

Freshstat™ Preservative

A versatile, safe & cost effective preservative

Cetylpyridinium Chloride (CPC)



Freshstat™ is an excellent replacement for triclosan, triclocarban, MIT, benzethonium chloride, formaldehyde-donors and parabens in leave on & rinse off cosmetics. Easy to handle and available in multiple forms for formulating needs, Freshstat™ exhibits efficacy against Gram-positive bacteria, Gram-negative bacteria and fungi at very low dosage rates. Soluble, stable, compatible, colorless, and odorless, Freshstat™ is pH neutral.¹ Vertellus manufactures Freshstat™ under cGMP conditions. The Zeeland, Michigan production facility has FSSC 22000, Kosher, and Halal certifications.

Freshstat™ Has an Excellent Safety Profile and Broad Spectrum Efficacy

- ✓ SCCS finalized a favorable opinion for Freshstat™ in cosmetics.
- ✓ Freshstat™ has been safely used for decades in US FDA-approved oral care and food processing applications.
- ✓ Freshstat™ is approved for use as a preservative in cosmetics in Japan, by the Ministry of Health and Welfare.
- ✓ Freshstat™ is negative for skin sensitization potential up to levels of 0.5% in formulation (HRIPT 100 subject test).
- ✓ Freshstat™ degradation studies have demonstrated that Freshstat™ will not persist in the environment.
- ✓ CPC was found effective in preservative efficacy studies over a wide range of organisms (including *S. aureus*, *E. coli*, *P. aeruginosa*, *C. albicans*, *A. brasiliensis*, *C. xerosis*, *C. jeikeium*, *E. gergovia*, *B. cepacia*, etc.) at use levels as low as 0.1% by the PCPC method depending on the nature of the formulation (non-ionic, anionic and cationic), ingredients and additives.

¹In solutions, the pH is 6 and remains stable under a wide variety of conditions.

Vertellus is a global specialty chemicals company focused on the manufacture of ingredients used in pharmaceuticals, personal care, nutrition, agriculture, and a host of other market areas affected by trends favoring “green” technologies and chemistries. Vertellus is the #1 global producer of pyridine and picolines, specialty pyridine derivatives, DEET, castor oil derivatives and systems, and a world leader in vitamin B3, citrate polymer additives and systems as well as a leader in custom manufacturing of agriculture and pharma intermediates and actives. Vertellus benefits from a technically advanced global manufacturing base and has over 1,000 employees. Vertellus is headquartered in Indianapolis, Indiana.

Efficacy

Gram-Positive Bacteria

- *Staphylococcus aureus*
- *Staphylococcus albus*
- *Staphylococcus epidermidis*
- *Streptococcus pyogenes*
- *Streptococcus pneumoniae*
- *Streptococcus 'viridans'*
- *Enterococcus* spp.
- *Stachybotrys chartarum*
- *Corynebacterium diphtheriae*
- *Corynebacterium jeikeium*
- *Corynebacterium xerosis*
- *Mycobacterium phlei*
- *Mycobacterium* spp.
- *Bacillus* spores

Gram-Negative Bacteria

- *Escherichia coli*
- *Campylobacter* spp.
- *Salmonella typhi*
- *Shigella* spp.
- *Proteus vulgaris*
- *Klebsiella pneumoniae*
- *Helicobacter pylori*
- *Aeromonas* spp.
- *Pseudomonas aeruginosa*
- *Pseudomonas stutzeri*
- *Pseudomonas putida*
- *Pseudomonas tolaasii*
- *Salmonella choleraesuis*
- *Enterobacter aerogenes*
- *Enterobacter gergoviae*
- *Burkholderia cepacia*

Mold and Fungi

- *Aspergillus niger*
- *Geotrichum candidum*
- *Candida albicans*
- *Trichophyton mentagrophyte*

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