

FINE INGREDIENTS
(PHARMA AND OTHERS)





Fine Ingredients

With a strong presence across the entire value chain of Pyridine and Picolines, the Fine Ingredients business touches varying aspects of the human life – from Pharmaceuticals, to Coatings, Personal Care, Food, Nutrition, Electronic Chemicals etc. We offer a range of Value Added Ingredients, Actives and Formulations for these industries, all benchmarked to rigorous international standards.

BUSINESS OVERVIEW

Fine Ingredients (Pharma & Others)

We offer over **50 commercial Pyridines, Picolines, Piperidine based intermediates** which are used globally by Pharmaceutical, Healthcare, Electronics and other industries. **We are a global leader in 11 pyridine based intermediates** and striving to make other products fall in the same league

Anti-Microbials

We have a range of safe and highly efficacious anti-microbial solutions for applications in Paints, Coatings, Industrial, Cosmetic and Personal Care industries. Range of Products includes **Jubithione® (ZPT-50, ZPT-40, ZPT Powder, CuPT, NaPT) Class of Pyrithiones, Cetyl Pyridinium Chloride, Per-Acetic Acid 15% & 35% solution.**

In addition we have developed New Synergistic & Innovative Antidandruff Products like **Jubithione® ZPC, Jubiquat™ CLC, Low Cost In Can & Dry film Preservation Solutions like Jubithione® ZPB, Jubithione® NPB, Boosted Preservation Solutions Jubigaurd® PHG and PCG, & Complete Oral Care solutions Jubiquat® CPL**

Contract Development & Manufacturing Offering (for Pharma)

The business provides Contract Development and Manufacturing services for

- Key Starting Materials and Regulatory Starting Materials
- Advanced Intermediates with final step in WHO and Third Party certified GMP Plant
- Patented or Generic API's under cGMP Guidelines.

We apply **Design for Six Sigma (DFSS)** and **Design of Experiments (DOE)** concepts to develop Cost Efficient processes for multi-step synthesis with emphasis on scalability, ease of operation, robustness and sustainability. The services can be provided under secrecy agreements if required.

OUR EDGE

- **Over 35 Years** of R&D integration experience
- Global Reach across **over 100 countries**
- Leadership positions in **over 11 products** and growing
- Dedicated Top Management commitment to all Quality and Regulatory Compliances
- Focus on Continuous improvement through Business Excellence
- Strong Initiatives for EHSS, Corporate Sustainability, CSR and Green Manufacturing
- Recognised for its continuous innovation over the last 12 years
- The Fine Ingredients business has been granted **34 process patents** in various countries including India, Japan, USA, UK, Ireland, China and Switzerland

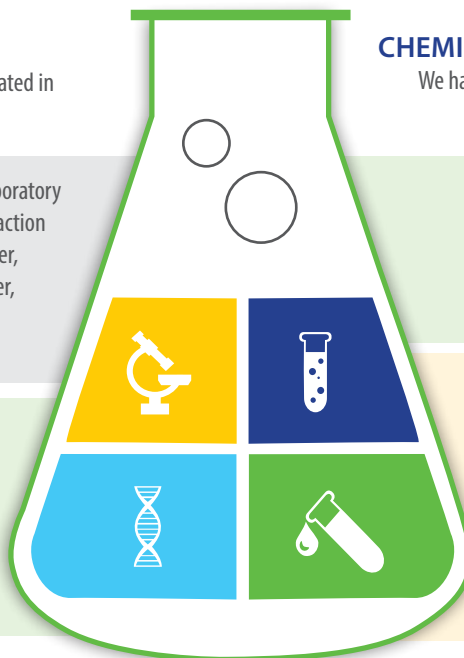
Innovative Products and Economically Efficient Solutions

R&D CAPABILITIES

The Fine Ingredients business has 2 R&D facilities located in Gajraula (Near Delhi), Noida (near Delhi)

All R&D facilities have fully equipped analytical laboratory with advance equipment including: NMR, XRD, Reaction Calorimeter, LC-MS, Prep HPLC, Particle Size Analyzer, Optical Microscope, Stability Chambers, Polarimeter, IR, DSC, TSC etc.

All projects in R&D are coded and distributed to maintain strict confidentiality



CHEMISTRY & TECHNOLOGY PLATFORMS

We have developed several chemistry platforms and attained expertise in the following technologies

Grignard Reactions, High Pressure Reactions, Oxime Reactions, Chichibabin reaction, Lachrymetric reactions at high volumes

Chiral Synthesis-, Stereo Selective Synthesis, Biotransformation, Fluorination using KF & HF, Photochlorination, Polychlorination, Liquid & Vapour phase Chlorination, Bromination, , Halogenation & Dehalogenation, Quarternisation

MANUFACTURING OVERVIEW

The Fine Ingredients business has one Pilot Plant located at Gajraula (near Delhi) and 12 Manufacturing plants located at 3 sites – Gajraula (near Delhi), Ambarnath (Maharashtra) and Bharuch.

Pilot Plant - a GMP Compliant Facility with reactors ranging from 20L to 630L (Glass assemblies, Cryogenic reactors & Autoclaves) with different metallurgies – GLR, SS, Hastelloy. These operate at temperatures from -90 °C to 200 °C and pressure upto 58 kg/cm².

WHO & Third Party Certified GMP Plant for RSM and GMP Intermediates at Bharuch - with Temperature, Humidity and Pressure controlled areas, ISO-8 Clean room, dedicated HVAC systems, quarantined powder processing area, and combination of MSGL and SS-316 reactors of 5-6 KL capacity.

Commercial plants have over 100 reactors (MSGLR, SS, Hastelloy and Cryogenic) ranging from 1KL to 14KL. These operate at wide range of process conditions for multi-product manufacturing.





CERTIFICATIONS

Committed to sustainable operations, Jubilant Life Sciences is **Responsible Care® 14001:2003 certified** under the American Chemistry Council's (ACC) Responsible Care® program for its Corporate Office, Noida and for the Manufacturing Unit Gajraula. The **QC laboratories are NABL certified with Standard ISO/IEC 17025:2005 certification.**

ISO
9001:2008

ISO
14001: 2004

OHSAS
18001: 2007

SUSTAINABILITY

Low Carbon Footprint

Use of Green raw materials (Corn/Cane Ethanol) for majority of products, resulting in lower carbon footprint compared to petroleum based manufacturing

Jubilant is increasing productivity and drastically cutting waste by the use of Green Chemistry Toolbox along with Solvent Recovery Plants, Multi-effect Evaporators and Waste Heat Boilers, Zero Liquid Discharge plants.

Jubilant contributes to the planet's most precious resource, water, by 100% recycling with the use of latest technologies.

Ecovadis

Registered with Ecovadis for CSR evaluation with a gold rating; with this Gold Rating Jubilant's performance has been rated among top 5% companies globally.

Project Management

An exclusive Project Management Office (PMO) has been introduced for a customer centric approach to Contract Manufacturing Services. Each project in Contract Manufacturing is handled with care by a certified Project Manager (PM). Designated PM is the single point of contact for customers. The processes are structured to map project progress, documentation etc. with the help of Enterprise Project Management (EPM) software

Global Reach

Jubilant has a noticeable global footprint, owing to its network of offices and warehouses in India, USA, Europe and China. This network is backed by a strong supply chain, ensuring consistent supply of products to various locations in the world.

PRODUCT PORTFOLIO

S. No	Product Description	CAS No	Pharma Applications	Agro Applications	Other Applications	Status
1	5-Methyl-2(1H)-Pyridinone	[1003-68-5]	Pirfenidone			Commercial- Campaign Based
2	N-[[3-Amino-4-(Methylamino) Phenyl]Carbonyl]-N-(2-Pyridinyl)-Beta-Alanine Ethylester	[212322-56-0]	Dabigatran Etexilate			Scaled in Kilograms Qtys
3	Diethyl-3-pyridylborane	[89878-14-8]	Abiraterone Acetate			Commercial- Campaign Based
4	2-Nitro-5-bromopyridine	[39856-50-3]	Palbociclib, Ribociclib			Commercial- Campaign Based
5	5-Chloro-2-Nitropyridine	[52092-47-4]	Ribociclib			Scaled in Kilograms Qtys
6	5-Bromo-7-Azaindole	[183208-35-7]	Vemurafenib, Venetoclax			Commercial- Campaign Based
7	2-Pyridineethanol	[103-74-2]	Mesoridazine, Thioridazine, Betahistamine HCl			Commercial- Campaign Based
8	Piperidine-2-ethanol	[1484-84-0]	Icaridin, Tiquizium bromide, Mesoridazine			Commercial- Campaign Based
9	(R)-3-(Boc-amino) Piperidine	[309956-78-3]	Linagliptin			Developed in R&D
10	(R)-(-)-3-Amino piperidine Dihydrochloride	[334618-23-4]	Alogliptin			Developed in R&D
11	2-Amino-3-hydroxypyridine	[16867-03-1]	Paliperidone		Cosmetics	Commercial- Campaign Based
12	Pyridine-2,3-dicarboxylic acid	[89-00-9]	Moxifloxacin	Imazepyr		Scaled in Kilograms Qtys
13	Pyridine-3-sulfonic acid	[636-73-7]	New Drug			Commercial- Campaign Based
14	Chromium picolinate	[14639-25-9]	Health supplements		Health supplements	Commercial- Campaign Based
15	Zinc picolinate	[17949-65-4]	Health supplements		Health supplements	Commercial- Campaign Based
16	3-Hydroxy-2-methylpyridine	[1121-25-1]	Pantoprazole	Febrifugine; Halofuginone		Commercial- Campaign Based
17	3-Hydroxypiperidine	[6859-99-0]	Benidipine, menpenzolate bromide,			Commercial- Campaign Based
18	2-Bromo-3-Methyl pyridine	[3430-17-9]	Lumacaftor			Commercial- Campaign Based
19	2-Bromo-5-Methyl pyridine	[3510-66-5]	Abametapir			Developed in R&D
20	2-Aminomethyl piperidine	[22990-77-8]	Flecainide acetate			Commercial- Campaign Based
21	3-Hydroxymethyl pyridine (Pyridine-3-methanol)	[100-55-0]	Indinavir; Nicofibrate			Commercial- Campaign Based
22	N-(2-Chloroethyl) piperidine hydrochloride	[2008-75-5]	Cloperastine, Fempiverinium bromide, Picoperine, Pipethanate, Pitofenone, Raloxifene			Scaled in Kilograms Qtys
23	2-Bromo-5-nitropyridine	[4487-59-6]	New Drug			Developed in R&D
24	Pyridine-3-sulfonyl chloride	[16133-25-8]	Vonoprazan			Commercial- Campaign Based
25	Pyridine-2,4-dicarboxylic acid	[499-80-9]			Cosmetics	Developed in R&D
26	1-Bromo-2-butyne	[3355-28-0]	Linagliptin			Commercial- Campaign Based
27	7-Azaindole	[271-63-6]	Vemurafenib, Venetoclax			Commercial- Campaign Based
28	2,6-Picolinoxylidide	[39627-98-0]	Mepivacaine, Bupivacaine			Commercial- Campaign Based

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29	N2, N2-Diethyl-6-Methyl-2,5-Pyridine Diamine Dihydrochloride	[168091-36-9]			Electrochemical, Dyes, INK	Commercial- Campaign Based
30	4-Amino pyridine	[504-24-5]	Indoramin; Lexipafant; Milverine; Octenidine; Pinacidil; Timiperone			Commercial- Campaign Based
31	2,3,5-Collidine	[695-98-7]	Omeprazole; Esomeprazole			Commercial - Regular Production
32	2,3-Lutidine	[583-61-9]	Lansoprazole; Rabeprazole; Moxifloxacin; Dextansoprazole, Loratadine			Commercial - Regular Production
33	2,6-Dichloropyridine	[2402-78-0]	Enoxacin, Flupirtine, Liranaftate	Pyributicarb		Commercial - Regular Production
34	2-Amino pyridine	[504-29-0]	Piroxicam; Risperidone; Tenoxicam; Mepyramine; Methapyrilene; Fenyramidol; Sulphasalazine; Chloropyrilene; Mepifylline, Dabigatran	Clodinafop; Imazosulfuran; Rimsulfuron; Sulfosulfuron		Commercial - Regular Production
35	2-Amino-3-methyl pyridine	[1603-40-3]	Pemirolast, Lumacaftor			Commercial - Regular Production
36	2-Amino-4-methyl pyridine	[695-34-1]	Nevirapine; Piketopufen; Rifaximin			Commercial - Regular Production
37	2-Amino-5-methyl pyridine	[1603-41-4]	Zolpidem , Pirfenidone	Chlorfluazuron; Fluazuron; Haloxyfop		Commercial - Regular Production
38	2-Amino-6-methyl pyridine	[1824-81-3]	Nalidixic acid; Rimazolium metilsulfate			Commercial - Regular Production
39	2-Bromopyridine	[109-04-6]	Carbinoxamine; Chlorpyramine; Disopyramide; Pipradrol; Triprolidine; Lafutidine; Piclozotan; Taprizosin; Atazanavir			Commercial - Regular Production
40	2-Chloropyridine	[109-09-1]	Chlorpheniramine, Methyl phenidate, Chlorpyrilene	Pyriproxyfen		Commercial - Regular Production
41	2-Hydroxymethyl pyridine (Pyridine-2-methanol)	[586-98-1]	Bevonium Metilsulfate; Pineprofen, Ibuprofen piconol			Commercial - Regular Production
42	3,5-Dimethyl piperidine	[35794-11-7]	Pirmenol hydrochloride; Tilmicosin			Commercial - Regular Production
43	3,5-Lutidine	[591-22-0]	Omeprazole; Esomeprazole; Rupatadine			Commercial - Regular Production
44	4-(Dimethylamino)pyridine	[1122-58-3]	Zidovudine; Abacavir; Lamivudine; Montelukast; Docetaxel; Paclitaxel; Alfentanil; Carfentanil; Cladribine;	Chlorpyrifos		Commercial - Regular Production
45	5-ethyl-2-methylpyridne	[104-90-5]	Etoricoxib , Pioglitazone	new intermediate	Niacin, Niacinamide	Commercial - Regular Production
46	Azacyclonol	[115-46-8]	Fexofenadine; Diphebanil methylsulfate, Terfenadine			Commercial - Regular Production
47	Cetyl Pyridinium Chloride	[6004-24-6]			Mouthwases, Preservative, Oral care	Commercial - Regular Production
48	Isonicotinic Acid	[55-22-1]	Aconiazide; Cefsulodin; Iproniazid; Metrenperone; Nialamide; Pasiniazid; Terfenadine; Trimedoxime; Iloperidone; Fampridine	Forchlorfenuron, Inabenfide		Commercial - Regular Production
49	Isonipectic acid	[498-94-2]	Declenperone; Metrenperone; Risperidone; Ocaperidone; Paliperidone			Commercial - Regular Production

PRODUCT PORTFOLIO

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50	Pyridine Hydrobromide	[18820-82-1]	Cephalosporins; Cephalaxin			Commercial - Regular Production
51	Pyridine-2-aldehyde	[1121-60-4]	Bisacodyl; Sodium picosulfate; Pralidoxime iodide, Carbinoxamine			Commercial - Regular Production
52	2,4,6-Collidine	[108-75-8]	Vitamin D; Dydrogesterone			Commercial- Campaign Based
53	2,4-Lutidine	[108-47-4]	Luftronil			Commercial- Campaign Based
54	2,5-Lutidine	[589-93-5]	Sunepitron			Commercial- Campaign Based
55	2,6-Diamino Pyridine	[141-86-6]	Phenazopyridine			Commercial- Campaign Based
56	2,6-Dibromopyridine	[626-05-1]	Acrivastine			Commercial- Campaign Based
57	2,6-Lutidine	[108-48-5]	Ampicillin, Amoxycillin, Gemcitabine; Everolimus, Clopidol; Nifurpirinol; Pirmenol; Pirozadil; Pyricarbate; Tetomilast			Commercial- Campaign Based
58	2-Acetylpyridine	[1122-62-9]	Doxylamine			Commercial- Campaign Based
59	2-Amino-5-chloropyridine	[1072-98-6]	Zopiclone, Eszopiclone; Etoricoxib; Metrenperone, Edoxaban	ClodinafopP		Commercial- Campaign Based
60	2-Aminomethyl pyridine	[3731-51-9]	Flecainide acetate			Commercial- Campaign Based
61	2-Pyridoacetonitrile	[2739-97-1]	Mefloquine			Commercial- Campaign Based
62	3,4-Lutidine	[583-58-4]	Pentazocine; Phenazocine			Commercial- Campaign Based
63	3,5-Dibromopyridine	[625-92-3]	Lorlatinib, Crenigacestat, Ispronidine			Commercial- Campaign Based
64	3-Acetylpyridine	[350-03-8]	Telithromycin; Imatinib mesylate, Rasitonic acid, Nilotinib, Masitinib		Metyrapone, In Flavour and Fragrance	Commercial- Campaign Based
65	3-Aminomethyl pyridine	[3731-52-0]	Nicotinyl alcohol; Picotamide	Acetamidiprid		Commercial- Campaign Based
66	3-Bromopyridine	[626-55-1]	Abiraterone			Commercial- Campaign Based
67	5-Methyl nicotinic acid	[3222-49-9]	Rupatadine			Commercial- Campaign Based
68	Ethyl isonipecotate	[1126-09-6]	Fexofenadine; Maropitant; Azatadine			Commercial- Campaign Based
69	Ethyl Nipecotate	[5006-62-2]	Tipepidine; Tiagabine			Commercial- Campaign Based
70	Picolinic acid	[98-98-6]	Bepotastine; Pirmenol; Rimiterol; Sorafenib; Piberaline fumarate			Commercial- Campaign Based
71	Piperidine HCl	[6091-44-7]	Benproperine; Bietamiverine; Bimoclomol; Biperiden; Butopiprine; Carpipramine; Clocapramine; Cloperastine			Commercial- Campaign Based
72	Pyridine Hydrochloride	[628-13-7]	Cephalosporins; Cephalaxin			Commercial- Campaign Based
73	Pyridine-3-Acetic Acid	[501-81-5]	Risedronic acid	PyrifenoX		Commercial- Campaign Based
74	2-Methylaminopyridine	[4597-87-9]	New Drug			Scaled in Kilograms Qty



The Life Science
Ingredients segment
of Jubilant Life Sciences
is engaged in Specialty
Intermediates, Nutritional Products
and Life Science Chemicals through
five manufacturing facilities in India.

Serving customers in over 80 countries,
the segment offers a broad portfolio
of high quality ingredients that find
application in wide range
of industries.

MANUFACTURING FACILITIES

UTTAR PRADESH

- Gajraula

GUJARAT

- Bharuch
- Samlaya

MAHARASHTRA

- Nira
- Ambarnath

OFFICE LOCATIONS

India

Maharashtra

Jubilant Life Sciences Limited

Transocean House, 1st Floor,
Lake Boulevard, Hiranandani Business Park,
Powai, Mumbai - 400 076
Maharashtra, India
Tel : +91 22 40316900

Telangana

Jubilant Life Sciences Limited

304-305, Doshi Chambers,
Opp. United Insurance Bldg.
Bashir Bagh, Hyderabad - 500 029
Telangana, India
Tel : +91 40 2322 7019

China

Jubilant Life Sciences (Shanghai) Limited

Room 602-603,
Shanghai Longemont Summit Center
1088, Yan'an West Road, Shanghai – 200052, China
Phone : +86 21 63907388

Belgium

Jubilant Life Sciences NV

Axxes Business Park, Guldensporenpark 22,
Block C, Merelbeke – 9820, Belgium
Tel : +32 9 233 1404

USA

Jubilant Life Sciences USA Inc.

790 Township Line Road Suite 175 Yardley,
Pennsylvania 19067, USA
Tel : +1 908 658 9988

Corporate Office:

Jubilant Life Sciences Limited

1A, Sector 16A, Noida - 201301, U.P., INDIA
Tel: +91 120 4361000

For business specific inquiries: SILC@jubl.com
To know more log on to: www.jubl.com/lsi

