Jubilant Life Sciences’ Antimicrobial Business offers safer and efficacious solutions for Paints & Coating, Cosmetics, Personal Care Industry and other Industrial Applications. Our antimicrobial product range is completely backward integrated through its greener pyridine chemistry & Life science chemicals. With complete quality control, ISO certified plants, backward integration with internationally acceptable standards and technical services, we are a trusted 'Partner of Choice' for our globally renowned customers in the Paints & Coating and other allied industries like Textile & Polymer, Gypsum Board etc.

**Our offerings are**

1. **Products**
   - Our range of antimicrobial under the brand name Jubithione® includes:
     a) Jubithione® ZPZ 40%
     b) Zinc Pyrithione 40% (Jubithione® ZPT)
     c) Copper Pyrithione (Jubithione® CuPT)
     d) Sodium Pyrithione 40% (Jubithione® NaPT)
     e) Per Acetic Acid 15%
     f) Jubithione® ZPB
     g) Jubithione® NPB

2. **Services**
   - We offer research, development, antimicrobial analyses and contract manufacturing services for customized antimicrobial formulation for various industrial applications.

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### Jubithione® ZPZ

**An Advance, Effective, Low Leaching and Eco-Friendly Antimicrobial Composition For Paints & Coating Applications**

An aqueous, ready-to-use, synergistic biocidal composition and preservation system. Excellent anti-microbial activity against fungi, bacteria and algae with significant reduction in total anti-microbial active requirement. High and prolonged efficacy due to very low leaching rate in comparison to other paint biocides. Eco-friendly and Preservative free. Helps in prevention of in-can discoloration, commonly occurs in ZPTO containing formulations due to the formation of heavy metal pyrithione salts.

**End Applications**
- Decorative and Marine (anti-fouling) paints
- Coatings & adhesives
- In-can preservative

**Specifications**
- Appearance: White to off-white aqueous suspension
- Total Solid Content: 36-40%
- pH (5% active ingredient in pH 7 water): 6.50 - 7.50

**Dosage Levels (Active Basis)**
We recommend maximum dose levels for the product as:
- Indoor Paints (asactive): 0.1% - 0.25%
- Exterior Paints (asactive): 0.25% - 0.3%
- In-can Preservative: 0.1% - 0.25%

### Jubithione® ZPT 40

**Zinc Pyrithione 40% FPS**

An Effective Solution For Interior & Exterior Paints

Jubithione® - ZPT 40 (Zinc Pyrithione 40% FPS), is a ready-to-use, white to off-white coloured aqueous suspension for effective Dry film biocidal efficacy with potent antimicrobial activity against fungi and bacteria as well as activity against algae.

**End Applications**
- Paints & Coating as:
  - Dry Film preservative
  - In-can preservative

**Specifications**
- Appearance: White to off-white aqueous suspension
- Zinc Pyrithione %: 38-40%
- pH (5% active ingredient in pH 7 water): 8.75 - 9.75

**Dosage Levels**
Suggested concentration in:
- Indoor Paints: 0.5%
- Outdoor Paints: 1.0%

### Jubithione™CuPT

**Copper Pyrithione**

A Trusted Solution For Marine Antifouling Products

Ships, fishnets or other underwater structures or equipment tends to be attacked by aquatic organisms such as barnacles, mussels and algae etc. In the case of a ship’s hull, the growth of marine organisms on the hull can increase the frictional resistance between the hull and water, thus increasing fuel consumption by 80% and reducing the speed of the ship significantly. Jubithione CuPT is the most preferred solution for such problems.
**Jubithione® CuPT**
- Solid olive green powder ready for direct incorporation in customer's formulations
- Broad spectrum antimicrobial with excellent anti-algal efficacy
- Non VOCs and excellent heat and pH stability
- Low water solubility & low leach rate providing long term protection

**End Applications**
- Marine and Yacht Antifouling Paint
- Algal Protections on fish fishnet Coatings

**Specifications**
- Assay (% w/w): Not less than 96.0
- Copper content (% w/w): 18.5 - 20.0
- pH (5.0% slurry in pH 7.0 water): 6.0 - 9.0

**Dosage Levels**
- Powder as active: 2-4 % w/w

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**Jubithione® ZPB**

Synergistic anti-microbial active & Preservation System for Paint & Coating Applications

Jubithione® ZPB is an aqueous, ready to use, broad spectrum, cost effective synergistic bactericide-fungicide developed in-house for paints & coatings and preservation applications. It is a synergistic composition of 1,2-Benzisothiazolin-3-one (BIT) and Zinc Pyrithione (ZPTO) which functions with a dual mode of action to increase bio-availability of active ingredients and thus shows high biocidal efficacy at very low concentration.

**End Applications:**
- In-can and Interior Dry film preservative
- Synthetic Polymer Emulsions
- Emulsion Paints
- Water based Adhesives
- Aqueous Pigment slurries/dispersions
- Printing inks
- Textile-Auxiliary substances.

**Dose Levels:**
- Synthetic Polymer emulsion: 0.08% - 0.35%
- Emulsion Paints: 0.08% - 0.35%
- Water based Adhesives: 0.08% - 0.35%
- Aqueous Pigment slurries/dispersions: 0.08% - 0.3%
- Textile Auxiliary substances: 0.1% - 0.3%

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**Jubithione® NPB**

Synergistic, Eco-friendly anti-microbial System for In-Can Preservation

Jubithione® NPB is an aqueous, ready to use, broad spectrum, cost effective synergistic bactericide-fungicide developed in-house for paints & coatings and preservation applications. It is a synergistic composition of NaPTO & BIT with different modes of action gives a broad spectrum of activity.

**End Applications:**
- Combination of two highly effective active ingredients (NaPTO & BIT) with different modes of action which provides “Complimentary Dual Antimicrobial Action”.
- Excellent anti-microbial activity against bacteria, yeast, fungi and mold.
- Significant reduction of the environmental toxicity due to significant reduction in total anti-microbial active requirement.
- No Labelling requirements as per EUH 208.
- Zero VOC & CMIT, MIT and formaldehyde free formulation.

**Dose Levels:**
- Combination of two highly effective active ingredients (ZPTO & BIT) with different modes of action which provides “Complimentary Dual Antimicrobial Action”.
- Excellent anti-microbial activity against bacteria, yeast, fungi and mold.
- Significant reduction of the environmental toxicity due to significant reduction in total anti-microbial active requirement.
- No Labelling requirements as per EUH 208.
- Zero VOC & CMIT, MIT and formaldehyde free formulation.

**End Applications:**
- In-can and Interior Dry film preservative
- Synthetic Polymer Emulsions
- Emulsion Paints
- Water based Adhesives
- Aqueous Pigment slurries/dispersions
- Printing inks
- Textile-Auxiliary substances.

**Dose Levels:**
- Synthetic Polymer emulsion: 0.08% - 0.35%
- Emulsion Paints: 0.08% - 0.35%
- Water based Adhesives: 0.08% - 0.35%
- Aqueous Pigment slurries/dispersions: 0.08% - 0.3%
- Textile Auxiliary substances: 0.1% - 0.3%

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**Jubithione® NaPT**

Sodium Pyrithione 40%

Jubilant’s Jubithione® NaPT is amber color, clear, 40% aqueous solution of Sodium Pyrithione:

Metalworking fluids are breeding grounds for microorganisms, particularly bacteria and fungi. It causes fluids to deteriorate and degrades the fluid performance; this in turn causes damage to the work piece, cutting tools and fluid handling systems. It can also affect workers by causing foul odors, skin irritation and allergic reactions. These problems can be reduced or eliminated through the proper use of an antimicrobial agent.

- High efficacy against bacteria and fungi
- Offers pronounced growth-inhibiting activity against both Yeasts and molds
- Ready for direct incorporation in customers formulations
- Water soluble
- Used as a wet-state preservative
- Possesses non-irritating and non-sensitizing properties

**End Applications**
- As preservative for Lubricating Fluids
- Anti-fungal agent in Metalworking fluids, leather application, sealants, urethane foams, patching compounds

**Specifications**
- Sodium Pyrithione: 40 - 42% w/w
- pH [neat]: 8.5 - 10.5

**Dosage Levels**
- Dose level for Dry film preservation: 0.5 - 1.25 % w/w
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.

**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, Zone of Inhibition test, Time Kill Test, MIC Studies etc.) and evaluation studies related to biocides, preservatives and product prototypes as per AOAC, 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.