

ACNIBIO[®] MXR

PRODUCT DATA SHEET

ACNIBIO[®] MXR is a biodegradable wide spectrum biocide for use in cost-effective cosmetics and toiletries formulations. It is active against all types of spoilage organisms that may be responsible for the degradation of aqueous media and emulsions.

Its active ingredients are two Isothiazolones in synergetic proportions, enriched with magnesium salts, to give strong efficacy and stability.

TECHNICAL DATA

Appearance:	Colourless to pale yellow liquid
Specific weight:	1.10 - 1.15 g/ml
pH (when produced):	2.0 - 4.0
Solubility:	Soluble in water, alcohols, glycols and polar solvents
Toxicity:	LD ₅₀ : > 4500 mg/Kg (oral in rat)

CHEMICAL COMPOSITION

CHEMICAL NAME	EMPIRICAL FORMULA	M. W.	% WT.
5-Chloro-2-methyl-4-isothiazolin-3-one	C ₄ H ₄ ClNOS	149.62	≥ 1.15 %
2-Methyl-4-isothiazolin-3-one	C ₄ H ₅ NOS	115.15	≥ 0.35 %
TOTAL ISOTHIAZOLONE CONTENTS			≥ 1.50 %

APPLICATION

ACNIBIO[®] MXR is suitable for all cosmetics (creams, masks, make up...) and toiletries (conditioners, gels, shampoos, surfactants, cleaners, detergents, soaps).

In hot processes it is advisable to add the preservative during the cooling stage at a temperature no greater than 60°C, and preferably below 40°C.

In rinse-off products, the maximum advised (permitted in some regulations) level is 0.1 % of biocide (15 ppm of active ingredients) and, for leave-on products, a maximum of 0.05 % of the biocide (7.5 ppm of active ingredients) is advised.

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In case of incorporating this preservative into a new formulation, we advise to make tests at different dosages inside this range, in order to find the most adequate concentration for each formulation.

WHY USE ACNIBIO MXR

- It has a broad spectrum of activity, which is very effective due to its characteristic composition, even at very low concentrations.
- It is fully compatible with all surfactants regardless of the type (ionic or non-ionic).
- Environment friendly due to its very low toxicity and high biodegradability, decomposing into non toxic basic molecules.
- It is easily incorporated in cosmetic formulas, since it is supplied as an aqueous solution.
- Does not accumulate, since its easy degradation prevents accumulation of its components in living beings.
- Does not affect odour or appearance of cosmetics due to low concentrations of use.
- Completely effective over the entire pH range commonly used in cosmetics.
- Completely miscible in water, light alcohols and glycols.

MICROBIOLOGICAL ACTIVITY OF ACNIBIO® MXR

The following table shows the lowest level of **ACNIBIO® MXR** that inhibited the growth of the test organisms.

MICRO-ORGANISM	MIC(ppm)
Gram Negative Bacteria:	
<i>Escherichia coli</i>	300
<i>Proteus vulgaris</i>	300
<i>Pseudomonas cepacia</i>	300
<i>Salmonella typhimurium</i>	335
<i>Klebsiella pneumoniae</i>	335
<i>Enterobacter aerogenes</i>	335
Gram Positive Bacteria	
<i>Bacillus Cereus mycoides</i>	170
<i>Bacillus subtilis</i>	170
<i>Staphylococcus aureus</i>	130
<i>Staphylococcus epidermidis</i>	300

MICRO-ORGANISM	MIC(ppm)
FUNGI	
<i>Aspergillus niger</i>	600
<i>Rhizopus stolonifer</i>	300
<i>Penicillium funiculosum</i>	300
<i>Mucor rouxii</i>	300
YEASTS	
<i>Candida albicans</i>	300
<i>Saccharomyces cerevisiae</i>	170
<i>Rhodotorula rubra</i>	170

INCI Name: Methylchloroisothiazolinone (and) methylisothiazolinone