

TECHNICAL SUPPORT SPECIAL ADDITIVES INTERNATIONAL

the plus of pure
performance

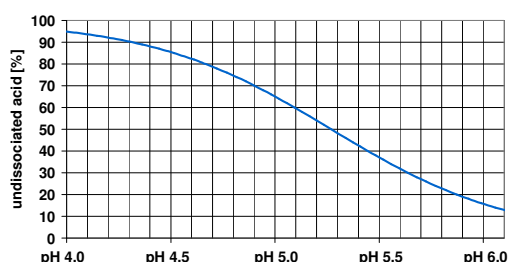
The influence of the pH on the performance of euxyl® K 703

euxyl® K 703 is a cosmetic preservative based on the actives phenoxyethanol, benzoic acid and dehydroacetic acid.

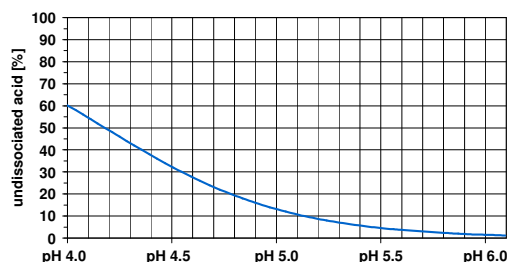
euxyl® K 703 should be used at a pH value ≤ 5.5 . The efficacy depends on the pH-value. The efficiency is increased by reducing the pH-value. Only the free organic acids are biocidal active. The dissociated organic acids are completely ineffective. The efficacy of phenoxyethanol is independent from the pH value.

The following graphs show the amount of undissociated acid depending on the pH for benzoic acid and dehydroacetic acid.

Dehydroacetic acid (pK_a 5.27)



Benzoic acid (pK_a 4.18)



The following table summarises the availability of undissociated acids for the use of euxyl® K 703.

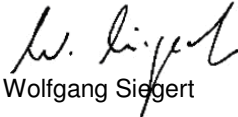
pH	Amount undissociated acid		
	Benzoic acid	Dehydroacetic Acid	Sum of acids from euxyl® K 703
4.0	60%	95%	73%
4.5	32%	85%	52%
5.0	13%	64%	31%
5.5	4%	39%	17%
6.0	1%	16%	7%

The efficacy and optimum use-concentration should always be determined in the end product with the aid of a preservation load test. Additionally highly acidic products should be tested for their skin tolerance.

In w/o emulsions the pH has to be adjusted already in the water phase. The oil phase must be free of alkalinescent compounds.

For the production of wet wipes it is absolutely essential to adjust the pH in the squeezed wet wipe liquid. The nonwovens qualities have a different buffer capacity, they often increase the pH.

Norderstedt 07/06/2013


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