MICROCARE® PM3

preservative formulated for

personal care applications

General Description

Microcare PM3 is a synergistic combination of 3 parabens offering broad spectrum microbiological protection of cosmetics and toiletries. The formulation is offered as a liquid preparation in phenoxyethanol for ease of handling and formulation in the final product.

Chemical Identification

Active ingredients:	2-phenoxyethanol Ethyl 4-hydroxybenzoate Methyl 4-hydroxybenzoate Propyl 4-hydroxybenzoate
INCI name:	Phenoxyethanol *(and)* Ethylparaben *(and)* Methylparaben *(and)* Propylparaben

Typical Chemical and Physical Characteristics

Appearance:	Liquid
Miscibility:	Readily miscible with glycols and alcohols. Limited solubility in water.

Note: *These figures do not constitute a specification*

Preservative Properties

The ratio of the three parabens components in **Microcare PM3** gives optimum control of bacteria and moulds over a wide pH range (4-8). **Microcare PM3** is particularly effective in personal care formulations which are known to be difficult to preserve due to the presence of natural organic ingredients such as proteins.

Typical Minimum Inhibitory Concentrations (MIC) for Microcare PM3

Microorganisms	MIC's in ppm
Bacteria	
Pseudomonas aeruginosa	1400
Escherichia coli	1600
Staphylococcus aureus	2100
Yeast	
Candida albicans	2400
Mold	
Aspergillus brasiliensis (niger)	4100

MIC determinations carried out according to Thor standard test methods.

Recommended Use Levels

Microcare PM3 is recommended for use in most types of rinse off and leave on personal care products in the range 0,25% to 1,0% and can be used over a wide pH range (4-8). These concentrations are well within the maximum permitted level for **Microcare PM3** which is 1,3%.

Microcare PM3 can be readily incorporated into the lipid phase before emulsification or after the emulsion at the end of the manufacturing process.

Products such as shampoos, liquid soaps and creams typically require addition levels between 0,3% and 0,7%. Products regarded as difficult to preserve and non-ionic surfactant based emulsions may require up to 1,0% for effective protection.

Since there is considerable variation in the composition of cosmetics and toiletries, formulators should confirm the level required to ensure protection and prevent any potential incompatibility.

Application Areas

Microcare PM3 may be used in a wide range of personal care applications, including:

- Shampoos
- Hair conditioners
- Styling gels
- Liquid soaps
- Bath gels
- Moisturising creams
- Body creams and milks
- Mascara
- Suntan lotions
- Eyeliners
- Lipsticks

Toxicology

Microcare PM3 is considered to be non-toxic and safe for use in personal care applications in normal and reasonably foreseeable conditions of use at recommended levels.

A safety assessment is available upon request.

Regulatory Status

Microcare PM3 is allowed in Europe up to 1,3% except for leave on products for the nappy area of children. It was found safe by CIR in USA up to 1,3% and is also allowed in Japan up to 1,3%.

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Technical Support

Thor personal care laboratories are fully equipped to provide complete support in microbiology, analytical testing, formulation and *in vitro* toxicology for all product applications.

Further Information

For further information please contact your local Thor personal care representative.

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MICROCARE®

THOR PERSONAL CARE SAS

147, rue Irène Joliot-Curie · Boîte Postale 90875 La Croix Saint Ouen
F-60208 Compiègne Cedex · FRANCE
Tel: 33 (0)3 44 37 40 00 · Fax: 33 (0)3 44 37 09 00
Email: thor.hpc@thor.com · www.thor.com

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