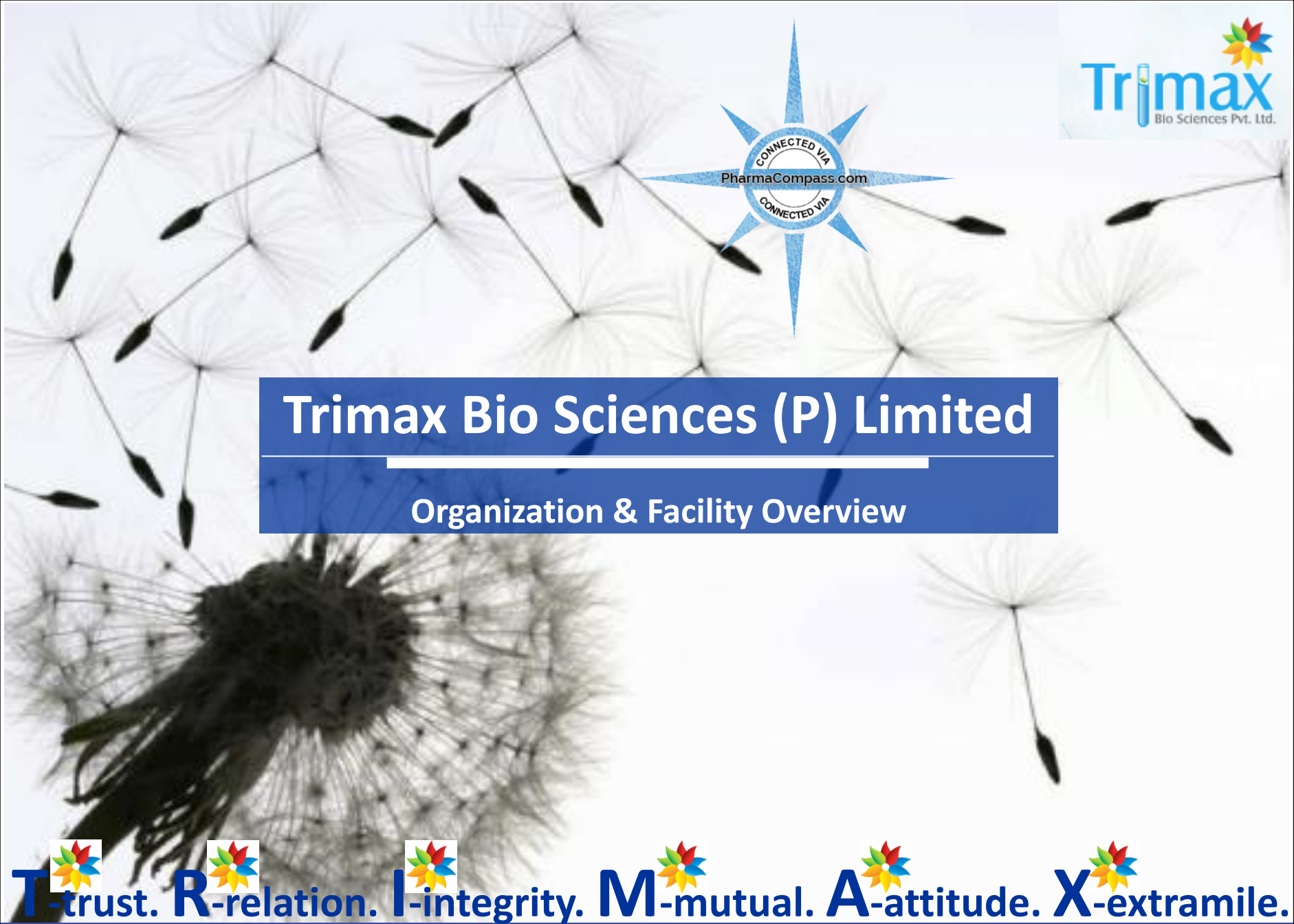


Trimax Bio Sciences (P) Limited

Organization & Facility Overview

T-trust. **R**-relation. **I**-integrity. **M**-mutual. **A**-attitude. **X**-extramile.

Contents

Introduction

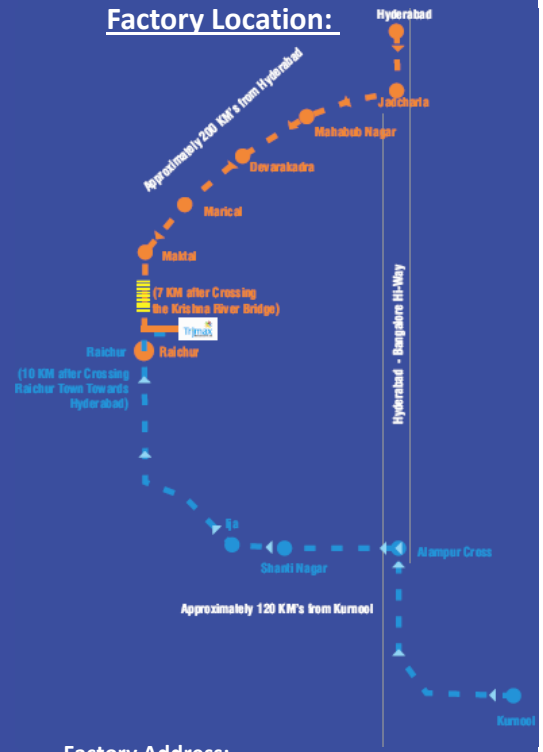
With a Thought to Build a Better Society with Better Pharmaceutical Products, Trimax Biosciences Pvt. Ltd. has been Conceived to Manufacture Pharmaceutical Intermediates and Active Pharmaceutical Ingredients with Production Capacity about 400 tons per Annum with a Capital Cost of Rs.47 Crores (~8 Million USD) at Raichur Industrial Estate.

R&D is the Foundation of our Success in Bringing New Products to Market. Highly-Skilled Scientists are Part of our Team and they Work Towards the Discovery, Design of Novel & Effective Pharmaceutical Agents, Processes and Technologies.

And so, we Wish to be a Leading Pharmaceutical Company in Healthcare and Significant Global Player at Reasonable Price. Therefore with an Edge in Scientific Expertise to Develop New and Improved Products , Product Line Extensions, Manufacturing Technology, Expertise and Infrastructure, we at Trimax Wish to Bring to Build a Healthy World.

Trimax - Life Line Needs

Factory Location:



Factory Address:
Plot No. 27, Raichur Growth Centre,
Chicksugur, Wadloor Road,
Raichur - 584134, Karnataka,
Ph: +91 8722739999, +91 8095967999.

Reg. Office:
Flat no. 305, B Block, NCL Godavari,
Petbasheerabad, Jeedimetla Village,
Hyderabad - 500055.,Andhra Pradesh,
Ph: +91 40 27230381,+91 9293951555.

e-mail: trimaxbiosciences@gmail.com

Board of Directors

Technical Operations

Dr. K. Nageswara Rao (Dr KN).
Aged 48 years, M.Sc & PhD in Chemistry having 20 years of Experience in R&D of Pharmaceutical Bulk Drug Industries. Associated with Mylan, Matrix, Veera Labs and GITAM University. He is Leading the Organization as Director for Research & Development, IPR and Corporate Affairs.

Mr. K. Ramesh Babu.
Aged 48 years, B.Sc in Chemistry having 26 years of Experience in Manufacturing of Pharmaceutical Bulk Drug Industries. Associated with Dr.Reddy's (Globe Organics & Cheminar), Saraca Labs, Symed Labs and Rachem. He is Leading the Organization as Director for Manufacturing & Operations.

Mr. Y. Suresh Babu.
Aged 45 years, M.Sc in Chemistry having 21 years of Experience in Quality Control & Assurance of Pharmaceutical Bulk Drug Industries. Associated with Mylan, Matrix, Vorin Labs, Divis and Natco. He is Leading the Organization as Director for Quality & Regulatory Affairs.

Mr. Vikram Vanama.
Aged 36 years, M.Tech in Chemical Engg from IIT Chennai having 14 years of Experience in Plant Engineering, Technology Transfer and R&D of Pharmaceutical Bulk Drug Industries. Associated with Mylan, Matrix and Saraca Labs. He is Leading the Organization as Director for Technology Support & Business Development.

Support Operations

Mr. Ch. Murali Krishna.
Aged 42 years, Electronics Engineer having 22 years of Experience in Business Planning, Bidding, Feasibility Studies, Project Management, Design of Mobile Telecom Networks. Associated with Saudi Telecom, LCC, Marconi, MSI, France Telecom, Etisalat, TATA & RPG Groups. He is Leading the Organization as Chairman of the Board.

Mrs. K. Jagadeeswari.
Aged 40 years, M.Sc in Mathematics having 6 years of Experience as Managing Director in Agri Infrastructure Business (Cold Storages). She is Associating the Organization as Managing Director.

Mrs. Ch. Usha Rani.
Aged 33 years, B.A in Mathematics having 6 years of Experience as Director in Agri Infrastructure Business (Cold Storages). She is Associating the Organization as Promoter Director.

Organization Overview

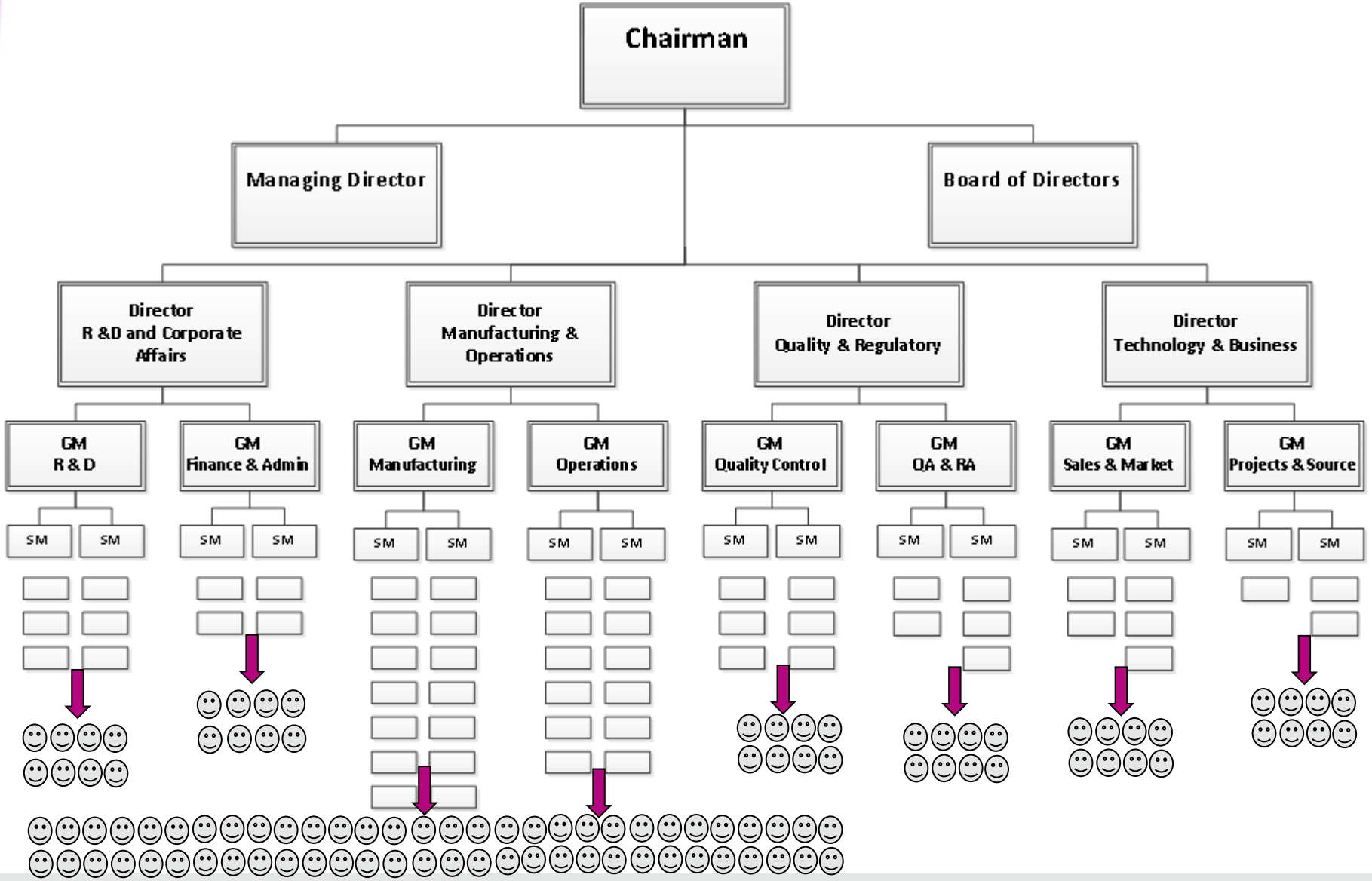
Organization & Facility Goals

1 Vision	▪ To be Leading Company in Healthcare & Significant Global Player. Aiming to Strengthen Business Partnerships in Development, Product Supply & Marketing by adopting Corporate Culture and Sharing Expertise, Technology & Infrastructure.
2 Mission	▪ Human Resources are Most Valuable Asset to Drive our Growth. We Committed for Customer Satisfaction by Products, Services, Technology and World Class R & D Facilities. We Aim to Grow as Good Corporate Citizens by adopting High Ethical Standards in our Practices.
3 Quality Policy	▪ Committed Individually & Collectively to Guarantee Quality, Safety & Efficacy of Medicinal Products. Our Infrastructure & Procedures will support a Stringent Quality to Maintain Public Health, Customer Policies and Safe Working Environment for our Resources.
4 Environmnt Policy	▪ Will have Regular Reviews for Continuous Improvement in Targets of Energy Resources Conservation, Waste Reduction, Recycling & Chemical Management. We will Ensure Guidelines of EC, PCB to take care and Protect the Environment for Future Generations.
5 Health Policy	▪ We Aim at Ensuring that People get Good Quality Drugs at the Lowest Possible Price. We Ensure Health, Safety and Wellbeing (HS&W) as Integral part of our Business and is Actively Supported through Management Leadership and Commitment.
6 Safety Policy	▪ We will Provide and Maintain a Safe & Healthy Work Environment at par with Industry Standards & Legislative Requirements and Strive to Eliminate any Foreseeable Hazards to Safe Guard Human Life. Committed for Accident-free Workplace by Extensive Trainings and Achieve our goal.“No One Gets Hurt”

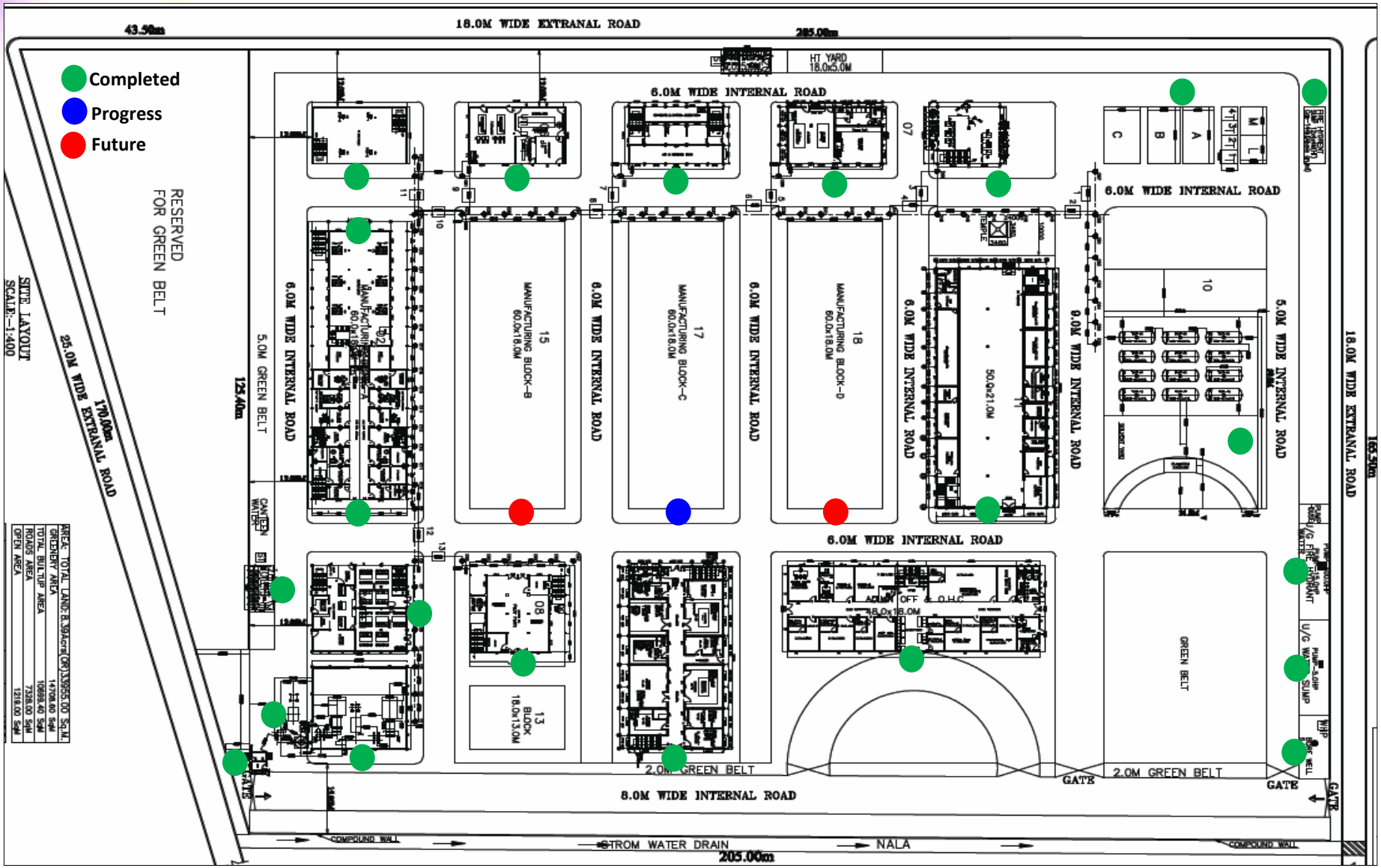
Organization & Facility Briefs

7 Team	▪ Established by Well Qualified and Highly Skilled Young Generation Entrepreneurs. ▪ Dedicated, Committed and Hardworking Nature.
8 Project Overview	▪ Built-up Area of 19,500 Sq Meters.(Civil Completed). ▪ Facility Area of 8.39 Acres (33,955 Sq Meters). ▪ Project Cost of Rs 48 Crores. (~ 8 Million USD) ▪ Supporting Infrastructure, Related Licenses and Permissions Obtained for Future Expansion.
9 Location Facts	▪ Located in Raichur which is 180 Km from Hyderbad. ▪ Inside Chemical Zone of Industrial Area Surrounded by Bulk Drug Companies (Shilpa Medicare & Raichem). ▪ No Power Cuts, Plenty of Water & Human Resources, Connected with Road, Rail and Air Transport.
10 Staffing	▪ Proposed Manpower of 230 Resources. ▪ 10 Resources in Senior Management. ▪ 5 Resources in Key Technical Roles. ▪ 100 Resources in Technical & Admin Support. ▪ 115 Resources in Works and Security Areas.
11 Strengths	▪ Very Good Research and Development Facilities. ▪ Latest Equipment in Quality Control Lab. ▪ Massive Infrastructure & Utmost Safety Environment. ▪ High Skilled Technical & Management Staff.
12 Social Responsible	▪ We Focus Business to Promote Public Interest by Encouraging Community Growth & Development and Voluntarily Eliminating Practices that Harm Public Sphere regardless of Legality & Essentially. We will Honor Triple Bottom Line.“People, Planet, Profit”

Organization Chart



Infrastructure (Plan Overview)



Infrastructure (Current Status)

Site Overview

Existing Infrastructure		
S.No	Name of the Existing Facility	Area Sq.Ft
1	Manufacture-1 (Main Production Area)	30,000
2	Manufacture-5 (Pilot Scale Production)	10,000
3	Manufacture-6 (Hydrogenation Block)	3,000
4	Quality Control (Innovation Block GF)	7,400
5	Research & Development (Innovation Block FF)	7,600
6	Solvent Recovery Block	11,625
7	Ware House	23,000
8	Administration Office	24,000
9	Power House	4,700
10	Utility-1	5,000
11	Utility-2	800
12	Boiler House	4,650
13	Canteen	3,500
14	Quality Assurance	3,500
15	Multiple Effect Evaporator	6,200
16	Fire Hydrant	1,100
17	Solvent Storage	7,000
18	Purified Water System	2,100
19	Microbiology Lab	1,750
20	Security & Visitors	1,000
22	ETP Tanks	3,000
23	Manufacture-3 (Main Production Area)	30,000
24	Automatic Hush & Ash Handling Area	2,400
	Total Facility Builtup Area Sq.Ft (As of Now)	193,325

Facilities & Equipments – Manufacture-1

Manufacturing -1 Overview	Intermediate Area	Pharma Area
		

1 Description

- Named as "**Dr Suzuki"** Manufacturing Facility who is Inventor of Suzuki reaction, the organic reaction of an aryl- or vinyl-boronic acid with an aryl- or vinyl-halide catalyzed by a palladium (0) complex & Noble Prize Winner in 2010
- Intermediate Area of 15,750 Sq Ft.
- 2 Pharma Areas Each of 3,350 Sq Ft for API with GMP Facilities.
- Utility Area 7,550 Sq Ft (AHU, Electrical Panel , Cooling towers , Vacuum Pumps)

2 Equipments

- SS Reactors Qty of 16 No.s (0.25KL ~ 5KL). Glass lined Reactors Qty of 7 No.s (1.6KL ~ 4KL).
- Heat Exchangers, (SS316 to SS Reactors, Graphite Condensers to GL Reactors).
- Centrifuges Qty 8 No.s (SS316 36 inch – 48 inch, SS316 Halar lined 36 inch – 48 inch)
- Drying (Tray Driers 4 No.s, Vacuum Tray Driers 2 No.s, Rota Cone Vacuum Driers 2 No.s)

3 Capacities & Features

- SS Reactor Volumes – 39.25 KL
- GLR Reactor Volumes.- 18.2 KL
- SS Reactors equipped with various agitators – Anchor, Pitched blade turbine, Disc Turbine, Super Impeller to suit different process applications and variable frequency drives . All reactors provided with primary heat exchanger followed by secondary heat exchangers
- Glass lined reactors (GLR) procured from GMM with Agitators – Anchor ,Curved blade turbine . Accurate temp sensing with tantalum tip, Equipment designed to provide minimum liquid stirring and temperature sensing. All GLR's provided with Graphite condensers
- Centrifuge equipment has all safety features – vibration switch, variable frequency drive, Inert nitrogen purging, hydraulic full body opening, door interlock
- Dryers will meet the different process requirements

Facilities & Equipments – Manufacture-1

S.No	Name of the Equipment	Quantity
Intermediate Manufacturing Facility		
1	Glass Lined Reactor - 4.0 KL	1
2	Glass Lined Reactor - 3.0 KL	2
3	Glass Lined Reactor - 2.0 KL	1
4	Glass Lined Reactor - 1.6 KL	1
5	SS-316 Reactor -5.0 KL	1
6	SS-316 Reactor- 4.0 KL	1
7	SS-316 Reactor -3.5 KL	2
8	SS-316 Reactor- 3.0 KL	1
9	SS-316 Reactor- 2.5 KL	2
10	SS-316 Reactor- 2.0 KL	4
11	SS-316 Reactor- 1.0 KL	2
Intermediate Filtration Equipment		
12	SS-316 Centrifuge – 48 inch	3
13	SS-316 Halar Lined Centrifuge – 48 inch	1
14	SS-316 Centrifuge -36 inch	2
15	SS-316 Nutsche Filter – 500 L	1
16	SS-316 Nutsche Filter – 250 L	1
17	SS-316 Nutsche Filter – 50 L	1

S.No	Name of the Equipment	Quantity
18	SS-316 Leaf Filter – 100 L	2
19	SS-316 Leaf Filter – 50 L	2
20	SS-316 Leaf Filter – 25 L	2
21	SS-316 Halar Lined Leaf Filter – 25 L	2
Intermediate Drying Equipment		
22	SS-316 Vacuum Tray Drier – 48 trays	1
23	SS-316 Tray Drier – 48 trays	2
24	SS-316 Tray Drier – 96 trays	1
Intermediate Powder Processing equipment		
25	Multi Mill	1
Finished Manufacturing Facility – Class 100000 Area		
26	SS-316 Reactor- 3.0 KL	1
27	SS-316 Reactor- 2.0 KL	1
28	SS-316 Reactor- 250 L	1
29	Glass Lined Reactor - 3.0 KL	1
30	Glass Lined Reactor - 1.6 KL	1
Finished Product Filtration Equipment		
31	SS-316 Centrifuge -48 inch Full Body Lift	2
32	SS-304 Halar Lined Nutche Filter -500 L	1

Facilities & Equipments – Manufacture-1

S.No	Name of the Equipment	Quantity
33	SS-304 Halar Lined Nutche Filter -250 L	1
Finished Product Drying Equipment		
34	SS-316 – Tray Drier 48 trays	1
35	SS-316 – Rota Cone Vacuum Drier – 1000 L	2
36	SS-316 – Vacuum Tray Drier – 48 trays	1
Finished Product Powder Process Equipment		
37	SS-316 - Multi Mill	2
38	SS-316 – Sifter	2
Utilities / Other Facilities		
39	Water Ring Vacuum Pump – 300 m3/hr at 40 torr	1
40	HK make Dry Vacuum Pump 200 m3/hr at 2 torr	2
41	Oil Sealed Vacuum Pump 150 m3/hr at 0.5 mbar for Vacuum Driers	3
42	Water Jet Ejector Vacuum System at 40 torr – Graphite System	2
43	Hot Water Circulation System 40 m3/hr at 40 – 90 deg Centigrade	2
44	Cooling Tower 300 TR at 30 deg Centigrade	1
45	Cooling Tower 100 TR at 30 deg Centigrade	1

S.No	Name of the Equipment	Quantity
46	Air Operated Double Diaphragm Pumps SS-316 - 3m3/hr	1
47	Air Operated Double Diaphragm Pump PVDF – 3 m3/hr	1
48	Air Operated Double Diaphragm Pump SS-316 – 15 m3/hr	2
49	Scrubbing System 3500 cfm	2
50	10 KVA UPS for Lighting Backup	1

Facilities & Equipments – Innovation Centre

Trimax Bio Sciences Pvt. Ltd.

Innovation Centre Overview	QC Lab & Equipment View	R & D Lab Equipment View

1 Description

- Named as **"E.J. Corey"** Innovation Centre who is Inventor Corey-Itsuno reduction, Corey-Fuchs reaction, Corey–Kim oxidation Corey Winter olefin synthesis, Corey-House-Posner-Whitesides reaction Johnson-Corey-Chaykovsky reaction, Corey-Seebach reaction and Noble Winner in 1990.
- Built up Area of 15,000 Sq Ft.
- Quality control in Ground floor 7,400 Sq Ft with all facilities & Research and Development in First floor 7,600 Sq Ft with all facilities.

2 Equipments

- Quality control department houses – HPLC's , GC's , UV, IR, Auto titrators, Driers , Stability chambers, balances , Polarimeter, TOC analyzer, Milli Q water .
- Research and Development houses – Fume hoods , Rota Vapors , Vacuum pumps, Chillers , Walk in fume hoods, dedicated HPLC, Auto claves, Vacuum driers, Tray Driers.

3 Special Features

- Analytical equipment connected with Server for 21 CFR compliance.
- Power supply to All the instruments through 60 KVA UPS.
- HPLC and GC instruments equipped with auto sampling facility.
- Quality control department houses highly skilled, experienced professionals who has exposure to international audits US FDA, TGA, WHO and customer audits Ranbaxy, Cipla, GSK, Teva. Team has vast experience in method development , method validation , 21 CFR compliance requirements and cGMP requirements.
- Research and Development houses highly qualified professionals in organic synthesis . Team has more than 20 years of experience in the development , optimization of API's , scale up and commercialization.

Facilities & Equipments – Innovation Centre

S.No	Name of the Equipment	Quantity
Quality Control Lab		
1	HPLC	3
2	GC	2
3	Auto Titers	3
4	UV	1
5	IR	1
6	TOC	1
7	Polari Meter	1
8	Stability Chambers – 100 L Capacity	5
9	60 KVA UPS dedicated for Quality Control Block	1
10	Analytical balances	3
11	Vacuum Ovens	3
12	Laboratory Ovens	4

S.No	Name of the Equipment	Quantity
Research & Development Lab		
1	Autoclave 2 L	1
2	Autoclave 1 L	1
3	Autoclave 250 ml	1
4	Fume Hoods	5
5	Walking Fume Hood	1
6	Rota Vapors	2
7	Laboratory Dry Vacuum Pumps	5
8	Oil ring Vacuum Pump 150 m3/hr for General Vacuum Facility	1

Facilities & Equipments – Solvent Recovery Block

Trimax Bio Sciences Pvt. Ltd.

Distillation Column Overview	Equipment View	Equipment View
		

1 Description

- Named as **"Warren Lee McCabe"** Solvent Recovery Block who is One of the founders for the profession of chemical engineering and author of Unit Operations of Chemical Engineering and Elements of Chemical Engineering , his design methods vastly used in design of Solvent Separations.
- Built up Area of 11,625 Sq Ft.

2 Equipments

- Distillation columns 500 mm dia with 10 meters of structured wire gauze packing with theoretical plates of 6 nos per meter.
- Distillation column 700 mm dia with 10 meters of structured wire gauze packing with theoretical plates of 9 nos per meter.

3 Capacities & Features

- 500 mm dia Distillations column houses suitable heat transfer areas for evaporation (6 KL SS reactor , 30 m2 Reboiler) and condensation (60 m2 primary, 12 m2 vent condenser, 6 m2 top product cooler, 12 m2 bottom product cooler) – design basis 2000 L/hr methanol boil up.
- 700 mm dia Distillations column houses suitable heat transfer areas for evaporation (6 KL SS reactor , 40 m2 Reboiler) and condensation (60 m2 primary, 12 m2 vent condenser, 6 m2 top product cooler, 12 m2 bottom product cooler) - design basis 3000 L/hr THF+ Toluene boil up.
- Distillation columns can be operated batch as well as continuous mode base on capacities to be processed.
- Chilled water + 5 deg centigrade provided to Vent condensers.

Facilities & Equipments –Solvent Recovery Block

S.No	Name of the Equipment	Quantity
Solvent Recovery Block		
1	500 mm Distillation Column with 10 meters of Wire Gauze Packing WM5.0	1
2	700 mm Distillation Column with 10 meters of Wire Gauze Packing WM7.5L	1
3	Cooling Tower 300 TR at 30 deg Centigrade	1
4	15 KL Storage Tanks SS304	2
5	60 m2 SS304 heat exchanger	2
6	12 m2 SS304 heat exchanger	4
7	6 m2 SS304 heat exchanger	2

S.No	Name of the Equipment	Quantity
8	Azeotrope separator	2
9	Reflux Drums – 1 KL	2
10	Reflux pumps 3 m3/hr	2
11	Feed transfer pumps 10 m3/hr	2
12	Solvent fraction collection tanks 5 KL SS304	2
13	Solvent fraction collection tanks 1 KL SS304	2
14	Solvent fraction collection tanks 2 KL SS304	4

Facilities & Equipments – Manufacture-5

Trimax Bio Sciences Pvt. Ltd.

Manufacturing -5 Overview	Pilot Scale Equipment View	Microbiology Lab View

1 Description

- Named as **"Dr. Negishi Eiichi"** Manufacturing Facility who is Inventor of Negishi coupling (palladium catalyzed cross couplings in organic synthesis) and Noble Winner in 2010.
- Manufacturing built up Area of 10,000 Sq Ft.
- Microbiology lab built up Area of 1,750 Sq Ff.

2 Equipments

- SS Reactors Qty of 4 No.s. (0.25KL ~ 1.0KL). and Glass Lined Reactors (GLR) Qty of 3 No.s (0.25KL ~ 1.6KL).
- Heat Exchangers, (SS316 to SS Reactors ,Graphite Condensers to GLRs).
- Centrifuge (SS316 – 36 inch and SS316 halar lined -36 inch)
- Dryers Qty of 2 No.s (Vacuum Tray Drier – 12 trays , Tray Drier – 12 trays)

3 Capacities & Features

- SS Reactor Volumes – 2 KL. SS Reactors equipped with various agitators – Anchor, Pitched blade turbine to suit different process applications and variable frequency drives . All reactors provided with primary heat exchanger followed by secondary heat exchangers.
- GLR Reactor Volumes.- 2.5 KL. GLR's procured from GMM with Agitators – Anchor ,Curved blade turbine . Accurate temp sensing with tantalum tip, Equipment designed to provide minimum liquid stirring & temperature sensing. All GLR's are with Graphite condensers.
- Centrifuge equipment has all safety features – vibration switch, variable frequency drive, Inert nitrogen purging, hydraulic full body opening, door interlock & Dryers will meet the different process requirements.
- High Vacuum distillation reactor with separate hot oil circulation system, High vacuum 1 torr (2 stage steam with 1 water jet, 0.001 m bar direct drive vacuum pump
- PP FRP quenching reactor to handle exothermic quenching reactions which is connected with suitable scrubber system
- Microbiology lab equipped with incubators, autoclaves, laminar air flow (LAF) , LAF is class 10,000 , Rest of the lab Is class 100,000.

Facilities & Equipments – Manufacture-5

S.No	Name of the Equipment	Quantity
Manufacturing Facility		
1	Glass Lined Reactor – 1.6 KL	1
2	Glass Lined Reactor - 650 L	1
3	Glass Lined Reactor - 250 L	1
4	SS-316 Reactor -1.0 KL	1
5	SS-316 Reactor -500 L	1
6	SS-316 Reactor- 250 L	1
7	SS-316 High Vacuum Distillation Reactor – 250 L	1
8	PPFRP Quenching Reactor – 4 KL	1
Filtration Equipment		
9	SS-316 Centrifuge – 36 inch	1
10	SS-316 Halar Lined Centrifuge – 36 inch	1
Drying Equipment		
11	SS-316 – Tray Drier 12 trays	1
12	SS-316 – Vacuum Tray Drier 12 trays	1

S.No	Name of the Equipment	Quantity
Utilities / Other facilities		
13	Hot Oil Circulation System – 30000 kcal at 40 – 250 deg Centigrade	1
14	Vacuum Pump 150 m3/hr – 40 torr Water Ring Vacuum Pump	1
15	Oil Sealed Vacuum Pump 65 m3/hr – 0.5 m bar	1
16	Two Stage Steam + Water Jet Ejector Vacuum System 1 torr, 1000 m3/hr	1
17	Direct Drive Vacuum Pump 28 m3/hr – 0.001 mbar	1
18	Scrubbing System – 1000 cfm	1
19	Cooling Tower 100 TR at 30 deg Centigrade	1
Microbiology Lab		
1	BOD Incubator	3
2	Laminar Airflow	1
3	Colony Counter	1
4	Autoclaves	2

Facilities & Equipments – Manufacture-6 and utility-2

Trimax Bio Sciences Pvt. Ltd.

Manufacturing -6 Overview	Air compressor Equipment View	Nitrogen Equipment View

1 Description

- Named as **"Dr John Dalton"** Manufacturing Facility who is Inventor of Modern atomic theory, Law of Multiple Proportions and Dalton's Law of Partial Pressures and UK's Royal Society of Chemistry is named after Dalton (Dalton Division).
- Manufacturing Built up Area of 3,000 Sq Ft for Hydrogenation and Corrosive Reactions.

2 Equipments

- High pressure Auto Clave SS Reactors Qty of 1 number (1.6 KL).
- Nitrogen plant.
- Air compressor.

3 Capacities & Features

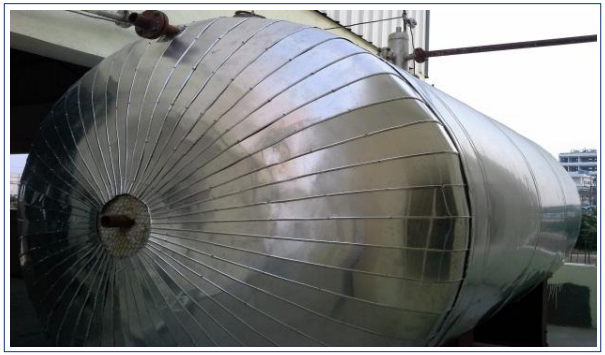
- Auto Clave Hydrogenation Reactor equipped with Gassing turbine and hollow shaft with variable frequency drive to meet different hydrogenation reaction requirements.
- The reactor is designed for 15 kg/cm2 pressure with double mechanical seal and thermosyphon cooling circulation to seal.
- Separate Vacuum pump 150 m3/hr for intertization.
- Separate Hot water circulation system 10 m3/hr at 40 – 90 deg centigrade.
- Nirmal make Hydrogenation manifold and pressure reducing station 50 m3/hr flow at 200 kg/cm2 to 1 to 5.5 kg/cm2 pressure which can house 6 hydrogen cylinders and 1 nitrogen cylinder
- Nitrogen Plant – 30 Nm3/hr at 6 kg/cm2 pressure. Purity of the nitrogen is 99.5%. It has dedicated air compressor capacity of 80 CFM at 7 kg/cm2.
- Air compressor – Non lubricated air cooled 136 cfm at 7 kg/cm2 pressure.

Facilities & Equipments – Manufacture-6

S.No	Name of the Equipment	Quantity
Hydrogenation Facility		
1	SS-316 Hydrogenation Reactor – 1.6 KL	1
Filtration Equipment		
2	SS-316 Sparkler Filter 14 inch – 10 Plates	1

S.No	Name of the Equipment	Quantity
Utilities / Other Facilities		
3	50 m3/hr flow Hydrogen Pressure Reducing Station from 200 kg/cm2 to 1 ~ 5.5 kg/cm2 Pressure	1
4	Vacuum Pump 150 m3/hr – 40 torr Water Ring Vacuum Pump	1
5	Hot Water System – 10 m3/hr 40 – 90 deg Centigrade	1

Facilities & Equipments – Boiler House

Boiler House Overview	Boiler Equipment View	Boiler Equipment View
		

1 Description

- Named as **"James Watt"** Boiler House who is Inventor of Steam Engine.
- Facility built up Area of 4,650 Sq Ft.
- Separate Husk & Ash Storage Sheds of 1,200 Sq Ft.

2 Equipments

- 4 Ton /hr steam generation Thermax multi fuel CPD40 boiler at 10.54 kg/cm2 pressure.
- Effimax – Forbes Marshall Fuel efficiency monitoring system.
- Pressure powered condensate transfer pumps.
- Husk handling system & Husk Bunkers
- Ash Handling system & Ash Silo.

3 Capacities & Features

- 4 Ton/ hr steam generation boiler equipped with Air pre heater, Multi cyclone Dust collector and Bag filter
- 2.5 Ton/h husk handling system and 50 m3 husk bunker
- 1 Ton/h pneumatic ash handling system and Ash silo 50 m3
- Effimax system to monitor boiler efficiency – Steam flow meter, steam temp, Oxygen sensor , Automatic blow down system supplied by Forbes Marshall
- Steam traps supplied by Forbes Marshall for efficient recovery of condensate
- Pressure powered condensate transfer pumps for transferring collected condensate to boiler.
- Space Reserved for Future 6 Ton/hr boiler in Addition to the Present 4 Ton/hr Boiler.

Facilities & Equipments – Utilities-1

Utilities -1 Overview	Chilling Plant Area (-20 deg C)	Chilling Plant Area (+5 deg C)
		

1 Description

- Named as **"John Dalton"** Utility Block who is Inventor of Modern atomic theory, Law of Multiple Proportions and Dalton's Law of Partial Pressures.
- Chilling Plant built up Area of 3,000 Sq Ft.
- Purified water system built up area of 2,100 Sq Ft.

2 Equipments

- Chilling plant 100 TR +5 deg centigrade.
- Chilling plant 60 TR – 20 deg centigrade.
- purified water generation system and distribution system.
- cooling tower.

3 Capacities & Features

- Chilling plant 100 TR +5 deg water circulation system – 60 m3/hr at 30 meter head to AHU system and secondary condensers. The compressor is semi hermetic screw bitzer make . Condenser and evaporator are alfa laval make , carlel make microprocessor to monitor the chilling plant.
- Chilling plant 60 TR -20 deg methanol +water circulation system – 45 m3/hr at 30 meter head to reactors to control exothermic reaction and other process requirements. The compressor is open type screw bitzer make . Condenser and evaporator are alfa laval make , carlel make microprocessor to monitor the chilling plant.
- 2.5 m3/hr USP grade purified water generation system (RO + EDI + UV) and distribution system (SS316 L electro polished lines, zero dead leg valves and UV).
- 300 TR cooling tower at 30 deg centigrade.

Facilities & Equipments – Power Control Center

Utilities -2 Overview	Power Generation Area	Power Distribution Area
		

1 Description

- Named as **"Thomas Graham"** Utilities-2 block, His studies on the diffusion of gases resulted in "Graham's Law", His discovery of dialysis, which is used in many medical facilities today, was the result of Graham's study of colloids items
- Facility Built up Area of 3800 Sq Ft.

2 Equipments

- 500 KVA DG set.
- Power control center.

3 Capacities & Features

- 500 KVA Volvo make DG set.
- Power control Center.
- 1500 KVA transformer.
- CTPT.

Facilities & Equipments – Boiler House & Utilities

S.No	Name of the Equipment	Quantity
Boiler House		
1	4 T/hr Steam at 10.54 kg/cm2 Pressure	1
2	2.5 Ton/h husk handling system	1
3	50 m3 husk bunker	1
4	1 Ton/h pneumatic ash handling system	1
5	Ash silo 50 m3	1
6	Effimax – Boiler efficiecy monitoring system	1
Utilitity-1		
1	Chilling plant 100 TR +5 deg centigrade	1
2	Chilling plant 60 TR – 20 deg centigrade	1
3	2.5 m3/hr USP grade purified water generation system and distribution system	1
4	Cooling tower 300 TR at 30 deg centigrade	1

S.No	Name of the Equipment	Quantity
Utilitity-2		
1	Nitrogen Plant – 30 Nm3/hr at 6 kg/cm2 pressure. Purity of the nitrogen is 99.5%. It has dedicated air compressor capacity of 80 CFM at 7 kg/cm2	1
2	Air compressor – Non lubricated air cooled 136 cfm at 7 kg/cm2 pressure	1
Power control center		
1	500 KVA Volvo make DG set	1
2	1500 KVA Essenar make transformer	1
3	Power control center panel	1
4	APFC panel	1
5	CTPT	1

Facilities & Equipments – MEE

MEE Block Overview	MEE Equipment Area	MEE Equipment Area
		

1 Description

- Named as **"Norbert Rillieux"** Multiple effect evaporator block who is the inventor of Multiple-effect evaporator, an energy-efficient means of evaporating water. This invention was an important development in the growth of the sugar industry.
- Facility Built up Area of 6,200 Sq Ft.

2 Equipments

- Stripper.
- 3 effects multiple effect evaporator.
- Agitated thin film drier.

3 Capacities & Features

- Stripper to evaporate 165 kg/hr low boil solvents from the effluent.
- Multiple effect evaporator (3 effects) – 1320 kg/hr water evaporation (30 KLD water evaporation) low steam consumption per kg water evaporation.
- Agitated thin film drier – 150 kg/hr water evaporation will ensure the effluent is evaporated and dry powder is collected. This ensures the zero liquid discharge.
- 200 TR cooling tower.
- Condensate recovery system.

Facilities & Equipments – ETP, Fire Hydrant & RO.

Trimax Bio Sciences Pvt. Ltd.

ETP Tanks Overview	Fire Hydrant Tanks Overview	Primary RO & Water Storage Area
		

1 Description

- Named as **"Jacobus Henricus van 't Hoff, Jr"** primary RO and water storage, who is Inventor of Chemical kinetics, chemical equilibrium and osmotic pressure and The first winner of the Nobel Prize for Chemistry.
- ETP tanks Area of 3,000 Sq Ft.
- Water purification area 2,100 sq.Ft.
- Fire hydrant tanks area 1,100 sq.Ft.

2 Equipments

- Neutralization tank, equalization tank, High TDS and COD tank, ammonia effluent tank , Press filter
- 9.0 m3/hr primary RO generation system.
- 300 Kl water storage tank with Jacky pump 10.8 m3/hr at 70 m head, main pump 137 m3/hr at 70 m head and diesel driven pump 137 m3/hr at 70 m head - with automatic control panel.

3 Capacities & Features

- ETP tanks are above the ground tanks as per the PCB norms and tanks are lined with acid proof tiles.
- Filter press to filter suspended solids from effluent – 2,000 tons holding capacity.
- Automatic pump switch on facility for fire hydrant system. The fire hydrant riser and hose reel provided to all elevated buildings , Fire brigade connection . 150 mm fire hydrant ring and risers with hose reel provided at all buildings.
- Primary RO quality will be less than 100 ppm total dissolved solids.

Facilities & Equipments – MEE, ETF, FRH & RO

S.No	Name of the Equipment	Quantity
Multiple Effect Evaporator		
1	Stripper with IMTP packing to remove low boil in the effluent at 165 kg/hr	1
2	Multiple effect evaporator (3 calandrias) – 1320 kg/hr water evaporation (30 KLD water evaporation) low steam consumption per kg water evaporation	1
3	Agitated thin film drier – 150 kg/hr water evaporation will ensure the effluent is evaporated and dry powder is collected. This ensures the zero liquid discharge	1
4	200 TR cooling tower	1
Effluent Treatment Plant		
1	Above ground collection and neutralization tank lined with acid proof tiles	1
2	Filter press – 2000 kg cake holding capacity	1

S.No	Name of the Equipment	Quantity
Fire Hydrant, Safety & Security		
1	300 KL above ground fire hydrant storage tank	1
2	Jacky pump 10.8 m3/hr at 70 m head, main pump 137 m3/hr at 70 m head and diesel driven pump 137 m3/hr at 70 m head - with automatic control panel	1
3	Biometric attendance system, monitoring of inside and surrounding area with PTZ cameras for safety	1
Primary RO		
1	Underground raw water tanks	300 KL
2	9 m3/hr RO water generation system – sand filter, carbon filter , RO , Softener	1
3	Underground tank for RO water lined with tiles	100 KL
4	Above ground reject water collection tank – 20 KL PPFRP	1

Facilities & Equipments – Ware House

Ware House Overview	Ware House ground Floor	Ware House 1st Floor
		

1 Description

- Named as **"Sir Chandrasekhara Venkata Raman"** ware house Facility who is Inventor of Raman effect & Noble Winner for physics in 1930.
- Raw material storage Area of 21,000 Sq Ft.
- Engineering material storage area 1,600 Sq Ft.
- Finished goods dispensing area 400 Sq Ft.

2 Equipments

- 6 Dispensing rooms with separate AHU's
- Cold room facility < 25 deg centigrade and cold storage 2 -8 deg centigrade facility
- De-dusting area with air curtains
- AHU for packing material storage.
- Flame proof electronic weighing balances

3 Capacities & Features

- Fire safety system.
- Well ventilated area.
- Adequate number of sampling and dispensing rooms for liquid raw materials and sold raw materials.
- Unloading platform supported with roof.
- Pallets for raw material storage, Slotted angle racking for engineering materials.

Facilities & Equipments – Solvent Storage Yard.

Solvent Storage Yard Overview	Solvent Tanks Area	Solvent Dispensing Area - Pipelines
		

1 Description

- Named as **"James Clerk Maxwell"** solvent storage yard who is Inventor of Maxwell–Boltzmann distribution, demonstrated the electric and magnetic fields travel through space in the form of waves. In 1854 & 1857 smith and Adams Prize res. at the University of Cambridge.
- Bulk Solvent storage Area of 7,000 Sq Ft.

2 Equipments

- 25 KL MS under ground horizontal tanks- 12 nos.
- 8 no of 1.2 KL dispensing tanks.
- Each tank supported with dispensing pump.
- Each tank provided with flame arrestor.

3 Capacities & Features

- Minimum solvent loss due atmospheric changes.
- Gravity unloading facility.
- 50 KL for methanol and 50 KL for Toluene storage facility.

Facilities & Eqpt– Ware House & Solvent Storage.

S.No	Name of the Equipment	Quantity
Ware House		
1	AHU for liquid sampling and dispensing	1
2	AHU for solid sampling and dispensing	1
3	500 Kg electronic weighing balance	1
4	300 kg electronic weighing balance	1
5	150 kg electronic weighing balance	1
6	60 kg electronic weighing balance	1
7	6 kg electronic weighing balance	1
8	2 – 8 deg centigrade cold storage for raw material facility	1

S.No	Name of the Equipment	Quantity
Solvent Storage		
1	25 KL MS underground storage tanks	12
2	1.2 KL MS day tanks	8
3	6 m3/hr SS316 solvent dispensing pumps and dedicated line to transfer solvent from storage area to mfg facility day tank	8

Facilities – Quality assurance

QA & Regulatory Block Overview	QA Department	QA Training Area
		

1 Description

- Named as **"Samuel Finley Breese Morse"** quality assurance Facility who is Inventor of Single-wire telegraph system and Morse code & In 1855 Great Gold Medal of Science and Arts from Emperor of Austria and In 1851 Prussian gold medal for scientific merit from the King of Prussia.
- Quality assurance Area of 3,500 Sq Ft including QA work area, library, document storage and training rooms.

2 Facilities

- 18 seating facility for quality assurance team.
- Each work station is supported with desk top, internet, intercom.
- Network Printers & Photocopiers.
- Compactor/ slotted angle racks.

3 Capacities & Features

- 1500 mm x 1500 mm comfortable seating place.
- 20 Staff locations in QA area.
- 50 Seats capacity in training hall.
- Access control system provided to archival room for security and safety.
- Total facility covered with smoke detectors and fire alarm system.

Facilities – Administration facility

Administration Block Overview	Conference Hall	Security & Visitors Area
		

1 Description

- Named as **"Mahatma Gandhi"** Administration Facility ,he has dedicated his life for freedom fighting and social welfare on the way of Non-Violence & He is known in India as the Father of the Nation.
- Total Built up area of 24,000 Sq Ft with Future expansion possibility of additional 4,800 Sq. Ft.
- Regulatory Area of 1,300 Sq Ft , Business development area of 1,200 Sq.Ft , Supply Chain area of 1,200 Sq. Ft, Projects area of 550 Sq Ft, EHS area of 350 Sq.Ft, HR-Admin area of 650 Sq.Ft, Security,OHC area 350 Sq. Ft, Accounts Area of 650 Sq.Ft & Management area of 4,800 Sq.Ft.

2 Facilities

- 125 seating facility for Administration team.
- Each work station is supported with desk top, internet, intercom.
- Network Printers & Photocopiers.
- Compactor/ slotted angle racks.

3 Capacities & Features

- 1500 mm x 1500 mm comfortable seating place for each work station.
- Two discussion rooms for the suppliers.
- Access control system provided to archival room for security and safety.
- Total facility covered with smoke detectors and fire alarm system.
- Space available for staff offices from contract manufacturing companies and manage service providers.

Reaction Capabilities

Reaction Capabilities…

- Friedel-Crafts Reaction.
- Chiral Synthesis & Resolutions.
- Cyanation.
- Chlorination.
- Bromination.
- Diazotization.
- Condensation.
- Azidation.
- Reduction.

Reaction Capabilities…… Continued

- Oxidation.
- Grignard Reactions.
- Alkylation.
- Cryogenic Reaction.
- Others if any…

Trimax Bio Sciences will Immediately Create and Implement the Facility Expansion Activities for New Reactions if Required.

Licensed Products & Intermediates

Licensed Products

S.No	Name of the Product	Quantity
1	Atorvastatin Calcium	1.0 MT/ Month
2	Fexofenadine Hydrochloride	1.0 MT/ Month
3	Lamivudine	2.0 MT/ Month
4	Lansoprazole	1.0 MT/ Month
5	Levofloxacin	2.0 MT/ Month
6	Levetiracetam	3.0 MT/ Month
7	Lisinopril dihydrate	1.5 MT/ Month
8	Montelukast Sodium	0.6 MT/ Month
9	Omeprazole	2.0 MT/ Month
10	Pantoprazole sodium	3.0 MT/ Month
11	Pregabalin	3.0 MT/ Month
12	Prasugrel	1.0 MT/ Month
13	Propafenone	1.0 MT/ Month
14	Ritonavir	2.0 MT/ Month
15	Rosuvastatin Calcium	1.0 MT/ Month
16	Sumatriptan Succinate	1.8 MT/ Month
17	Triclabendazole	2.0 MT/ Month
18	Valsartan	2.0 MT/Month

Planned Intermediates

- **Trimax Bio Sciences is Ready to Produce the Following Intermediates..**
  - **Trifluoro acetyl lysine**
  - **Alpha ketoester**
  - **L-Proline benzyl ester hydrochloride**
  - **RS- Mono Amide (Pregabaline)**
  - **R- Amide (Pregabaline)**
  - **4-Hydroxy Carbazole**
  - **4-Hydrazino benzene sulfonamide (Cilcoxib intermeduate)**
  - **Diacetone Glucose**

Quality Assurance.

Quality Assurance Process & Activities…

- Independent Authority for Approval / Rejection.
- Change Control.
- Document / Label Control.
- OOS & Deviation Handling.
- Complaint / Return / Recall Handling.
- Internal audit.
- Training.
- Vendor Qualification.
- Equipment qualification.

Quality Assurance Process & Activities…Continued

- Product Quality Review.
- Master Validation Plan.
- Validation Handling.
- Batch Release.
- Control Samples.
- Stability Studies.
- Technology Transfer.
- Analytical Method Validations.

- Trimax Bio Sciences is Placed Orders for cGMP based Software Packages for QA, QC, RA, Logistics & Manufacturing Operations.

Future Plans & Expansion Scope

Infrastructure Creation…

- Civil Structure of 2nd Manufacturing Block of 30,000 Sq Feet is Ongoing and Targeted to Complete Equipment Before May 2015.
- Facility already obtained License & Permission for 3rd & 4th Manufacturing Blocks of Each of 30,000 Sq Feet.
- Civil Works, Support Infrastructure Completed for Additional 6 TPH Boiler, Additional 750 KVA Power Generator & Additional MEE.
- Civil Works, Support Infrastructure Completed for Additional 100 TR -20 deg, 150 TR +5 deg Chilling Plants, Liquid Nitrogen Cooling System.
- Civil Works, Support Infrastructure Completed for Doubling the R&D and QC Lab Instruments.
- Additional Equipments Can be Immediately Added based on Requirements.

Talent Management…

- Infrastructure is Ready and the Planned for In House & External Training Covering the below Topics…….
- Management.
- Organizational Behavior.
- cGMP & Regulatory Process.
- Health & Safety.
- Environment.
- Technical Skill Development.

Trimax Bio Sciences will be Committed to Provide the Additional Requirements on Priority Basis for immediate Association .

Conclusion

- Trimax Biosciences is a New cGMP unit.
- All Facilities are in Accordance to the Guidelines of USFDA, EMEA and India's WHO.
- Trimax Team is of Highly Experienced People and can Handle the Typical Reactions & Support the Regulatory Issues.
- Trimax has Effluent Water Treatment Facility that includes MEE and ATFD to Meet Zero Liquid Discharge.
- Trimax has the Semi Automatic Solvent Dispensing System to Meet Process Demand.
- Trimax Facility Provided with Advanced Safety Systems.
- Trimax Bio Sciences is Implementing cGMP based Software Packages for QA, QC, RA, Logistics & Manufacturing Operations.