

FURA-P Antimicrobial Fragrance

**[FURA-P] comes in six fragrance variants
- that enhances antimicrobial effects -**

Do you want to cut back on the level of preservatives?
Do you feel preservatives are better avoided as far as possible?
If you answer yes to at least one of the above questions,
[FURA-P] will help you to provide a solution.

We tested a wide range of fragrance materials and we found that some of them have substantially low MIC (Minimum Inhibitory Concentration) values.

A compounded functional base [FI 647] was developed using these microbiologically effective ingredients. [FURA-P] is a series of fragrances formulated using [FI 647] and provides a variety of fragrance options for your products.

When the MIC value is used as an index, [FURA-P] exhibits the efficacy equal to or greater than that of known preservatives used for cosmetics.

[FURA-P] is able to exert control over microorganisms and is recommended for a variety of cosmetic preparations.



[FURA-P] showed a growth inhibitory effect equal to or greater than that of a common preservative.

Table 1: MIC (ppm) of FURA-P and Methylparaben

	<i>Escherichia coli</i>	<i>Pseudomonas aeruginosa</i>	<i>Staphylococcus aureus</i>	<i>Candida albicans</i>	<i>Aspergillus niger</i>
FURA-P01	1250	5000	1250	630	320
FURA-P02	1250	5000	1250	630	320
FURA-P03	1250	5000	2500	630	320
FURA-P04	2500	2500	1250	320	160
FURA-P05	2500	5000	1250	630	160
FURA-P06	2500	5000	1250	320	160
Methylparaben	1250	2500	5000	1250	320

The efficacy of compounded functional base [FI 647], the key constituent of [FURA-P], was demonstrated in three representative cosmetic preparations (water-based clear skin lotion, o/w face cream, and shampoo).

[FI 647] gives an equal preservative effect against *E. coli*, *P. aeruginosa*, *S. aureus* and *C. albicans* at a level smaller than 20% of that of preservatives commonly used.

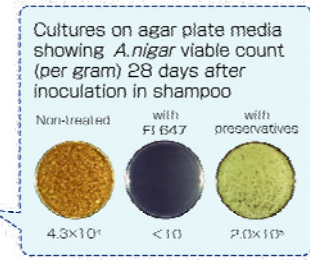
It gives an outstanding preservative effect in shampoo and face cream against *A. niger* in comparison to parabens.

Tested in accordance with "Preservatives-Effectiveness Tests",
the Japanese Pharmacopoeia, Fourteenth Edition



Table 2: Results of Preservatives-Effectiveness Tests
The viable count (per gram) of microorganisms at the start of tests and 28 days after inoculation

			<i>Escherichia coli</i>	<i>Pseudomonas aeruginosa</i>	<i>Staphylococcus aureus</i>	<i>Candida albicans</i>	<i>Aspergillus niger</i>
Initial			7.1×10^5	8.1×10^5	5.8×10^5	5.0×10^5	1.4×10^5
After 28 days	Skin lotion	Non-treated	<10	<10	<10	<10	3.1×10^5
		With FI 647 ¹⁾	<10	<10	<10	<10	<10
		With preservatives ²⁾	<10	<10	<10	<10	<10
	Face cream	Non-treated	<10	<10	<10	1.7×10^5	3.7×10^5
		With FI 647 ³⁾	<10	<10	<10	<10	<10
		With preservatives ⁴⁾	<10	<10	<10	<10	5.3×10^5
	Shampoo	Non-treated	<10	<10	<10	<10	4.3×10^5
		With FI 647 ³⁾	<10	<10	<10	<10	<10
		With preservatives ⁵⁾	<10	<10	<10	<10	2.0×10^5



- 1) FI 647: 0.01% 2) Methylparaben: 0.1%, Phenoxyethanol: 0.2%
3) FI 647: 0.04% 4) Methylparaben: 0.15%, Propylparaben: 0.03%, Butylparaben: 0.03% 5) Methylparaben: 0.2%, Propylparaben: 0.05%

Product Information

Fragrance type		FURA-P01	FURA-P02	FURA-P03	FURA-P04	FURA-P05	FURA-P06
		Fruit Cocktail	Blue Forest	White Floral	Green Breeze	Energy Herb	Luxury Floral
Recommended use level (%) ¹⁾	Skin lotion	0.025~	0.025~	0.025~	0.05~	0.05~	0.05~
	Face cream	0.10~	0.10~	0.10~	0.20~	0.20~	0.20~
	Shampoo	0.10~	0.10~	0.10~	0.20~	0.20~	0.20~
Maximum use level (%) ²⁾	Leave-on	0.15	0.15	0.15	0.3	0.3	0.3
	Rinse-off	0.15	0.15	0.15	0.3	0.3	0.3
	Non-skin contact	1.50	1.50	1.50	3.0	3.0	3.0
INCI		FRAGRANCE					

- 1) The recommended use levels are just for your guidance and no warranty is given to them. Since the expected efficacy tends to vary with product type, careful testing of FURA-P in your own product design is strongly recommended to secure desirable performance.
2) The maximum use levels are calculated based on the self-restrictive IFRA (International Fragrance Association) Standards.
The product specification for each of FURA-P is available upon request.

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