Allchem Lifescience Ltd

With Chemistry, We Can…

Allchem is Innovative Manufacturer of

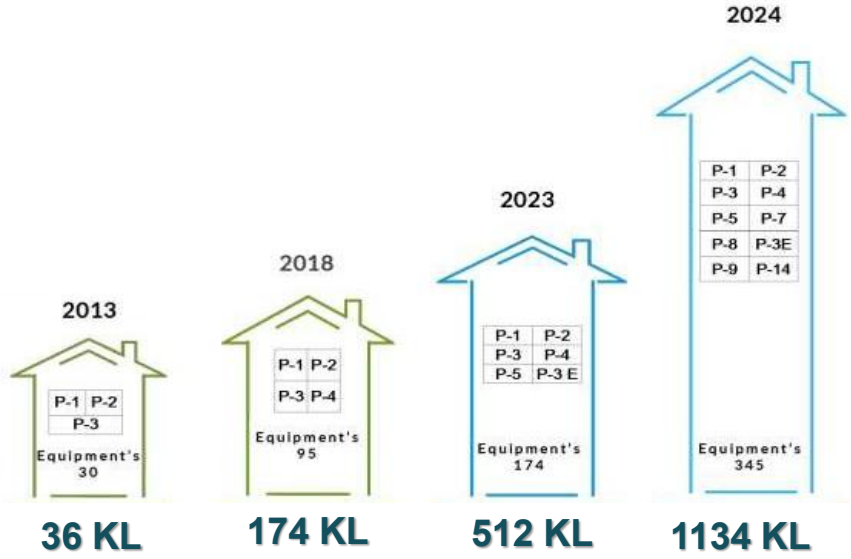
- API Intermediates (Key Starting Material s Advance Intermediate)
- Speciality Chemicals
- Custom Synthesis
- Contract Manufacturing (CDMO)

Supported Various Industries

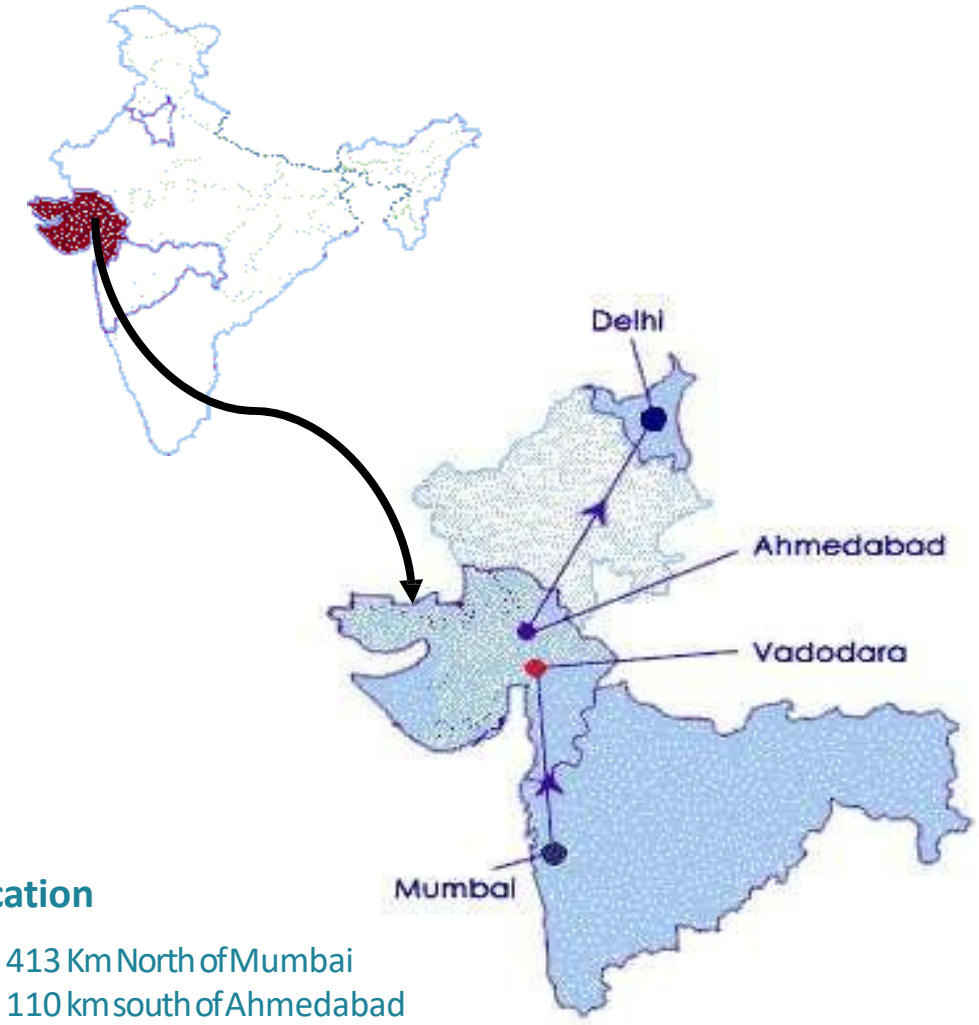
- Pharmaceuticals
- Speciality Chemicals
- Agro Chemicals
- Electrochemical
- Biotechnology

Infrastructure

- Land 65304 Square Meter
- Reaction Volume 1134 KL (M3)
- Hydrogenation Volume 60 KL (M3)
- R s D cum Kilo Lab 3 No.
- Pilot Plant 1 No.
- Production Block 7 No.
- Hydrogenation Block 1 No.
- Utilities Block 3 Nos.
- PP Area 4 Nos.
- MEE s Solvent Stripper 2 No.
- ATFD 1 Nos.
- Solvent Tanks 8 Nos.



Location of Head Office & Factory



Location

- 413 Km North of Mumbai
- 110 km south of Ahmedabad
- 671 Km South of Delhi
- 22 Km of North of Vadodara Airport

Customers Audited and approved as vendor/supplier

Alembic, cohance lifesciences, Indoco, megafine, Micro Labs, MSN Research for Better Medicines, Nagase Delivering next., Neogen Chemicals Ltd., neuland, Vivatis Pharma, Bond Chemicals, Chemosynthia, 服部商事 hattori corporation, 嘉目生物 Jiamu Bio, Moehs Fine Chemicals, olon, Unichem Laboratories Ltd., Vasudha Pharma Chem Limited, EGENE

.....and more than 150 customers around the world.

Chemistry Capabilities & Strength

Allchem Lifescience Ltd has a wide spectrum of Reaction Capabilities that can be intelligently combined to open up new opportunities for complex molecules

Production process involves

- Reaction
- Distillation (at atmospheric and under vacuum up to 0.05 mm Hg)
- Filtration (using sparkler filter, centrifuge, Nutch filter)
- Extraction
- Hydrogenation reaction up to 15 kg/cm2
- Crystallization s purification
- Drying (using tray dryer, fluid bed dryer)
- Milling, Blending
- Packing under nitrogen / Argon

- ✓ Acetylation, Acylation (Fridel craft reaction)
- ✓ Acid chloride reaction, Amide, Ester, amide formation
- ✓ Alkylations of -C, -N, -S, -O etc.....
- ✓ Bromination (Side chain as well as aromatic ring)
- ✓ Cyanation (Side chain as well as ring)
- ✓ Dieckmann Cyclization
- ✓ Grignard reaction
- ✓ High Vacuum distillation (up to 0.005 mm of Hg)
- ✓ Hydrogenation reaction (with Ni, 5% Pd and 5% Rh on C)
- ✓ Phase transfer reaction
- ✓ Sandmeyer reaction, diazotization reaction etc...

Plant wise Equipment's

Year	Plant	Discription	SS Reactor	GL Reactor	Hydrogenator	High Vacuum Distillation Unit	HDPE Scrubber	SS Cenrtifuge	PPA Equipments	SS Liquid Blendor	SS Scrubber	ANF SS	AND SS	Total Equipment
2013	P01, P02, P03	Equipment	8	4	1	2	3	2	10	-	-	-	-	30
		Volume	15	7	1	1	12	-	-	0	-	-	-	36
2018	P01, P02, P03, P04	Equipment	20	8	3	16	3	9	28	4	4	-	-	95
		Volume	87	33	7	14	12	-	-	9	12	-	-	174
2023	P01, P02, P03, P04, P05, P03E	Equipment	36	20	1	31	12	13	28	11	11	5	6	174
		Volume	219	109	1	29.2	52	-	-	29.5	33	17	22	512
2024	P01, P02, P03, P04, P05, P07, P08, P03E, P09, P14	Equipment	96	53	14	33	21	31	28	11	31	7	20	345
		Volume	478	249	60	30	91	-	-	30	93	27	76	1134

Plant wise Equipment's

Description	Capacity	Equipment No.	Volume KL
SS Reactor	1 KL to 10 KL	96	478
GL Reactor	1 KL to 6.3 KL	53	249
Hydrogenator	0.1 KL to 6.5 KL	14	60
High Vacuum Distillation Unit	0.4 KL to 1.0 KL	33	30
HDPE Scrubber	3 KL to 5 KL	21	91
SS-316 Centrifuge (Bag Lifting)	36" to 48" Inch	31	-
PPA Equipments	12-48 Tray, 120 KG	28	-
SS Liquid Blendor	2 KL to 3 KL	11	30
SS Scrubber	3 KL	31	93
ANF SS	3 KL to 5 KL	7	27
AND SS	3 KL to 5 KL	20	76
Total Equipment		345	1133.5

Production Plant Working Specification:

Name of Plants Use for Plant Equipped with	▪ P01, P04, P05, P08, P06, P14 ▪ Production ▪ Glass Lined Reactors ▪ Centrifuges ▪ AND s ANF ▪ Scrubber (SS and HDPE) ▪ Water Ejectors, High Vacuum Pump ▪ Tray Dryers, Rotary Vacuum Dryer, Fluid Bed Dryer ▪ Mutimill, Swifter and Blender
Plant area	▪ 500 to 3500 Sq. Mt. (Total : 20000 Sq. Mt.)
Operating temperature	▪ -70 deg C to 200 deg C
Operating pressure	▪ 3 KG/cm2
Operating vacuum	▪ 5 mm of Hg

Hydrogenation Plant (P02 s P07)

Fully equipped Separate Hydrogenation Plant with Hydrogen Storage with all legal permission.

• Name of Plants	P02, P07
• Use for	Hydrogenation and Production
• Plant Equipped with	Gas Induction Reactors SS Reactors Glass Lined Reactors Centrifuges, AND s ANF Scrubber (SS) Water Ejectors, High Vacuum Pump
• Production area	1500 Sq. Mt.
• Operating volume	60 KL
• No. of Gas Induction Reactors	14 Nos.
• Gas Induction Reactors Capacity	1 KL to 6.5 KL
• Gas Induction Reactor	Magnetic Drive
• Operating temperature s Pressure	-10 to 150 deg C s up to 35 kg/cm2

Power Processing Plant (P01, P04)

- Name of Plants : P01, P04
- Use for : Drying, Mutimill, Sifting, Blending
- AHU with Filter : 5 Micron
- Plant Equipped with : Tray Dryers, Fluid Bed Dryers, RCVD, Mutimill, Sifter, Octagonal Blender
- All PPA Equipments : GMP Models
- Production area : 4000 Square Feet
- Tray Dryer (12 to 48 trays) : 4 Nos.
- Fluid Bed Dryer (120 Kg) : 3 Nos.
- Octagonal Blender : 1 Nos.
- Rotary Cone Vacuum Dryer(500 Lit): 1 Nos.
- Mutimill (3 HP) : 4 Nos.
- Sifter (30 Inch) : 4 Nos.

High Vacuum Distillation Plant (P03)

- Name of Plants : P03
- Use for : High Vacuum Distillation s Packing
- Equipment Equipped : SS Reactors
  : High Vacuum Distillation Unit (SS-316 s Glass lined)
  : Water Ejectors, High Vacuum Pump
  : Liquid Blender
- Production area : 15000 Square Feet
- Liquid Packing Area : 2 Nos.
- Operating volume : 60 KL
- HVD Reactors : 33 Nos. (30 KL)
- Liquid Blenders : 11 Nos. (30 KL)
- Operating temperature : -10 to 220 deg C
- Operating Vacuum : up to 1.0 mm of Hg

Quality Assurance

Quality System at ALS

QHSE (ISO)

ISO-9001	ISO-14001	ISO-45001
Quality Policy	Legal Compliance	Legal Compliance/ Risk assessment
Quality Objective	Environmental Aspect and Impact	HSE Policy , HIRA

cGMP (ICH Guidelines)

Product	System	
ROS, Process Flow, BMP	SOP, Format, Annexure	SMF
BMR, BLR,ECR	Audit Trail & Back up Data	Validation Master Plan
Specification of RM/PM/IP/INT/FP	Document Control & Issuance	Qualification (DQ, IQ, OQ, PQ)
Customer VQ, Audit, Declaration	Change Control, Deviation	Preventive Maintenance
Process & Analytical Validation	OSS, Market Complain	Calibration of Equipment
Stability/Holding time, APQR/Quality Summary	Job Responsibility, Training	Validation of Water System, Equipment holding
RM,PM Vendor Approval, VQ	Internal/External Audit, CAPA	Document Storage

Quality control department having following instruments

HPLC, GC, Head Space GC, FTIR, Polarimeter, UV Spectrophotometer, Muffle Furnace, Boiling Point Apparatus, KF Titrator, Volumetric Titrators, Density Meter, Refractor Meter, UV Cabinet, MP Apparatus, Turbidity Meter, Hot Plate, Hot Air Oven, Vacuum Oven, TLC, Ultrasonic Bath etc.....

This department focuses on:

- All instruments having audit trial function complies as per ICH Q7 guidelines.
- Finished products which meet specifications depending on the requirement of its customers or as per the international standards.
- Calibration of all the instruments on regular intervals.
- Raw material, in-process and finished product testing etc..
- Method validation, Impurity isolation and characterization.
- Physico-chemical properties, Stability studies
- Thin layer chromatography, Karl fisher's instrument for moisture analysis.
- Titration facilities (Perchloric titration, Acid-Base titration, Halide titration).
- Melting point-Boiling point equipment, Ultrasonic Bath.
- IR, GC-MS, NMR support for analysis.
- Analytical Method transfer.

Research s Development, Kilo Lab s Pilot Plant

Fully equipped with glass assembly-reactor s SS reactors

- Area (Sq. Feet) 11000 Square Feet.
- RsD, Kilo Lab : 4 Nos.
- Total Operating Volume 4 KL
- Operating Temperature -70 to 220 deg C
- Operating Pressure up to 0-35 kg/cm2
- Operating Vacuum up to 1.0 mm Hg

Research s Development, Kilo Lab s Pilot Plant have following Equipments

- 20, 50 Lit Glass Assemblies – 36 Nos.
- 5, 100 Lit Gas Induction Reactors - 2 Nos.
- 250 Lit Glass lined Reactors - 2 No.
- 500 Lit SS-316 Reactors - 5 No.
- 20, 50 and 200 Litre High Vacuum Distillation Assemblies Fractionating column – 6 Nos.
- 24 “ SS-316 Centrifuges – 4 Nos.
- SS-316 Sparkler Filters – 4 Nos.
- SS-316 Tray Dryers – 4 Nos.
- Water Ejectors – 16 Nos.
- High Vacuum Pump – 28 Nos.
- HDPE Scrubbers – 2 Nos.
- Try Dryers : 6,12, 24 Nos.

Utilities & Engineering Infrastructure

Boiler IBR (6 + 2 Ton capacity)	2Nos.
Thermic Fluid Heater 4 Lac KL/ hour Temp: 30 deg – 250 deg	1Nos.
Cooling tower (80-400 TR)	20Nos
Chilled Brine water plant with capacity 20 TR min temp -20 deg C	6Nos.
Chilled water plant with capacity 50 TR min temp 8-10 deg C	3Nos.
Air compressor (6 kg pressure)	4Nos.
RO/DM water plant (2000 liter/hour)	4Nos.
High Vacuum oil pump	45Nos.
Steam Jet Ejector	2Nos.
Scrubber / Venturis (for HCl, SO2 and Ammonia)	8Nos.
DG Set (500 KVA)	2Nos.
Water jet ejectors	135Nos.

Warehouse

Allchem Lifescience Ltd having 6 Warehouses mainly for

- Raw Material
- Packing Material
- Finished Product
- Solvent Drum Storage in solvent yard.
- Acid and base in tanks
- Hydrogen Storage
- Solvent Storage tank – 8 Nos.

Solvent storage tank farm is a designated area for the safe storage of various solvents used in the manufacturing process.

- Underground Tanks: Used to minimize exposure and potential environmental impact.
- Total 8 Solvent Tanks for storage of solvents like Methanol, Toluene, MDC, IPA, Xylene, Acetone etc....
- All tanks having Pressure Relief Valves: To prevent overpressure situations.
- Dedicated Pipelines: Separate lines for each solvent to prevent cross-contamination.
- Pump Systems: Designed for safe transfer of solvents between tanks and processing areas, equipped with flow meters for monitoring.

Environment, Health & Safety Infrastructure

ETP Plant Consist

Primary treatment done at ETP (capacity: 1381 KL), than using multiple effect evaporators and ATFD achieving zero discharge liquid facility.

- In-house Environmental testing laboratory for COD, BOD, TDS, pH, Ammonical nitrogen etc..

- Various membership for Hazardous waste disposal taken for Solid waste, Incineration waste and other waste. (Names: NECL, BHEL, Morya, Geo Cleaner)

Low COD Treatment:

- Low COD Water directly taken into water distillation plant 1 and 2, and remove water and collect in to cooling tower than distilled water directly taken in to Final effluent treatment tank.

High COD Treatment:

- After collection of effluent, transfer to the neutralization tank in which one No. of blower provided to keep all suspended solids in suspension and to provide proper mixing, after sufficient qty collection transfer effluent in neutralization tank.
- Add Acid/Base/ Electrolyte/ Pass chlorine to keep final pH within 6-6.
- After proper treatment pass through filter press (If required), take filter water into aeration tank.
- After aeration take this water into solvent stripper and remove low boiling solvent in the effluent.
- After solvent stripper, pass this effluent into the force circulation 1 and 2, and bring TDS up to 35-45 % w/w. Distilled condensate collect and used in cooling tower, washing and other utilities.
- After achieving this TDS, use this mass as ATFD feed and isolate solid salt, which is finally dispose of government approved land fill site.
- If required do Hydrogen peroxide treatment in final collection treatment tank and MEE condensate tank.






























Thank You