



Lonzaserve[®] PC

Broad Spectrum Activity for Maximum Preservation



NCI: DMDM Hydantoin (and) Methylchloroisothiazolinone
(and) Methylisothiazolinone

Key Product Benefits

- Stable, synergistic, patented blend
- Colorless liquid preservative
- Low isothiazolinone levels in end products (< 1 ppm)
- Ultra-low free formaldehyde (< 0.09 %)
- Safe toxicology profile
- Broad spectrum efficacy
- Effective against formaldehyde and isothiazolinone resistant organisms
- Neutral pH
- Color stability
- Ease of handling
- Compatible and soluble in virtually all raw materials
- Aqueous, non-freezing blend

Recommended Use Level

0.05–0.2 %

Description

Lonzaserve[®] PC is a unique blend of two chemistries which combined offer synergistic properties. The blend offers broad spectrum activity with the combination of DMDM Hydantoin and MCI/MI chemistries. This unique blend of materials is both a highly stable as well as patented formulation.

Compositional Breakdown

Chemical Compound Breakdown	CAS No.	EINECS No.
DMDM Hydantoin	6440-58-0	229-222-8
Methylchloroisothiazolinone	26172-55-4	247-500-7
Methylisothiazolinone	2682-20-4	220-239-6
Water	7732-18-5	231-791-2

Chemical Compound Breakdown	%
DMDM Hydantoin	71%
Methyl chloroisothiazolinone	0.04%
Methylisothiazolinone	0.01%
QS water	28.95%

Applications

- Anhydrous
- Body wash
- Conditioner
- Cream
- Deo/Anti-Perspirant
- Eye creams/gels
- Eye shadow
- Face lotion
- Face wipes
- Facial cream
- Foundation
- Hair gel
- Hand soap (non anti-bac)
- Lotion
- Makeup remover
- Mascara
- Oil in Water
- Powder
- Shampoo
- Sun Care
- Toner
- Water in Oil

Efficacy

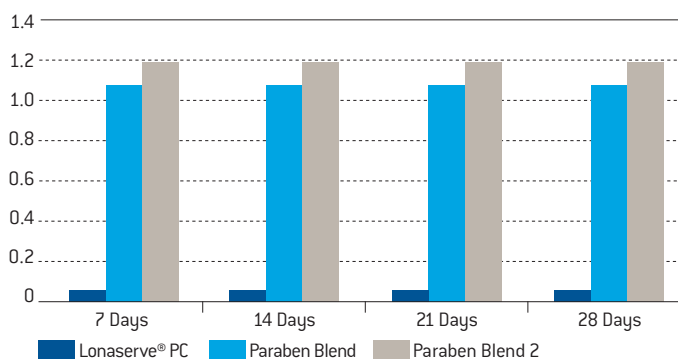
Studies were run using different concentrations of Lonzaserve® PC in various formulations to see efficacy against various bacteria, yeast and fungi. All samples were inoculated at the beginning of the study, sampled at 7, 14, 21 and 28 days.

Anionic Protein Shampoo

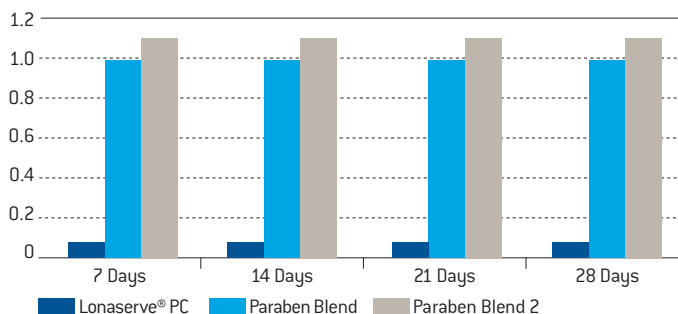
pH: 7

Ingredient	%W/W
Sterile DI Water	36.0%
Sodium Lauryl Ether Sulfate	35.0%
Triethanolamine Lauryl Sulfate	25.0%
Coco Diethanolamine	3.0%
Anhydrous Protein	1.0%
Total	100.00%

Percent of Lonzaserve® PC required to achieve < 10 cfu/g of mixed bacteria in anionic shampoo



Percent of Lonzaserve® PC required to achieve < 10 cfu/g of mixed fungi in anionic shampoo

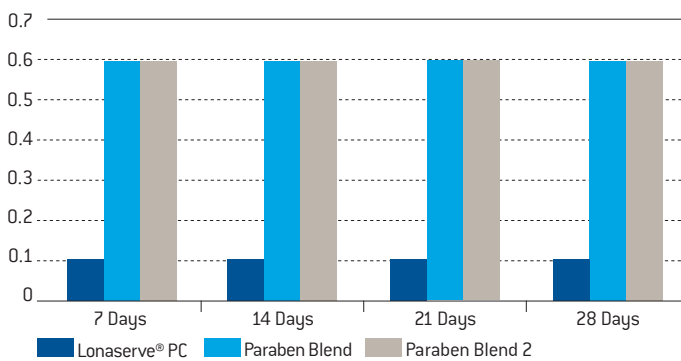


Non-Ionic Cream

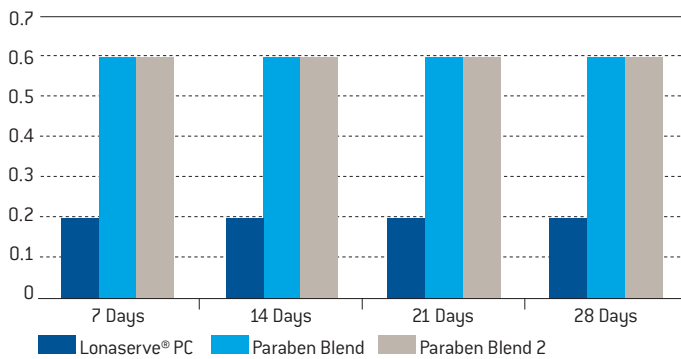
pH: 6

Ingredient	%W/W
Aldospense®	4.0%
Aldo® MSC	6.0%
Cetearyl Alcohol	1.5%
Lonzest® 143-S	8.0%
Glycon G	5.0%
Water	Q.S.
Total	100.00%

Percent of Lonzaserve® PC required to achieve < 10 cfu/g of mixed bacteria in a nonionic cream



Percent of Lonzaserve® PC required to achieve < 10 cfu/g of mixed fungi in a nonionic cream



Global Regulatory

Europe

- Not permitted for leave-on products. Maximum use level of 0.0015 % CMI/MI for rinse-off applications

Japan

- Max use level of 0.3 % DMDMH and 0.01 % CMI/MI for rinse-off
- Not permitted for leave-on due to CMI/MI

US

- Max use level of 0.6 % DMDMH and 0.00075 % CMI/MI for leave-on
- Max use level of 0.6 % DMDMH and 0.0015 % CMI/MI for rinse-off

General

- Not allowed for oral hygiene and lip products or in preparations for children under the age of 3

Formulation Recommendations

- Readily soluble in aqueous phase, as well as in polar organic solvents
- Reducing agents, amines and strong nucleophiles will reduce activity of MCI/MI
- When used with amines, pH should be below 6 before addition
- Surfactants should be checked for residual bisulfite before addition
- Should be added during the cool down phase of processing, at temperature of 50°C or below
- pH: 3–9

Typical Properties

Appearance	Liquid
Color	Colorless
Odor	Odorless

USA

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