# MICROCARE® PHD

preservative formulated for all

personal care applications

## General Description

**Microcare PHD** is a broad spectrum formaldehyde and parabens free liquid preservative for the control of bacteria, yeasts and moulds. It may be used for both rinse off and leave on applications and is particularly suitable for acid to neutral pH preparations.

## Chemical Identification

| | |
|---|---|
| Active ingredients: | 2-Phenoxyethanol<br>1,2-Decanediol |
| INCI names: | Phenoxyethanol *(and)*<br>Decylene glycol *(and)*<br>Propylene glycol |

## Typical Chemical and Physical Characteristics

| | |
|---|---|
| Appearance: | Clear colourless to light yellowish liquid |
| Miscibility (25°C): | Not miscible in water; miscible in glycerine and glycols |

Note: *These figures do not constitute a specification*

## Multifunctional Properties

**Microcare PHD** has been formulated to contain an emollient which assists and extends the antimicrobial activity towards a range of gram positive and gram negative bacteria, and confers excellent fungicidal activity for the additional control of moulds and yeasts. This is particularly important for products with pH values below neutral. This glycol also potentiates the efficacy of the phenoxyethanol.

## Minimum Inhibitory Concentrations (MIC) for Microcare PHD

| Microorganisms | MIC's in ppm |
|---|---|
| **Bacteria** | |
| *Pseudomonas aeruginosa* | 7400 |
| *Escherichia coli* | 5200 |
| *Staphylococcus aureus* | 6000 |
| **Yeast** | |
| *Candida albicans* | 3600 |
| **Mold** | |
| *Aspergillus brasiliensis (niger)* | 1400 |

MIC determinations carried out according to Thor personal care standard test methods.

## Formulation guide

**Microcare PHD** should be used typically in the range 0,8 – 1,5%. **Microcare PHD** will tolerate hot processes such as emulsion preparation and is stable in the presence of acids and alkalis. It can be incorporated either before or after emulsification but at temperatures not exceeding 80°C as prolonged heating should be avoided to prevent loss by evaporation. **Microcare PHD** can be used over a wide range of pHs and is compatible with most cosmetic ingredients. However, since there is considerable variation in the composition of cosmetics and toiletries, Thor Technical Centres can assist formulators to determine the optimum level of addition to ensure protection of their products.

## Application Areas

**Microcare PHD** may be used in a wide range of products including:

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

## Toxicology

**Microcare PHD** is safe for use in personal care applications in normal and reasonably foreseeable conditions of use at recommended levels.

## Regulatory Status

The ingredients of **Microcare PHD** are approved for use in the EU, the USA and Japan.
The maximum permitted level of **Microcare PHD** is 2% for all applications in the EU, the USA and Japan.

## Technical Support

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

## 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.

## Further Information

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

MICROCARE®

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