

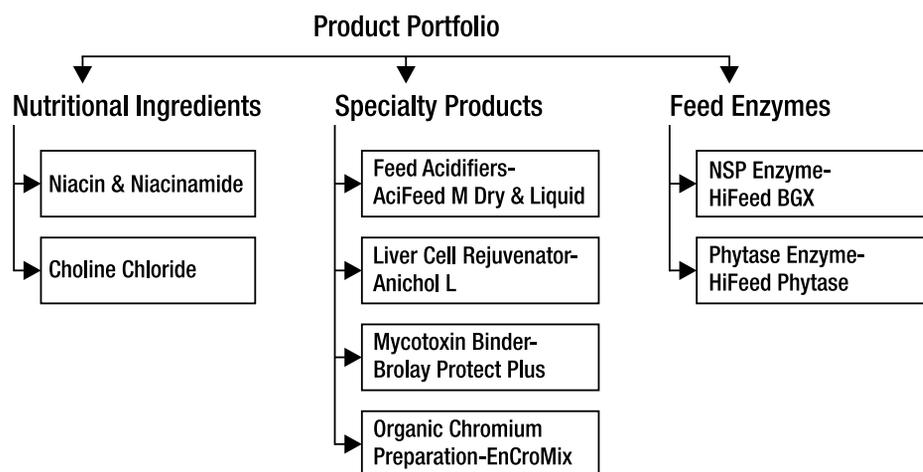
Nutrition Products



Jubilant is a significant player in the global markets for nutritional products. The Company manufactures a wide range of ingredients and formulations which find application in diverse industries across pharmaceutical, food, animal feed and personal care.

The Company enjoys a strong position of trust and reliability with its customers across the globe on account of its quality of products and services. Our manufacturing facilities

for nutritional products are FAMI-QS quality compliant, certified by international regulatory authorities and our products conform to major international pharmacopoeias.



1. Nutritional Ingredients:

a) Niacin & Niacinamide:

Jubilant is currently ranked amongst the top three manufacturers of Niacin & Niacinamide (Vitamin B3) worldwide and is the leading manufacturer of Niacinamide with complete backward integration to the basic feed-stock. The Company's ranking is expected to improve by the end of 2010, once the SEZ at Bharuch, Gujarat with 10,000 TPA capacities for 3-Cyano Pyridine and Niacinamide is operational. Jubilant delivers unmatched advantages of consistent quality & availability for Niacin & Niacinamide, leveraging its global scale of Pyridine manufacturing operations.

Niacin and Niacinamide products conform to latest versions of all major pharmacopoeias i.e. USP, BP, JP, FCC, EP and the manufacturing facility is Kosher, Halal, FAMI-QS and GMP certified.

Product Variants:

Jubilant offers multiple variants of Niacin & Niacinamide to cater to its customers. The product variants offered include:-

- Niacin USP
- Niacin 95%
- Niacin free flow

- Niacin feed grade
- Niacin direct compressible
- Niacinamide USP
- Niacinamide free flow
- Niacinamide feed grade
- Niacinamide direct compressible
- Custom offering of different particle sizes ranging from fine powder to coarse granular

Application Areas:

Animal Nutrition: The major application of Niacin and Niacinamide is in the field of animal nutrition. Niacin and Niacinamide are essential for good health and optimum productive performance of all animals. Numerous experiments have shown that although feedstuffs contain niacin, much of the ingested niacin is in a form unavailable to the animal, being bound in a polysaccharide complex.

Niacin deficiency reduces the activity of the coenzymes NAD and NADP, affecting numerous metabolic processes and in turn causes other secondary metabolic disorders, which further leads to commercial problems of reduced weight and growth of Animals.

The animal feeding and nutrition industry typically supplements

diets with niacin to ensure that the daily requirement of this vitamin is met.

Human Nutrition & Pharmaceuticals – Niacin and Niacinamide are used as food supplements to ensure replenishment of nutrients otherwise inadequately available in our diet. The Recommended Dietary Allowance (RDA) is 20mg/day. Niacin and Niacinamide find use in pharmaceutical industry in the production of various vitamins and their effect is under study for treatment of diabetes and high cholesterol level.

Cosmeceuticals – Niacinamide has shown encouraging results when formulated into skin cream, hair lotions and other personal care products in the new class of products in the health and beauty aid category termed Neutraceuticals. These neutraceutical ingredients when incorporated in the tropical delivery system enhance elegance, skin feel and texture upon application.

Technical Applications –

1. The manufacturers of Zinc and Cadmium brighteners use Niacin in the preparation of metal surfaces.
2. The addition of Niacin in quarternized form (obtained by the reaction of Niacin with benzylchloride) to metal plating baths leads to uniform and brilliant surfaces. Use of Niacin may also improve the electro-deposition of plating metals.
3. Niacin is also used as a brightener additive in Cyanide-free metals baths for galvanic zinc, cadmium, tin, chromium, copper and nickel.
4. Niacin and Niacinamide are also used as a starting raw material in the production of advance stage intermediates which further go into the production of patented agrochemical molecules.

b) Choline Chloride

Jubilant Life Sciences Limited is India's largest manufacturer of Synthetic Choline Chloride. Choline Chloride is manufactured at the ISO 9001:2008 and FAMI-Qs compliant manufacturing facility of Jubilant. It meets international quality standards and is offered in different forms for animal feed applications. To have complete control over quality aspects, the manufacturing plant also has a backwardly integrated corn cob manufacturing facility which is unique to the company. The highly sophisticated in-site quality control laboratory and elaborate QC and QA protocols ensure that Jubilant stands up to its most precious value of consistent delivery of quality.

Choline Chloride is used in poultry, dairy, and pet food as well in pharmaceutical companies for making Choline enriched products. Choline is also known as Vitamin

B4 and is an essential nutrient that is widely distributed in foods, principally in the form of phosphatidylcholine but also as free choline and is necessary for the structure and function of all cells and is crucial for sustaining life.

The role of Choline is to form cell membrane structure and prevention of fat deposition in liver-cells. It is a precursor of Acetylcholine synthesis which is important for neurotransmission.

Product Variants:

- Anichol 50 – Choline Chloride 50% Dry Silica based
- Anichol 60 – Choline Chloride 60% Dry corn cob based
- Anichol 75 – Choline Chloride 75% Aqueous
- Choline Chloride Crystals – Choline Chloride crystals 99% dry
- RPC – Rumen Protected Choline

2. Specialty Products

Jubilant offers Specialty feed supplements to the farmers to increase their returns on investments, which are mainly Chromium Tripicolinate premix, Feed acidifiers, Potent Mycotoxin Binders and Liver treatment products. Additionally Jubilant has successfully utilized its expertise and strengths in vitamins market and developed alliances with global manufacturers of bulk feed additives like amino acids which gives us an opportunity to serve customers with a wider gamut of products.

Product Variants:

- AciFeed M Dry & Liquid – Mould inhibitor for feed & feed ingredients in dry & liquid form
- Anichol L – Liquid Choline Formulation for treatment of fatty liver condition
- Brolay Protect Plus – Broad spectrum Mould & Mycotoxin binder
- EnCroMix – Organic Tri-Chromium preparation for stress management

4. Enzymes

Jubilant leverages its international presence to establish a robust Supply Chain backed by a strong Quality Control and Research & Development capabilities to provide high quality Phytase & NSP enzymes to the Indian livestock industry.

Product Variants:

- HiFeed BGX- NSP Enzyme
- HiFeed Phytase- Thermo-tolerant potent Phytase Enzyme



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