

**ANTIMICROBIALS FOR  
PERSONAL CARE**





## Antimicrobials For Personal Care

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

Our antimicrobial product 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 (Cetyl Pyridinium Chloride)
- Jubithione® ZPT 50 (Zinc Pyrithione 50% FPS)
- Jubiguard PEHG
- Jubiguard PCG

Our innovative antimicrobial formulation for Antidandruff Applications

- Jubithione® ZPZ
- Jubiquat™ CLC

### SERVICES

We offer research, development, antimicrobial efficacy studies and custom manufacturing services for antimicrobial formulations for various personal care applications.

## PRODUCT PORTFOLIO

### Jubiquat® CPC

#### Cetyl Pyridinium Chloride

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

- A solid, white coloured cationic quaternary pyridinium compound used as antimicrobial and cationic surfactant in various oral care, cosmetics & toiletries, pharmaceutical and home care products.
- Broad spectrum antimicrobial specially effective 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
- Liquid Soap & 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 %.
- In all 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

### Zinc Pyrithione 50% FPS

#### An Effective Solution To Your Dandruff Problems

- An aqueous suspension of very fine ZPTO particles yields a stable homogenous dispersion and enhances formulation feasibility & stability
- Broad-spectrum anti-dandruff compound effective against fungi, bacteria and moulds.
- Also effective against odour causing bacteria on the skin
- Used in various rinse-off and leave-on hair & skin care products
- Provides dandruff relief and improved scalp health
- Excellent compatibility with surfactants and alkaline cosmetic formulations

#### Product Variants

- D 90< 1 micron and D 90< 2 micron
- With Common Preservative
- With Eco Friendly Preservatives
- Preservative Free
- ZPTO FPS with '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 & Deodrant 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 pH7 water): 6.5 - 9.0
- Particle Size (Malvern 2000): 2 microns 90% < or less

#### **Dose Levels (Based on active)**

- Hair-Care
- Leave-on Applications: 0.1% - 0.25%
  - Rinse-off body wash products: 0.25% - 0.50%
  - Rinse-off Applications: 0.50% - 1.0%

#### **Jubithione® ZPZ**

#### **An Advance, Highly efficacious & Eco-friendly Solution to Your Dandruff Problems**

- ZPTO based Patented Technology with zinc complex as vitamin supplement
- An aqueous, ready to use, preservative free, synergistic anti-dandruff composition for scalp (dandruff) treatment with anti-hairfall benefits
- High anti-dandruff activity at very low conc. In comparison to current AD actives, reducing the environmental toxicity impact (effective at 1/3 conc of ZPTO)
- High bio-availability which enhances its efficacy even upto epidermal cells to treat dandruff

- Helps in regulation of mammalian keratinous tissues
- Provides additional sensorial benefits (conditioning, ease of combing, suppleness etc.) and relief from dandruff symptoms (irritation, itching & flaking)

#### **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
- Liquid & Bar Soaps, Opaque Body wash (bubble bath, shower gels etc.)

#### **Dosage Levels**

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

#### **Jubiquat™ CLC**

#### **A novel, synergistic & transparent antimicrobial composition developed for your Dandruff & other Dermal Infection.**

- Broad range of activity against gram(+) and gram(-) bacteria, viruses fungi and yeast.
- Excellent anti-dandruff activity at low concentration of actives.
- Very effective in treating bacterial & fungal dermal infections like psoriasis, eczema, ringworm, athlete's foot, dry skin, dermatitis, tinea and vitiligo.
- Ability to inhibit bio-film growth.
- Significant reduction in total anti-microbial active requirement and thus substantial reduction in environmental toxicity impact.
- Provides additional aesthetic benefits like conditioning, ease of combing, gloss etc.
- Can be used 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.
- Non-irritating opaque 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%

### 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 (TiO<sub>2</sub>, 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%



## 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 antimicrobial formulations 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 biocides, 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.



## OFFICE LOCATIONS

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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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