

MICROBIAL CONTROL SOLUTIONS FOR PERSONAL CARE





Microbial Control Solutions For Personal Care

The Microbial Control Solutions Business of Jubilant Ingrevia **offers safer, eco-friendly and efficacious solutions for Cosmetics and Personal Care Industry.**

Our Microbial Control Solutions range is completely backward integrated through its greener Pyridine chemistry & Chemical Intermediates. With complete quality control, ISO certified plants, backward integration with internationally acceptable standards and technical services including microbial efficacy testing facility; we are a trusted 'Partner of Choice' for our globally renowned customers in various personal care and cosmetic applications.

BUSINESS OVERVIEW

PRODUCTS

Our commercial range of antimicrobials includes:

- Jubiquat™ CPC (Cetylpyridinium Chloride)
- Jubithione® ZPT 50 (Zinc Pyrithione 50% FPS)
- Jubiguard PO (Piroctone Olamine)
- Jubiguard MX (PCMX)
- Jubiguard PEHG
- Jubiguard PCG

Our innovative antimicrobial formulation for Anti-dandruff and OTC Applications:

- Jubithione® ZPT (Potentiation Technology of ZPT)
- Jubiquat™ CPO (Potentiation Technology of Piroctone Olamine)
- Jubiquat™ CLC (Potentiation Technology of Climbazole)
- Jubiquat™ CPL (Potentiation Technology of CPC)

Our recent introduction in cosmetic portfolio:

- Minoxidil
- Aminexil
- Hexyl Resorcinol / Butyl Resorcinol

SERVICES

We offer custom manufacturing services for synthesis of antimicrobial actives as well as formulation development support along with antimicrobial efficacy studies for various personal care end applications.

PRODUCT PORTFOLIO

Jubiquat® CPC

Cetylpyridinium Chloride

A Safe, Effective, Green & Eco-friendly Alternate To Conventional Antimicrobials/Preservatives

- We use renewable feedstock to manufacture CPC with 77% green content, hence can be considered as Naturally Derived.
- A solid, white coloured cationic quaternary pyridinium compound used as preservatives, antimicrobial and cationic surfactant in various oral care, cosmetics & toiletries, pharmaceutical and home care products.
- Broad spectrum antimicrobial efficacy specially against bacteria, fungi and viruses including COVID-19 virus.

- A Non-corrosive, Non-VOC and Non-oxidizing compound with neutral pH
- Most preferred anti-microbial systems considered as safe and efficacious by US FDA for use in oral care (OTC mouth rinses, toothpaste etc.) to treat plaque induced gingivitis.
- Recommended Safe, Efficacious and Green alternative to Triclosan, Triclocarban, Benzethonium chloride, Parabens and Formaldehyde-donors, which are considered toxic and/or carcinogenic.

End Applications

As Antimicrobial for

- Oral Care/Mouthwash
- Skin Creams & Lotions (also Emulsifier)
- Deodorants & Anti-perspirants
- Transparent Body Wash & Soaps
- Wet Wipes
- Surgical Gloves

As Preservative for

- Oral Hygiene Products
- Gel Soap/Bar & Liquid Hand-wash
- Deodorants & Anti-perspirants
- Skin Lotions, Creams & Sanitizers
- Poultry Industry

General Information

- Chemical Name: 1-Hexadecyl- pyridinium Chloride
- CAS # 6004-24-6
- EC No: 204-593-9
- Registration Status under REACH Regulation: 05-2114625352-57-0000
- Made in India under cGMP, Kosher, and Halal conditions

Specifications

- Appearance: White Powder
- Moisture Content (% w/w, by KF): 4.5% - 5.5%
- Melting Range: 80 - 84° C
- Assay, % w/w (By chemical method): 99-102%

Dosage Levels

As Preservative

- In Mouthwashes: Upto 0.1 %.
- Other oral hygiene cosmetic products: Upto 0.5%
- In Anti-perspirants & Deodorants: Upto 2.0%

- In Skin Lotions & Creams: Upto 0.2%

As Antimicrobial

- In Mouthwashes: 0.045% to 0.1%
- In Surgical Gloves: 0.1% to 2%

Jubithione® ZPT 50 FPS

Zinc Pyrithione 50% Fine Particle Suspension

An Effective Solution To Your Dandruff Problems

- An aqueous, non-VOC, homogenous suspension of very fine ZPT particles with varied particle size distribution
- Broad-spectrum anti-dandruff formulation effective against fungi, bacteria and moulds.
- Provides dandruff relief and improves scalp health
- Excellent compatibility with surfactants and in wide pH range

Product Variants

- D 90 < 1 micron and D 90 < 2 micron
- With Common Preservative (DMDMH or CMIT-MIT)
- With Eco Friendly Preservatives (Phenoxy ethanol)
- Preservative Free
- ZPTO FPS with customised **Platelet Particles**

End Applications

- Anti-dandruff agent
 - Hair care rinse-off & leave-on products (shampoos, conditioners, gels, creams, etc.)
- Anti-fungal/anti-microbial & anti-inflammatory
 - Skin care (creams & lotions), Foot creams and Talcs
- Rinse-off body wash products
 - Bar & Deodorant Soaps, Body wash, Bubble bath

General Information

- Chemical Name: Bis-(2-pyridyl- thio)- zinc 1,1'-dioxide
- CAS # 13463-41-7
- EC# 236-671-3
- Registration Status under REACH Regulation: 17-2119913225-47-0000

Specification

- Appearance: White to off-white aqueous suspension
- Zinc Pyrithione (% w/w): 48-50
- pH (5% active ingredient in pH 7 water): 6.5 - 9.0
- Particle Size (Malvern 2000): D90 < 1 or 2 micron



Dose Levels (Based on active)

- Anti-dandruff shampoo: 0.50%-1.0%
- Body wash products: 0.25%-0.50%
- Leave-on Applications: 0.1% - 0.25%

Piroctone Olamine

A Safe Effective Solution to Your Dandruff Problems

- A solid, white coloured compound used to treat seborrheic dermatitis and dry scalp.
- Broad-spectrum anti-dandruff compound effective against fungi, bacteria and moulds.
- Provides dandruff relief and improves scalp health.
- Provides additional benefits such as thickening preservation and elimination of body offensive odor.

End Applications

- Anti-dandruff agent - Hair care rinse-off & leave-on products (shampoos, conditioners, gels, creams, etc.)
- Rinse-off body wash products - Bar & Deodorant Soaps, Body wash, Bubble bath.

General Information

- Chemical Name: 2-aminoethanol;1-hydroxy-4-methyl-6-(2,4,4-trimethylpentyl)pyridin-2-one

- CAS No.: 68890-66-4.
- EC No.: 272-574-2.

Specifications

- Appearance: White to pale yellow crystalline powder
- Piroctone Olamine (w/w%): >98%
- pH (1% in water, 20°C): 8.5 – 10
- Melting Range: 130-135°C

Dosage Levels

- Rinse-off: max 1.0%
- Leave-on: max 0.5%

p-Chloro-m-Xylenol: PCMX (White & Brown)

A Safe Effective and low-toxic Antiseptic active

- Antimicrobial chemical compound used to control bacteria, algae, and fungi in hand soaps, antiseptic liquids, and bar soaps.
- Particularly effective against gram-positive organisms.

End Applications

- As Anti-bacterial agent - hand soaps, antiseptic liquids, and bar soaps.
- As Antiseptic and Disinfectant agent - used for skin disinfection and cleaning surgical instruments.

General Information

- Chemical Name: 2-chloro-5-hydroxy-1,3-dimethylbenzene
- CAS No.: 88-04-0.
- EC No.: 201-793-8.

Specifications: PCMX - White

- Appearance: White crystals and crystalline powder
- PCMX (w/w%): >98.5%
- Melting Range: 114-116°C

Specifications: PCMX - Brown

- Appearance: brown liquid
- PCMX (w/w%): >98%
- Melting Range: 114-116°C

Dosage Levels

- Leave-on – (0.1 - 0.5%)
- Rinse-off – (0.1 - 0.5%)
- Disinfectant – (4.5-5%)

Jubiguard PEHG

Phenoxyethanol Based Eco-Friendly (Paraben & Formaldehyde Free) Preservative System With Efficacy Boosting Ethylhexylglycerin

General Properties

- Liquid, eco-friendly, colourless, odourless and versatile cosmetic preservative.
- Broad spectrum - effective against yeast, moulds, fungi and bacteria.
- Free of Parabens, MIT/CMIT and formaldehyde donors.
- Effective in broad pH range (4-8).
- Excellent compatibility with salts and pigments (TiO₂, sulphite ions etc). No discoloration observed.
- Stable to hydrolysis, temperature and pH
- Effective in pH-ranges up to 12.0
- Oil soluble and soluble in glycerine
- Widely accepted in USA, EU, Japan, Australia and Canada.

Product Variants

- Jubiguard PEHG 90: Phenoxy ethanol (90%)
- Jubiguard PEHG 85: Phenoxy ethanol (85%)
- Jubiguard PEHG 70: Phenoxy ethanol (70%)

End Applications

- Rinse-off: Shampoo, Conditioner, Liquid soap, Shower gel etc.
- Leave-on: Creams & Lotions (O/W & W/O emulsions); Deodorants
- Wet-wipes, Eye-care, Lip-care & Baby Products.

Typical Specifications

- Appearance: Colourless to Light Yellow Solution
- Odour: Characteristics
- Density: 1.03 – 1.10 g/mL
- Solubility: 1.0% (in water); Soluble in Glycols & Ethanol

Dose Levels:

- Rinse-Off: 0.5 - 1.15 %
- Leave-on: 0.1-1.0 %

Jubiguard PCG

Phenoxyethanol Based Eco-Friendly (Paraben & Formaldehyde Free) Preservative System With Efficacy Boosting Caprylyl Glycol

General Properties

- Liquid, eco-friendly, colourless, odourless and versatile cosmetic preservative.
- Broad spectrum - effective against yeast, moulds, fungi and bacteria.
- Free of Parabens, MIT/CMIT and formaldehyde donors.
- Effective in broad pH range (4-8).

Product Variants

- Jubiguard PCG 55: Phenoxy ethanol (55%)
- Jubiguard PCG 57: Phenoxy ethanol (57%)
- Jubiguard PCG 75: Phenoxy ethanol (75%)

End Applications

- Rinse-off: Shampoo, Conditioner, Liquid soap, Shower gel etc.
- Leave-on: Creams & Lotions (O/W & W/O emulsions)
- Wet-wipes, Eye-care, Lip-care & Baby Products.

Typical Specifications

- Appearance: Colourless to Light Yellow Solution
- Odour: Characteristics
- Solubility: 0.6% (in water); Miscible in Ethanol & Glycols

Dose Levels:

- Rinse-Off: 0.5 - 1.5 %
- Leave –On: 0.5 - 1.75%

Jubiquat™ CPO [US20190350200A1 (Pub)]

A Piroctone Olamine (PO) based Next Generation Potentiating Microbial Control Solution for Dandruff Removal

A novel, synergistic & clear microbial control solution with broad range of activity against bacteria, fungi and yeast. Excellent anti-dandruff activity with 50% reduction in Piroctone Olamine active requirement, which gives significant reduction in application cost of PO.

Also works as very effective preservative system.

End Applications:

Anti-dandruff clear/opaque products

- Hair-care rinse-off & leave-on products (shampoo, creams, serums and conditioners)
- Anti-fungal/anti-bacterial Creams & Lotions
- Deodorants & antiperspirants
- Non-irritating opaque bubble bath, shower gels, liquid soaps & gel bars

Dosage Levels

- Rinse-off products: upto 0.5%
- Leave-on products: upto 0.25%

Jubiquat™ CLC [US20190350200A1 (Pub)]

A novel, synergistic & transparent microbial control solution developed for treatment of Dandruff & other Dermal Infections.

- Climbazole based potentiation formula with safe & green anti-bacterial compound
- Broad range of activity against gram(+) and gram(-) bacteria, viruses fungi and yeast.
- Excellent anti-dandruff activity at low concentration of Climbazole.
- Very effective in treating bacterial & fungal dermal infections like psoriasis, eczema, ringworm, athletes foot, dry skin, dermatitis, tinea and vitiligo.
- Ability to inhibit bio-film growth.
- Significant reduction in total anti-microbial active requirement.
- Clinical studies show significant reduction in dandruff relief in addition to better sensorial benefits
- Suitable to develop transparent formulations.

End Applications:

- Anti-dandruff hair-care Rinse-off & Leave-on products (shampoo, serums and conditioners).
- Anti-fungal/anti-bacterial Creams & Lotions.
- Female Hygiene products
- Non-irritating clear bubble bath, shower gels, liquid soaps & gel bars.

Dose Levels:

- Hair-Care
 - Rinse-off products: 0.25%- 0.5%
 - Leave-on products: 0.1% - 0.25%
- Deodorants & Antiperspirants: < 2.0%
- Hygiene Products: Upto 1.0%
- Anti-fungal/Anti-bacterial OTC Creams and Lotions: Upto 2.0%

Jubithione® ZPZ FPS [US10314312; EP3160228]

A Next Generation, Highly efficacious, Eco-friendly Composition For Anti-dandruff & Scalp Care (ZPT Potentiation Technology)

- ZPT based patented technology with vitamin based zinc chelate with advantage of low application cost
- An aqueous, ready to use, preservative free, eco-friendly, synergistic composition for scalp (dandruff) treatment with anti-hairfall benefits
- High anti-microbial efficacy at very low dosages (3 fold reduction in ZPT requirement) against dandruff causing micro-organisms compared to in-market actives, thus reduces toxicity impact significantly
- Helps in regulation of mammalian keratinous tissues
- Clinical studies show significant reduction in ASFS score, sebum content, anti-hair fall advantage in addition to sensorial benefits and relief from dandruff symptoms (irritation, itching, flaking)

End Applications

Anti-dandruff agent

- Anti-fungal/anti-microbial & anti-inflammatory
- Hair care rinse-off & leave-on products (shampoos, conditioners, gels, creams, etc.)
- Skin care (creams & lotions), Foot creams
- Rinse-off body wash products, liquid and bar soap

Dosage Levels

- Rinse-off products : 0.25% - 0.5%
- Leave-on products: 0.1 % - 0.25%





COSMETIC INGREDIENTS

Minoxidil

A Safe Effective Hair-growth Stimulator

Only FDA approved drug used for treating male pattern baldness and hair loss in women.

End Applications

- Hair Serum & Tonics
- Hair Gel & Creams

General Information

- Chemical Name: 3-hydroxy-2-imino-6-piperidin-1-ylpyrimidin-4-amine
- CAS No.: 38304-91-5
- EC No.: 253-874-2

Specifications

- Appearance: White to off-white
- Minoxidil (w/w%): >99%

Dosage Levels

- Women: 2.0% • Men: 5.0%

Aminexil

A Safe & Effective Hair-growth Stimulator

- Cosmetic ingredient for treatment of hair loss, effectively promotes hair growth
- Increases the circulation of blood to hair follicles and prevents hardening of hair shaft and buildup of collagen

End Applications

- Hair Serum, Tonics & Sprays
- Hair Cream & Shampoo

General Information

- Chemical Name: 3-hydroxy-2-iminopyrimidin-4-amine
- CAS No.: 113275-13-1
- EC No.: 616-121-2

Specifications

- Appearance: White to off-white
- Aminexil (w/w%): >98%

Dosage Levels

- Women: 2.0% • Men: 5.0%

n-Butyl Resorcinol

A Safe & Effective Skin Lightening Agent

- An effective skin lightener/agent and tyrosinase Inhibitor commonly used in cosmetic preparations like creams, lotions and gels
- Suitable for skin protection/burn formulation
- Soluble in most of the organic solvent, partly soluble in water

End Applications

- Creams
- Lotions
- Gel

General Information

- Chemical Name: 4-butylbenzene-1,3-diol
- CAS No.: 18979-61-8
- EC No.: 606-191-2

Specifications

- Appearance: White to off-white crystalline powder
- n-Butyl Resorcinol (w/w%): >99%

Dosage Levels

- 0.1 – 2%

n-Hexyl Resorcinol

A Safe & Effective Skin Lightening agent

- Skin-brightening agent to even skin tone complexion
- Exhibits antiseptic, anthelmintic properties
- Sparingly soluble in water, freely soluble in ethanol (96%) and in methylene chloride

End Applications

- Skin Lightener
- Throat Lozenges
- Food Preservative

General Information

- Chemical Name: 5-hexylbenzene-1,3-diol
- CAS No.: 136-77-6

Specifications

- Appearance: Colorless, yellowish or reddish powder
- n-Hexyl Resorcinol (w/w%): >98%

Dosage Levels

- 0.5 – 1%

WHY JUBILANT?

Backward Integration to the Basic Feedstock

The complete backward integration, (Molasses- Alcohol - Acetaldehyde-Pyridine -2-CP-ZPTO/CPC) up to the basic feedstock, is one of the major advantages that company has over the other manufacturers of Zinc Pyrithione and CPC. The molasses obtained from sugarcane enables Jubilant to use bio-ethanol as the primary feedstock for the manufacturing of Zinc Pyrithione and CPC. This brings in advantage of lower carbon foot print and high green content in our renewable raw materials. Our ZPTO and CPC possess ~ 43% and 77% green content.

Research Capabilities

Jubilant offers customized microbial control solutions for various applications. Our state-of-the-art infrastructure and well designed laboratory is capable of performing all sorts of microbiological tests like, In-can & Dry film preservative efficacy studies, Zone of Inhibition test, Time Kill Test, MIC Studies and their performance evaluation studies related to microbial control, preservatives and product prototypes as per AOAC, JIS ASTM, EN and BIS standards.

R&D facilities are located at Gajraula (UP) and Noida (NCR) with advance equipments for R&D trials and scale-up studies including modern analytical equipments like Malvern Particle size analyzer, ICP OES, Viscometer, UV Spectrophotometer etc.

Care For Environment

Jubilant saves a considerable amount of Green House Gas emissions by using bio-ethanol as its primary feedstock unlike other manufacturers using petro based feed stock (Naphtha). Jubilant saves an estimated 10-30% of CO₂ Emission as compared to its competitors.

Global Reach

Jubilant has wholly owned subsidiaries with offices in US, Europe and China. Outside India, the company holds warehouses in Belgium, USA and China. Additionally, Jubilant has global sales and distribution networks worldwide.

EcoVadis

Registered at Ecovadis for integrating our sustainability framework which helps us to continuously monitor and improve our sustainability standard for the benefit of our customers, stakeholders and environment.



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*It is the responsibility of the finished goods manufacturer to ensure their product is compliant with the applicable regulations. Recommended product's use levels may vary depending on country. For any additional information or clarification, please contact Jubilant Ingrevia Ltd.

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