



### INCI

Methylparaben, Ethylparaben, Propylparaben, Butylparaben, Isobutylparaben, Phenoxyethanol

### Appearance

Transparent, viscous liquid

### Solubility

Readily miscible with glycols and alcohols; limited solubility in water

### Formaldehyde free

### Halogen free

Phenochem is a highly effective preservative blend consisting of Methyl, Ethyl, Propyl, Butyl and Isobutyl esters of 4-hydroxybenzoic acid dissolved in monophenylglycol ether (2-phenoxyethanol). The blend has both a low-toxicity profile and displays very low irritation to the skin, eyes or mucous membranes when used at recommended concentrations. These features make it an excellent choice for most types of rinse-off and leave-on personal care products. Some of Phenochem's applications include shampoo, hair conditioner, styling and bath gels, liquid soap, moisturizing cream, body cream and milks, mascara, suntan lotion, eyeliner, and lipstick.

The most important features of Phenochem include:

- Compatibility with most of the raw materials commonly used in the personal care industry
- Stability over a wide pH range: 3 to 8
- Stability at elevated temperatures
- Non-volatile liquid form, making it easy to handle

The synergistic nature of the mixture enables Phenochem to be far more effective at lower concentrations when compared with individual Parabens.

Due to Phenochem's limited solubility in water, we recommend that it be added to one of the organic phases of the formulation. When necessary, incorporation of Phenochem to the water phase may be assisted by heating the water slightly. If Phenochem is used for the preservation of an emulsion, we recommend that its inclusion be divided between the water and oily phases.

The recommended use concentration varies according to the unique composition of each product. However, the following recommendations can be used as guidelines:

- For products with a high-water content: 2500 to 7000 ppm
- For emulsions, w/o and o/w: 4000 to 9000 ppm
- For products with a high-protein concentration, use levels of up to 13500 ppm are recommended

### SOLUBILITY (GR/100 ML AT 20°C)

Water	0.5
Ethanol	soluble
Ethanol 50%	95.0

Glycerine	10.0
Propylene glycol	soluble
Peanut oil	25.0

### MINIMUM INHIBITION CONCENTRATIONS (MIC) FOR PHENOCEM

Microorganism	Type	MIC (ppm)
Burkholderia cepacia	Bacteria Gram -	1000
Escherichia coli	Bacteria Gram -	1750
Pseudomonas aeruginosa	Bacteria Gram -	1500
Bacillus cereus	Bacteria Gram +	1125
Staphylococcus aureus	Bacteria Gram +	1500
Staphylococcus epidermidis	Bacteria Gram +	1500
Aspergillus niger	Mold	1250
Candida albicans	Yeast	1000