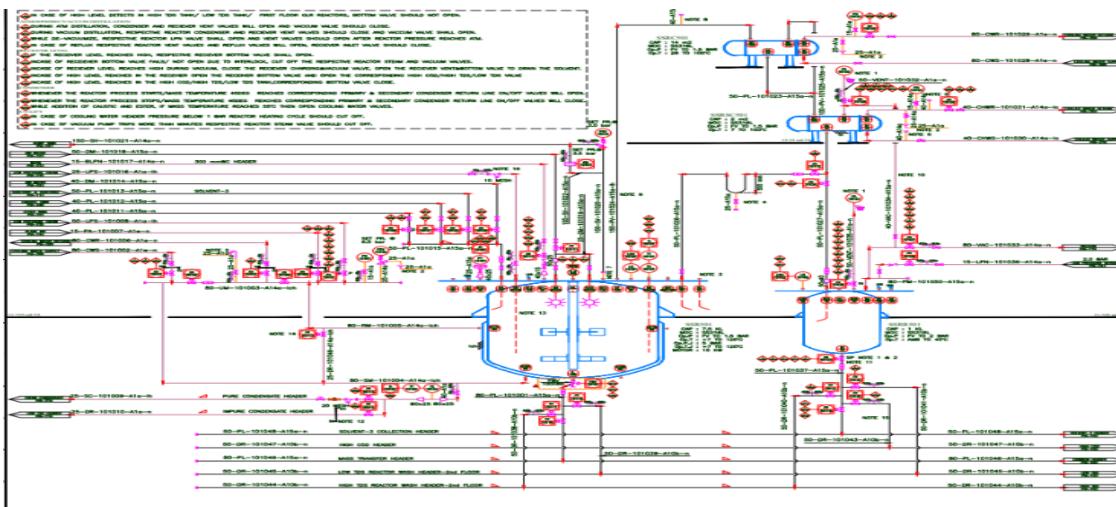
5. Project Design & Layout

Plant Layout Overview: - Raw Material Storage , Hazardous Waste Storage , Water Stoage , Over head Tanks , Effluent Storage , Production blocks (tablets, injectables, liquids) - Packaging and labeling area - Quality control laboratories - Utilities (WFI, HVAC, power supply, effluent treatment) - Administrative and warehouse blocks

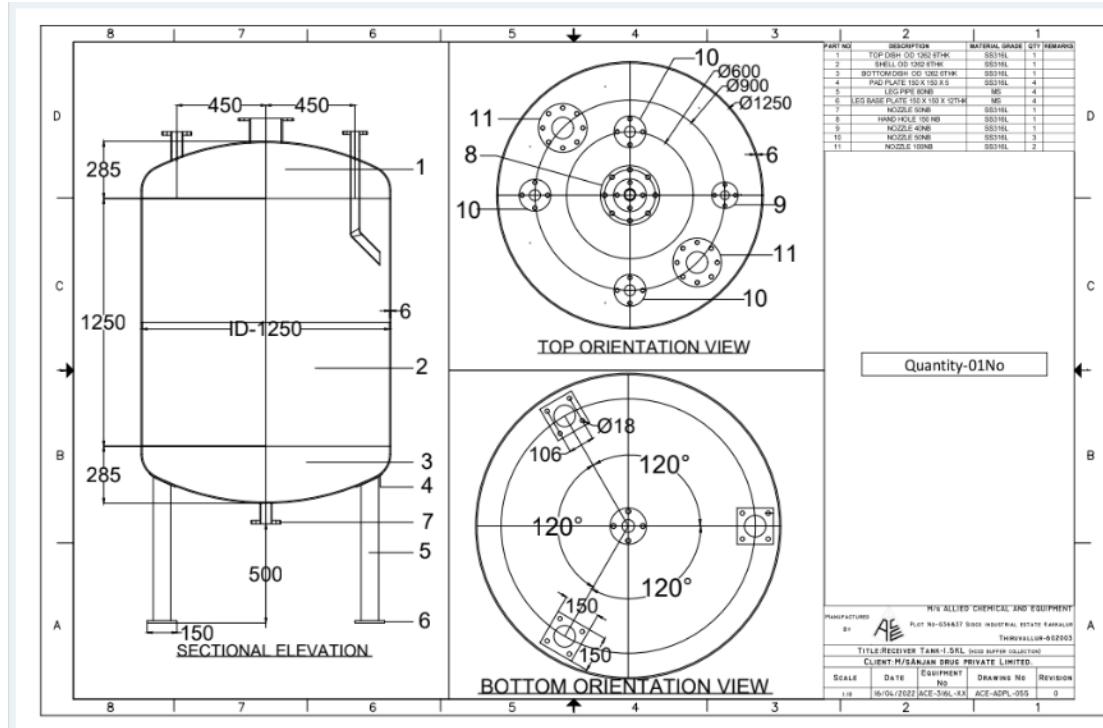
Design Considerations: - GMP-compliant workflow - Segregation of production areas - Efficient material and personnel flow

P&ID Layout:

A screen shot describing the various Piping & Instrumentation diagram being designed and authorized for various intermediate Plant Processes from the initial stage to final completion

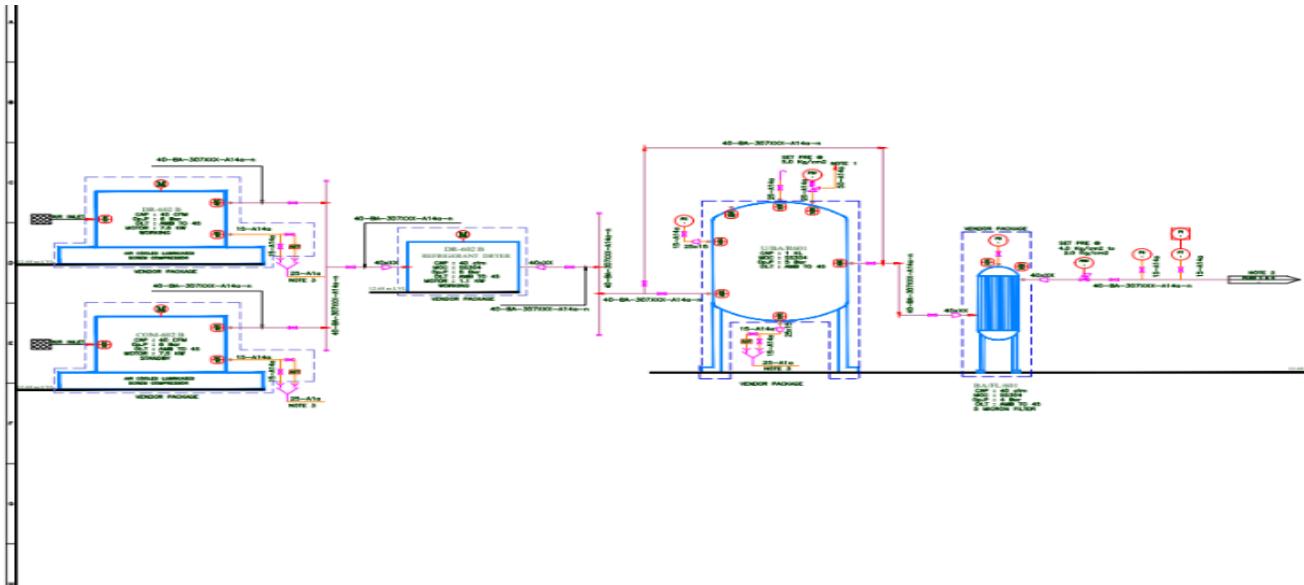


The above P&ID describes the initial stage of Reactor Erection Along with various Valves , Pressure Traps , Primary and Secondary Condensers being channeled through Pipes consisting of Gauges , Steam Traps, valve fixtures to fix valves . Reactors used have different MOC of SS , MS and CS etc . Each Erection required different tecnicas based on the MOC of the Process equipments successively .



A tank layout of MOC of MS (Mild Steel) is first designed manually as rough sketch or taken in accordance with the benchmarks of the previous identical consumable being used . This tank is then studied along for the Jigs and fixtures development for the plant setup , So that there will be no disruption during erection after Tank consumables being reached at the site thereby reducing time schedules in the Plant erection & commissioning successively.

Sometimes based on the Project description , The Utility consumables are designed and send to vendors for quotations and proposals . Feasible market study is being done backgrounds of vendors are checked before commencing procurement stages successively .



The above image describes the typical Plant layout of Nitrogen Plant , which is first roughly sketched then after doing so conducted feasibility and emepeirical studies . FEA analysis is been done later such rough sketch is transferred to digital Plant layouts through Auto CAD to form P&ID successively . This particular image is being transferred to Purchase team to initiate Procurement activities successfully .

40 NM ³				
Technical Comparison		Nitrogen Engineers	NOX Air	Sam Gas
S.no	Technica Specifications			
1	Capacity	40 NM ³ /Hr	40 NM ³ /Hr	40 NM ³ /Hr
2	Composition			
	Oxygen	< 0.1 %	0.10%	≤ 0.1 %
	Nitrogen	99.90%	Balance	99.90%
3	Type	PSA	PSA	PSA with PLC based Automatic Operations
4	MOC			
	Pressure Vessel	IS2062	IS2062	IS2062
	Surge	IS2062	IS2062	IS2062
	Storage Tank	IS2062	IS2062	IS2062
	Interconnecting Pipe Line	SA -106 Gr.B	IS 1239 Class C ERW	SS -304
	Flanges Used	ASME B16.5 Class 150 # RF	NA	NA
	Base Frame Mounting	Complete Unit Mounted on Steel Base	Complete Unit Mounted on Steel Base	NA
5	Air Pressure			
	Inlet Air Pressure	7.5 Kg / cm ² g	7.0 -7.5Kg/cm ² g	7.0 -7.5Kg/cm ² g
	Outlet Nitrogen Pressure	6.0 Kg/ cm ² g	6.0 Kg/cm ²	6.0 Kg/cm ²
6	Filter			
	Type	Carbon Molecular Seives	4 Stage Filtration Unit along with Activated Charcoal Filter	4 Stage Filtration Unit along with Activated Charcoal Filter
	Working Pressure	10.0 Bar Max	8.0 Bar Max	10.0 Bar Ma
	Inlet Air Filter	Pre Filter < 1 μ , Oil Filter < 0.01 μ	Coalescent Filter of 1 Microns	Coalescent Filter of 1 Microns

Comparisons being done after getting primary requirement collected through calculations done by engineering and R&D team successively . These comparisons are framed after collecting informations from typical vendors after market analysis done individually on them seperately

Every Data is then entered through excel and comparison sheet is framed upon . All technical informations being collected , comparisons are done both technically and Financialy there by matching the requirements from Endusers and matching the Project budget individually.

Original for Recipient														
BULK DRUGS  A D P L ANJAN DRUG PRIVATE LIMITED Corp. Office: # 5th Floor, Nelson Towers II Wing, 117 Nelson Manickam Road, Aminjikarai, Chennai - 600029. Tamil Nadu, India. CAPEX-PURCHASE ORDER														
PO Number : CXP/G/2122/2115041 PO Date : 26/10/2021 PR No. : 2176519 State : Tamil Nadu State Code: 33					Vendor Ref. : SAM/RB/ANJAN/1229/Rev-01 dt-2.10.21 Concat Person: DEEPAK CHANDRA Contact No. : 0120-2761034 9560196073 Fax Number :									
Billing and Delivery Address : Name : Anjan Drug Private Limited Address : Plot No. 85-88, 105-109 & 112-116, SIPCOT Industrial Park(PIP)Gummidipoondi - 601 201, Thiruvallur District, Tamil Nadu, India.					Supplier Name & Address : Name : Sam Gas Projects (P) Limited Address : Upside Industrial Area , Near Mehrauli Railway Station Nh-24 Ghaziabad - 201015. Uttar Pradesh, India.									
GSTIN : 33AACAS516BN1ZJ State : Tamil Nadu State Code: 33					GSTIN : 09AAICS5733M1ZR State : Uttar Pradesh State Code: 09									
Please supply the following goods as per our approved specifications. Please Note: 1. Quote our Purchase Order No & Date in all your communications. 2. Send your Bill in Duplicate to Our Corp. Office Address.														
#	Product Name	HSN/SAC	Qty.	UoM	Price INR	Disc. %	Taxable Value INR	IGST Rate %	IGST Amount	CGST Rate %	CGST Amount	SGST Rate %	SGST Amount	Total INR
1	Nitrogen Generator Plant 40 m3 with all accessories PSA Nitrogen gas plant of capacity 40 NM ³ /hr WITH purity 99.9% (i.e. Oxygen < 0.1%) as per technical Specifications and scope of supplies mentioned herein along with Online Percent	000000	1.000	Nos	1675000.00		1,675,000	18.00	301500.00					1,976,500

A screen capture Purchased order generated through SAP PP software which is drafted proffessionally through mail to external vendor successively . Payments is processed after confirmation from Vendor . Later on site delivery , inspection and FAT tests are been processed thoroughly . There by designated team is arranged for site clearance and spacings are fixated through premesis for Equipment arrival and installations successively .



Red Gravel sand , Land being firmed and settled before Pharma Plant Construction (Pict Taken 09-10-2025)

The general area of that near by premisses is usually found to be Costal area region with clay soil suitable for high rise erection & commissioning with structures and columns useful for in-depth excavation . At initial stage land is been cleared , soil is been firmly settled as shown , debris being removed and cornered to particular locations Fencing is been done which serves as a barrier for segregation of active Plant which could disrupt Plant from production activities



Reactor Erection Along with Utilites such as Motor , Storage Tanks , Valves , Condensers along with intermediate floor (Pict taken 12-2-2023)

A Sample Plant layout describing the 70 percent completion of the Project being at the final stage of Process equipment erection and commissioning and being connected to the all the Utility equipments such as Pumps , Valves , Storage tanks , Safety rails being installed around the open chamber left for the Distillation Column erection .

:6. Project Schedule

Phase	Duration	Key Activities
Planning & Approval	2 months	Regulatory approvals, design finalization
Site Development	3 months	Land clearing, leveling, fencing , Plan approval ,site evaluation
Civil Construction	20 months	Building structures, clean rooms,Plumbings and Water resources
Utility Construction	6 months	HVAC, utilities, equipment installation
Commissioning & Validation	3 months	Testing, General Testing , Regulatory inspection
Commercial Production	-2 months	Trail production and batch evaluation
Total Duration: 36 months		

7. Project Cost Estimate

Component	Cost in Crores INR
Land Acquisition	50
Civil Construction	30
Equipment & Machinery	28
Utilities & Services	15
Automation & IT	10
Contingency (10%)	5
Total	138

Funding Sources: - Internal resources: 10% - Bank loans: 50% - Investors: 40%

8. Regulatory & Compliance Requirements

- WHO-GMP and ISO 9001 certification
- National regulatory authority approvals (FDA, CDSCO)
- Environmental clearance
- Occupational health and safety compliance (OHSAS)



9. Risk Analysis

Risk	Mitigation Measures
Delay in approvals	Early engagement with authorities
Budget overrun	Detailed cost estimation, contingency fund
Vendor delays	Pre-order critical machinery
Environmental compliance issues	Continuous monitoring and audits
Workforce shortage	Recruitment plan & training programs

10. Project Benefits

- Increased production capacity and revenue
- Compliance with international quality standards
- Job creation
- Enhanced corporate image
- Future expansion potential

11. Conclusion

The pharmaceutical plant construction project is a strategic investment to meet market demand, maintain high quality, and enhance operational efficiency. Careful planning, regulatory compliance, and effective risk management will ensure a successful, sustainable, and profitable facility.