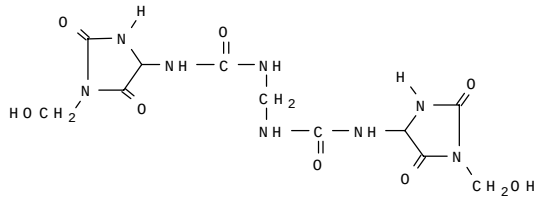
Abiol

Preservative



Chemical and physical characteristics (*)

Chemical Name	1,1'-Methylenebis[3-[3-(hydroxymethyl)-2,5-dioxo-4-imidazolidinyl]urea]
INCI NAME	Imidazolidinyl Urea
Empirical formula	$C_{11}H_{16}N_8O_8$
Molecular weight	388.3
Appearance	Odorless, hygroscopic white fine powder
Nitrogen (calculated on dried basis)	26-28%
pH (1% water solution)	6.0-7.5
Solubility (at 25°C)	very soluble in water and glycerin low solubility in oils and ethanol

(*) Typical values not qualified for quality control purpose

Applications

ABIOL is a safe and widely used preservative with good activity against Gram-positive and Gram-negative bacteria (Table 1). It is stable in a broad range of pH and compatible with surfactants and protein derivatives.

The synergy between ABIOL and parabens provides a broad-spectrum preservative system, effective against bacteria as well as mold and yeasts. The addition of EDTA salts can improve the efficacy of the system. A typical combination is:

0.3% ABIOL
0.2% Methylparaben
0.1% Propylparaben

The combination of ABIOL and parabens can be employed in a wide variety of products such as lotions, creams, gels, shampoo and make-up products. These products must be tested in the specific formulation in which it is intended to be used.

Use

During the preparation of products requiring hot processing, it is recommended to add ABIOL during the cool down phase at a temperature below 60°C, in order to avoid heat degradation.

Table 1 - Minimal inhibitory concentration (M.I.C.) of ABIOL

GRAM-POSITIVE BACTERIA	%
Bacillus cereus var. mycoides ISM 65/42	0.01
Bacillus subtilis ATCC 6633	0.01
Sarcina lutea ATCC 9341	0.01
Staphylococcus epidermidis BB 0223	0.01
Staphylococcus aureus ATCC 6538P	0.01
Staphylococcus faecalis ATCC 8043	0.01
GRAM-NEGATIVE BACTERIA	
Eschericia coli ATCC 10536	0.06
Klebsiella pneumoniae ATCC 10031	0.01
Proteus mirabilis ATCC 10005	0.01
Pseudomonas aeruginosa ISM 68/19	0.08
Salmonella typhimurium ATCC 15277	0.01
Salmonella cholerae suis ATCC 10708	0.01
Serratia marcensens BB 0045	0.01
FUNGI	
Aspergillus niger BB 015	1.0
Aureobasidium pullulans ATCC 9348	1.0
Candida albicans ATCC 10231	1.0
Candida utilis BB 0173	1.0
Rhodotorula rubra ISM 7198	1.0
Penicillium funicolosum ATCC 9644	1.0
Saccharomyces cerevisiae BB 0193	1.0
Trichophyton gallinae RV 34151	1.0

Toxicological information

LD_{50} (oral)	4000 - 10000 mg/kg
Acute percutaneous toxicity	> 4000 mg/kg
Skin irritation	non-irritant
Eye irritation	non-irritant
Genotoxicity (Ames test):	absence of mutagenicity

Transport, storage and handling

Labeling: Product is not classified as hazardous according to international transport regulations. Store in the original closed container in a dry cool place. Protect from moisture. Avoid breathing dust and contact with skin, eyes and mucous membranes. In case of contact, wash immediately with plenty of water.

Regulatory status

EEC: 768/76 Directive Annex VI Part I No. 27

For further information, please refer to safety data sheet.

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