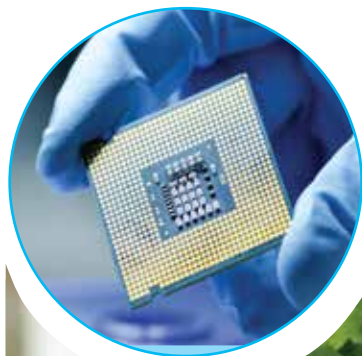


SPECIALTY INGREDIENTS

(Pyridine, Picolines, Cyanopyridines, Piperidine, Acetaldehyde, Formaldehyde & Alkyl Pyridine Mixture)





Specialty Ingredients

The Specialty Ingredients business of Jubilant Ingrevia manufactures **Pyridine, Picolines, Cyanopyridines, Piperidine, Acetaldehyde and Formaldehyde**. These are used as Specialty Ingredients/building blocks for the production of a range of agrochemicals, pharmaceuticals, dyes, solvents, metal finishes, fine chemicals, etc. The products are trusted by more than 275 global pharmaceutical, agrochemical and other industrial customers who rely on Jubilant's consistent quality and service. Their trust and support has helped us attain global leadership in Pyridine & its derivatives.

KEY STRENGTHS

Vertical Integration

The Company has over 30 years of experience in Pyridine chemistry and is the only manufacturer of Pyridines and Picolines with **complete forward and backward integration**.

Manufacturing Prowess

The world scale plant located at Gajraula, U.P. (approximately 120 kms from Delhi), is Zero Discharge and ISO 9000, ISO 14001, OHSAS 18001, RC14001 certification under the American Chemistry Council's Responsible Care® program.

Environment Sustainability

Company is committed to environment sustainability and supports green chemistry by prioritising use of bio inputs in manufacturing. Jubilant is one of the world's largest producer of Acetaldehyde from bio route.

PRODUCTS

Pyridine

Pyridine, a basic organic chemical, is a versatile building block and an excellent solvent used in agrochemical, pharmaceutical and other industries. It is completely soluble in Water, Alcohol, Ether and Benzene. It acts as an acid scavenger and can catalyse reactions. Pyridine ACS grade qualifies for many high purity applications mainly for pharmaceutical.

Alpha Picoline

Alpha Picoline, also called 2-Picoline or 2-Methylpyridine, is a clear organic liquid. It is completely soluble in Water, Alcohol and Ether.

Beta Picoline

Beta Picoline, also called 3-Picoline or 3-Methylpyridine, is a clear organic liquid. It is completely soluble in Water, Alcohol and Ether.

Gamma Picoline

Gamma Picoline, also called 4-Picoline or 4-Methylpyridine, is a clear organic liquid. It is completely soluble in Water, Alcohol and Ether.

2-Cyanopyridine

2-Cyanopyridine is a white to off-white solid at room temperature with almond like odour.

3-Cyanopyridine

3-Cyanopyridine is a white crystalline solid.

4-Cyanopyridine

4-Cyanopyridine is a white to off-white solid at room temperature. It is used as an intermediate in organic synthesis and pharmaceuticals substances.

Piperidine

Piperidine is a colourless fuming liquid and is a widely used amine for synthesis of organic compound.

Acetaldehyde

It is one of the most important aldehydes, occurring widely in nature and being produced on a large scale in industry. It is building block for many chemicals.

Formaldehyde

Formaldehyde is the simplest of the aldehydes, produced on a large scale in industry. It is an important precursor to many other materials and chemical compounds.

Alkyl Pyridine Mixture

This is complex heterocyclic mixture containing poly alkylated pyridines, which is derived as high boiling distillate during Pyridine manufacturing.

Liquid Choline Chloride

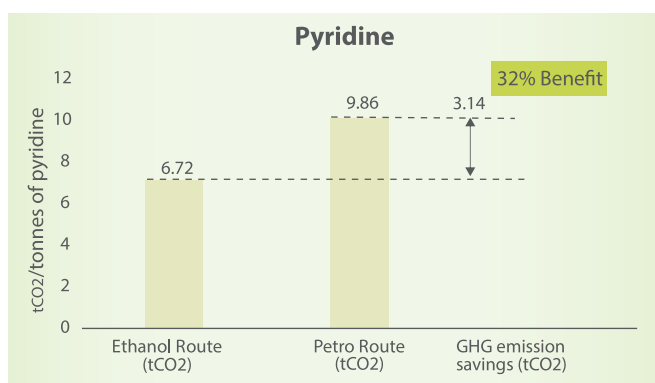
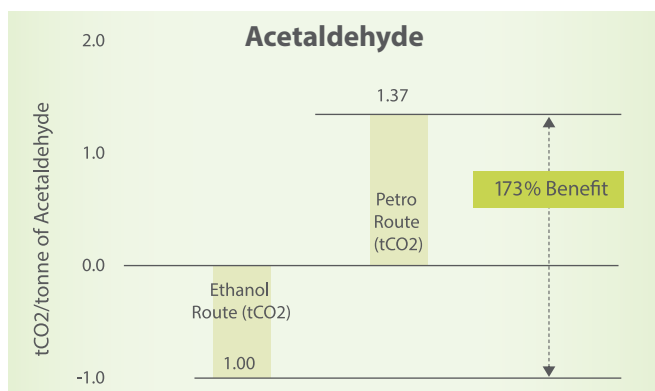
Liquid choline chloride is produced as clear aqueous solution and is available in 63-75% concentration. It is a safe chemical with excellent environmental profile.

Note : Please refer separate leaflets for Oil Field Chemicals & Acetaldehyde.

APPLICATIONS	REACH STATUS
<ul style="list-style-type: none"> The largest application of Pyridine globally is in the manufacturing of Bipyridyl Herbicides: Paraquat and Diquat Pyridine is also used in industries like: dyestuffs & textiles, agrochemicals, pharmaceuticals and electronics Pyridine is used as a solvent, and for metal finishes 	Registered as full phase in and Transported Isolated Intermediate (TII)
<ul style="list-style-type: none"> The largest application of Alpha Picoline is 2-Vinylpyridine monomer (2 VP), which is used in the manufacturing of VP Latex Other application of Alpha Picoline is in the manufacturing of agrochemicals: Picloram and Nitrapyrin Alpha Picoline is also the raw material for 2-Cyanopyridine It is also used in the pharmaceuticals industry 	Registered as Transported Isolated Intermediate (TII)
<ul style="list-style-type: none"> The largest application of Beta Picoline is in the manufacturing of Vitamin B3 (Niacinamide) Beta Picoline is a significant intermediate for agrochemicals like Chlorpyrifos, Haloxyfop, Fluazifop Butyl and also for Pharmaceutical Intermediates 	Registered as full phase in and Transported Isolated Intermediate (TII)
<ul style="list-style-type: none"> Gamma Picoline finds application in the manufacturing of several catalysts such as 4-DMAP and the drug INH & other pharmaceuticals Gamma Picoline is used in the manufacturing of 4-Vinylpyridine (4 VP) and 4-Cyanopyridine 	Not Registered at Present
<ul style="list-style-type: none"> 2-Cyanopyridine finds applications in pharmaceuticals, agrochemicals & fine chemicals 2-Cyanopyridine is converted to Chromium and Zinc Picolinate for use in human and animal nutrition 	Not Registered at Present
<ul style="list-style-type: none"> 3-Cyanopyridine is used in the manufacturing of Niacinamide & Niacin (Vitamin B3) Other major application areas of 3-Cyanopyridine are: Pymetrisone, 2 Chloro Nicotinic Acid, and 3-Aminomethylpyridine, pharmaceuticals & agrochemicals 	Registered as Transported Isolated Intermediate (TII)
<ul style="list-style-type: none"> 4-Cyanopyridine finds applications in the manufacturing of the drug INH Isoniazid and other pharmaceuticals and agrochemicals 	Not Registered at Present
<ul style="list-style-type: none"> The major application of Piperidine is for the production of Dipiperidinyl Dithium Tetrasulfide, which is used as a rubber vulcanisation accelerator Piperidine is also used as a solvent and base in agrochemical and pharmaceutical industries for Mepiquat Chloride, Dipyridamole and Minoxidil 	Registered as Transported Isolated Intermediate (TII); Full Phase in registration in process
<ul style="list-style-type: none"> Acetaldehyde is used in production of many chemicals such as Acetic Acid, Pentaerythritol, Pyridine & Picolines, Acetate esters, Cinnamaldehyde, Glyoxal etc. 	Registered as Transported Isolated Intermediate (TII)
<ul style="list-style-type: none"> Formaldehyde is used in large quantities for production of many chemical compounds such as Urea formaldehyde resin, Phenol formaldehyde resin, Pentaerythritol, Pyridine & Picolines. Also finds application as disinfectant. 	Not Registered at Present
<ul style="list-style-type: none"> Alkyl Pyridine Mixture is used an intermediate for manufacturing corrosion inhibitor formulations for oilfield applications. 	Not Registered at Present
<ul style="list-style-type: none"> Liquid Choline chloride is used in oil & gas industry as an effective temporary clay stabilizer/KCl substitute for the smectite, illite and mixed layer clay minerals, those commonly found in formations. 	

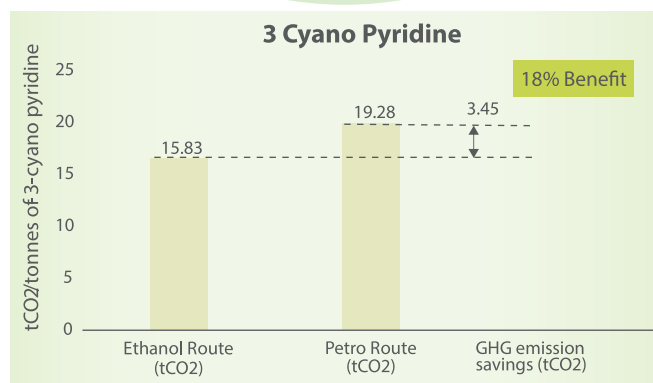
Carbon Foot Print

The Company manufactures Acetaldehyde, Pyridine, Beta Picoline & 3-Cyano Pyridine via the biomass route, using agricultural feedstock which gives it a benefit in carbon footprint as compared to the conventional petroleum route.



Ingrevia is born out of a union of 'Ingredients' and 'Life' ('Vie' in French). Jubilant Ingrevia Limited is committed to offering high quality and innovative life science ingredients to enrich all forms of life.

Jubilant Ingrevia Limited, a global integrated Life Science products and Innovative Solutions provider is focused on bringing value to its stakeholders in a sustainable manner. A science active company with five state-of-the-art manufacturing facilities and R&D centres in India. Through its businesses of Specialty Chemicals, Nutrition & Health Solutions and Life Science Chemicals, it is serving fast-growing and diverse industries such as Pharmaceuticals, Agrochemicals, Nutrition, Consumer and Industrial applications.



Source: Carbon Footprint Study conducted by Ernst & Young

MANUFACTURING FACILITIES

UTTAR PRADESH

- Gajraula

GUJARAT

- Bharuch
- Samlaja

MAHARASHTRA

- Nira
- Ambernath

OFFICE LOCATIONS

India

Maharashtra

Jubilant Ingrevia Limited

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

Telangana

Jubilant Ingrevia 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 Ingrevia Limited

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

For business specific inquiries at: advance_Intermediates@jubl.com

To know more log on to: www.jubilantingrevia.com

