

who has
made-for-me
antimicrobials?

—
we do.



ashland.com / efficacy usability allure integrity profitability™

notes

- a Active ingredients without auxiliaries. For full INCI declaration kindly contact us.
- b Nonionic surfactants might decrease efficacy.
- c Sorbic Acid can cause yellowing.
- d Avoid formulations of nitrosamines.
- e The efficacy will be reduced with ethoxylated surfactants.
- f EU: Not to be used in aerosol dispensers (sprays).
- g EU: Not to be used in applications that may lead to exposure of the end-user's lungs by inhalation.
- h EU: Not to be used in leave-on products designed for application on the nappy area of children under three years of age.
- i EU: Not to be used in oral and lip products; Not to be used in products for children under 3 years of age, except in bath products/shower gels and shampoo; Not to be used in body lotion and body cream. Approved concentrations for specific applications should be verified.
- j EU: Approved only for rinse-off products.
- k EU decision expected soon: Finished product must be labelled with the warning 'releases formaldehyde' where the concentration of free formaldehyde in the finished product exceeds 10 ppm.
- l Japan: Not permitted in products that come into contact with mucous membranes. Required warning: Should not be used by infants or by people who are hypersensitive to formaldehyde.
- m Japan: Not permitted in products that come into contact with mucous membranes.
- n U.S. and Japan: Not for use in aerosols.
- o Avoid cationics and citrus perfumes. Citrus perfumes may lead to discoloration.
- p Proteins, nonionic and highly ethoxylated surfactants might decrease efficiency.
 - 1) Subject to name changes.
 - 2) ASEAN: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

we protect the high quality of your cosmetic products

Today's consumer are rightfully demanding when it comes to choosing their preferred personal care products. Selecting the right ingredients that deliver an effective level of protection against bacteria, yeast, and mold; bringing along no legal drawbacks can be the ultimate challenge at present. At Ashland, we are passionate and tenacious solvers who thrive on developing practical, innovative, and elegant solutions in personal care formulations provides all the help needed to select the right antimicrobial.

Ashland's family of antimicrobials offers a variety of solutions for personal care products. Designed to effectively protect and to help manufacturers comply with regulatory requirements. With every product our global team of solvers supports you with extensive technical lab service, in-depth microbiological expertise and application know-how.

Use our intuitive antimicrobial selector tool to find the perfect solution for your needs. The dynamic criteria help you to select from a wide range of technologies, and the news section keeps you tuned into latest trends.

Visit ashland.com/antimicrobialselector to learn more.

available in six categories

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who is the safety belt for
personal care products?

—
we are.





progressive preservatives

As personal care product manufacturers sell to an increasingly global client base, reliable and effective antimicrobials are needed to protect under various conditions. Ashland's progressive preservatives are based on aromatic alcohols and organic acids, approved for use in all major markets and compatible with a variety of formulations. Effective against gram-positive and gram-negative bacteria, yeast and mold, they offer excellent heat stability, work across a wide pH window and are easily solubilized in water.



progressive preservatives

trade name ¹	INCI name	recommended use-concentration	leave-on	rinse-off	wet wipes	pH	max. temperature during production	activity against		features and benefits	acc. EU Cosmetics Regulation	acc. CIR (USA)	acc. ASEAN Cosmetic Directive ²⁾	Technical Safety Standards for Cosmetics (TSSC 2015) (China)	acc. Mercosur ³⁾	notes
								gram+/gram-bacteria	yeast/mold							
optiphen™ gp preservative	Phenoxyethanol, Propanediol, Propylene Carbonate, Caprylhydroxamic Acid, o-Cymen-5-ol	0.4% - 1.5%	+++	+++	+++	≤8	80 °C	X	X	<ul style="list-style-type: none"> blend with unique delivery system for optimized efficacy contains natural ingredients designed for demanding skin ideal for facial care formulations incl. masks 	max. 2.50%	max. 2.50%	max. 2.50%	max. 2.50%	max. 2.50%	
euxyl™ k 700 preservative	Phenoxyethanol, Benzyl Alcohol, Potassium Sorbate, Aqua (Water), Tocopherol	0.5% - 1.5%	+++	+++	++	≤5.5	80°C (max. 4 hours)	X	X	<ul style="list-style-type: none"> optimized blend with improved color stability contains natural identical ingredients cost efficient allrounder designed for demanding skin 	max. 3.20%	max. 3.20%	max. 3.20%	max. 3.20%	max. 3.20%	
euxyl™ k 701 preservative	Phenoxyethanol, Benzoic Acid, Dehydroacetic Acid, Ethylhexylglycerin	0.4% - 1.2%	+++	+++	+++	≤6	80°C (max. 4 hours)	X	X	<ul style="list-style-type: none"> optimized blend boosted by ethylhexylglycerin contains natural identical ingredients ideal mild solution for wet wipes 	max. 1.26%	max. 1.26%	max. 1.26%	max. 1.26%	max. 1.26%	f
euxyl™ k 702 preservative	Phenoxyethanol, Benzoic Acid, Dehydroacetic Acid, Aqua (Water), Polyaminopropyl Biguanide, Ethylhexylglycerin	0.4% - 1.0%	+++	++	+++	≤6	80°C (max. 4 hours)	X	X	<ul style="list-style-type: none"> highly effective blend boosted by ethylhexylglycerin and biguanide contains ethylhexylglycerin for performance boosting contains natural identical ingredients designed for challenging formulations 	max. 1.35%	max. 1.35%	max. 1.35%	max. 1.35%	max. 1.35%	f; g
euxyl™ k 703 preservative	Phenoxyethanol, Benzoic Acid, Dehydroacetic Acid	0.4% - 1.2%	+++	+++	+++	≤6	80°C (max. 4 hours)	X	X	<ul style="list-style-type: none"> market-leading blend of organic acids and aromatic alcohol contains natural identical ingredients highly cost effective ideal for all wet wipe formulations 	max. 1.23%	max. 1.23%	max. 1.23%	max. 1.23%	max. 1.23%	f
rokonsal™ bsp preservative	Phenoxyethanol, Propylene Glycol, Benzoic Acid, Sorbic Acid	0.3% - 1.0%	+++	+++	++	≤5.5	80 °C	X	X	<ul style="list-style-type: none"> blend of organic acids and phenoxyethanol contains natural identical ingredients cost effective ideal for all wet wipe formulations 	max. 2.50%	max. 2.50%	max. 2.50%	max. 2.50%	max. 2.50%	c

+++ highly recommended, ++ recommended, + suitable, - not recommended

Recommended use-concentrations are based on average active content. Please pay attention to the corresponding certificate of analysis.

continued on next page.

progressive preservatives

trade name ¹	INCI name	recommended use-concentration	leave-on	rinse-off	wet wipes	pH	max. temperature during production	activity against		features and benefits	acc. EU Cosmetics Regulation	acc. CIR (USA)	acc. ASEAN Cosmetic Directive ²⁾	Technical Safety Standards for Cosmetics (TSSC 2015) (China)	acc. Mercosur ³⁾	notes
								gram+/gram-bacteria	yeast/mold							
euxyl™ k 720 preservative	Propylene Glycol, Benzoic Acid, Caprylyl Glycol	1.0% - 2.0%	+++	+++	+++	≤5.5	80 °C (max. 4 hours)	X	X	<ul style="list-style-type: none"> aromatic alcohol-free blend with caprylyl glycol contains natural identical ingredient provides skin moisturization no discoloration risk ideal for face and sun care formulations 	max. 2.50% (leave-on) max. 12.50% (rinse-off)	max. 25.00%	max. 2.50% (leave-on) max. 12.50% (rinse-off)	max. 2.50%	max. 2.50% (leave-on) max. 12.50% (rinse-off)	
euxyl™ k 830 preservative	Phenoxyethanol, Ethylhexylglycerin, Octenidine HCl	0.5%-1.0%	+++	+	+++	≤12	120 °C	x	x	<ul style="list-style-type: none"> optimized blend with strong fungicidal effect contains ethylhexylglycerin as performance booster contributes to in-process production hygiene designed for challenging formulations 	max. 1.11%	max. 1.11%	max. 1.11%	-	max. 1.11%	e
euxyl™ k 900 preservative	Benzyl Alcohol, Ethylhexylglycerin, Tocopherol	0.5% - 1.0%	+++	+	+++	≤12	120 °C	x	x	<ul style="list-style-type: none"> counterpart to market-leading euxyl™ pe 9010 preservative contains ethylhexylglycerin as performance booster ideal for emulsions, transparent gels and wet wipe formulations 	max. 1.11%	safe as used	max. 1.11%	max. 1.11%	max. 1.11%	e
euxyl™ k 940 preservative	Phenoxyethanol, Benzyl Alcohol, Ethylhexylglycerin, Tocopherol	0.5% - 1.5%	+++	+	+++	≤12	120 °C	x	x	<ul style="list-style-type: none"> blend with optimized alcohol content for increased usability contains ethylhexylglycerin as performance booster powerful at low use-concentrations designed for challenging leave-on formulations, e.g. sun care 	max. 2.50%	max. 2.50%	max. 2.50%	max. 2.50%	max. 2.50%	e
euxyl™ pe 9010 preservative	Phenoxyethanol, Ethylhexylglycerin	0.5% - 1.0%	+++	+	+++	≤12	120 °C	x	x	<ul style="list-style-type: none"> market-leading preservative blend contains ethylhexylglycerin as performance booster proven to being microbiome gentle designed for all leave-on formulations 	max. 1.11%	max. 1.11%	max. 1.11%	max. 1.11%	max. 1.11%	e
optiphen™ preservative	Phenoxyethanol, Caprylyl Glycol	0.5% - 1.5%	+++	++	+++	≤12	120 °C	x	x	<ul style="list-style-type: none"> blend with reduced aromatic alcohol content contains caprylyl glycol provides skin moisturization compatible with ethoxylated surfactants ideal for leave-on formulations 	max. 1.79%	max. 1.79%	max. 1.79%	max. 1.79%	max. 1.79%	

+++ highly recommended, ++ recommended, + suitable, - not recommended

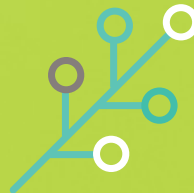
Recommended use-concentrations are based on average active content. Please pay attention to the corresponding certificate of analysis.

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progressive preservatives

trade name ¹	INCI name	recommended use-concentration	leave-on	rinse-off	wet wipes	pH	max. temperature during production	activity against		features and benefits	acc. EU Cosmetics Regulation	acc. CIR (USA)	acc. ASEAN Cosmetic Directive ²⁾	Technical Safety Standards for Cosmetics (TSSC 2015) (China)	acc. Mercosur ³⁾	notes
								gram+/gram-bacteria	yeast/mold							
optiphen™ 200 preservative	Phenoxyethanol, Caprylyl Glycol	0.5% - 1.3%	+++	++	+++	<12	120 °C	x	x	<ul style="list-style-type: none"> well-balanced blend contains caprylyl glycol provides skin moisturization compatible with ethoxylated surfactants ideal for leave-on formulations 	max. 1.35%	max. 1.35%	max. 1.35%	max. 1.35%	max. 1.35%	
optiphen™ plus preservative	Phenoxyethanol, Caprylyl Glycol, Sorbic Acid	0.5% - 1.5%	+++	+++	+++	≤6	80 °C	x	x	<ul style="list-style-type: none"> blend with strong antifungal properties contains caprylyl glycol provides skin moisturization compatible with ethoxylated surfactants ideal for leave-on formulations 	max. 1.91%	max. 1.91%	max. 1.91%	max. 1.91%	max. 1.91%	c
s&m phenoxyethanol rch preservative	Phenoxyethanol	max. 1%	++	++	++	≤12	120°C	x	x	<ul style="list-style-type: none"> market-leading preservative vapor phase activity ideal for all formulations 	max. 1.00%	max. 1.00%	max. 1.00%	max. 1.00%	max. 1.00%	

+++ highly recommended, ++ recommended, + suitable, - not recommended
 Recommended use-concentrations are based on average active content.
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natural and nature-identical

The natural movement continues to drive consumer buying habits, so it's no surprise that marketers also harbor a preference for all things green. In line with this trend Ashland introduced the new phyteq™ brand and its first comprehensive solution phyteq™ raspberry multifunctional to address the customers desire for clean beauty and plant inspired antimicrobial protection. Available as natural or nature-identical technology they are ideal solutions for products aimed at the eco-aware consumer.

Our latest innovation sensiva™ go natural multifunctional is the first 100% natural sensiva™ blend. Based on carefully selected ingredients, sensiva™ go natural multifunctional inheres full-spectrum antimicrobial efficacy and with its proven skin benefits exhibits true multifunctionality.

With effisin™ cg natural multifunctional and effisin™ pg natural multifunctional, Ashland offers the two most important 1,2-diols available on the market based on a 100% natural feedstock. Antimicrobial efficacy, moisturizing, and skin benefits in one product make these products a great alternative to their synthetic counterparts.

Looking for a natural bactericide to boost performance? Then effisin™ la natural multifunctional is your cost-effective go-to product with COSMOS validation.

natural and nature-identical																
trade name ¹	INCI name	recommended use-concentration	leave-on	rinse-off	wet wipes	pH	max. temperature during production	activity against		features and benefits	acc. EU Cosmetics Regulation	acc. CIR (USA)	acc. ASEAN Cosmetic Directive ²⁾	Technical Safety Standards for Cosmetics (TSSC 2015) (China)	acc. Mercosur ³⁾	notes
								gram+/gram-bacteria	yeast/mold							
phyteq™ raspberry n multifunctional	Raspberry Ketone	0.5% – 1.0%	+++	++	++	≤8	80 °C	x	x	<ul style="list-style-type: none"> 100% natural crystalline multifunctional ingredient acc. to ISO16128 strong antioxidant and free radical scavenger benefits improves skin biology - anti-inflammation claim ex vivo ideal for certified natural formulations: COSMOS validated 	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	
sensiva™ go natural multifunctional	Caprylyl Glycol, Glyceryl Caprylate, Propanediol	0.5% - 2.0%	+++	+	+++	≤7	80 °C	x	x	<ul style="list-style-type: none"> natural multifunctional ingredients blend contains 100% natural ingredients acc. to ISO16128 provides moisturizing, emolliency and re-fattig HRIPT tested: ideal for demanding skin designed for certified natural formulations: COSMOS validated 	no restrictions for the use in cosmetics	max. 5.00%	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	
effisin™ cg natural multifunctional	Caprylyl Glycol	0.3% - 2.0%	+++	++	+++	≤12	120°C	x	x	<ul style="list-style-type: none"> 100% natural multifunctional ingredient acc. to ISO16128 provides moisturizing and emolliency compares to synthetic capryly glycol ideal for certified natural formulations: COSMOS validated 	no restrictions for the use in cosmetics	max. 5.00%	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	
effisin™ la natural multifunctional	Levulinic Acid, Aqua (Water)	max. 1.0%	++	++	++	≤5.5	80 °C	x		<ul style="list-style-type: none"> 100% natural multifunctional ingredient acc. to ISO16128 good bactericidal efficacy cost-effective ready-to-process liquid ideal for certified natural formulations: COSMOS validated 	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	
effisin™ pg natural multifunctional	Pentylene Glycol	1.0% – 5.0%	++	++	++	≤12	120°C	x	x	<ul style="list-style-type: none"> 100% natural multifunctional ingredient acc. to ISO16128 provides moisturizing and emolliency compares to synthetic pentylene glycol ideal for certified natural formulations: COSMOS validated 	no restrictions for the use in cosmetics	safe as used	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	

+++ highly recommended, ++ recommended, + suitable, - not recommended

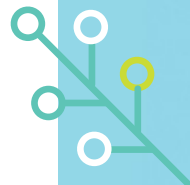
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natural and nature-identical

trade name ¹	INCI name	recommended use-concentration	leave-on	rinse-off	wet wipes	pH	max. temperature during production	activity against		features and benefits	acc. EU Cosmetics Regulation	acc. CIR (USA)	acc. ASEAN Cosmetic Directive ²⁾	Technical Safety Standards for Cosmetics (TSSC 2015) (China)	acc. Mercosur ³⁾	notes
								gram+/gram-bacteria	yeast/mold							
phyteq™ raspberry i multifunctional	Raspberry Ketone	0.5% – 1.0%	+++	++	++	≤8	80 °C	x	x	<ul style="list-style-type: none"> natural-identical crystalline multifunctional ingredient strong antioxidant and free radical scavenger benefits improves skin biology - anti-inflammation claim ex vivo ideal for leave-on formulations 	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	
euxyl™ k 712 preservative	Sodium Benzoate, Potassium Sorbate, Aqua (Water)	0.5% - 1.5%	+++	+++	++	≤5.5	80 °C max. 4 hours	x	x	<ul style="list-style-type: none"> market-leading organic acid blend contains natural-identical ingredients cost-effective allrounder ideal for certified natural formulations: COSMOS & NaTrue conform 	max. 1.96% (leave-on) max. 5.35% (rinse-off)	max. 3.33%	max. 1.96% (leave-on) max. 5.35% (rinse-off)	max. 1.96%	max. 1.96% (leave-on) max. 5.35% (rinse-off)	
euxyl™ k 903 preservative	Benzyl Alcohol, Benzoic Acid, Dehydroacetic Acid, Tocopherol	0.4% - 1.2%	+++	+++	+++	≤6	80 °C max. 4 hours	x	x	<ul style="list-style-type: none"> counterpart to market-leading euxyl™ k 703 preservative contains natural-identical ingredients enhanced antifungal properties ideal for certified natural formulations: COSMOS & NaTrue conform 	max. 1.23%	max. 3.70% (leave-on) max. 10.00% (rinse-off)	max. 1.23%	max. 1.23%	max. 1.23%	f
rokonsal™ bsb-n preservative	Benzyl Alcohol, Glycerin, Benzoic Acid, Sorbic Acid	0.3% 1.0%	+++	+++	++	≤5.5	80 °C max. 4 hours	x	x	<ul style="list-style-type: none"> organic acid blend enhanced by benzyl alcohol contains natural-identical ingredients and natural glycerin for improved moisturizing enhanced antifungal properties ideal for certified natural formulations: COSMOS & NaTrue validated not available in North America 	max. 2.50%	safe as used	max. 2.50%	max. 2.50%	max. 2.50%	
optiphen™ bsb-w preservative	Benzyl Alcohol, Aqua (Water), Sodium Benzoate, Potassium Sorbate	0.3% 1.0%	+++	+++	++	≤5.5	80 °C max. 4 hours	x	x	<ul style="list-style-type: none"> organic acid blend enhanced by benzyl alcohol contains natural-identical ingredients enhanced antifungal properties ideal for certified natural formulations: COSMOS & NaTrue validated 	max. 2.50%	max. 5.64%	max. 2.50%	max. 2.50%	max. 2.50%	
euxyl™ eco 910 preservative	Benzyl Alcohol, Cymbopogon Flexuosus Leaf Oil, Tocopherol	0.5% 1.0%	+++	+++	++	≤8	40 °C	x	x	<ul style="list-style-type: none"> benzyl alcohol boosted by trendsetting lemongrass oil contains natural and nature-identical ingredients persuades with scented, anti-inflammatory and antioxidant properties ideal for certified natural formulations: COSMOS validated 	max. 1.11%	max. 3.33% (leave-on) max. 11.11% (rinse-off)	max. 1.11%	max. 1.11%	max. 1.11%	

+++ highly recommended, ++ recommended, + suitable, - not recommended

In addition to natural ingredients, we also use synthetic versions of naturally occurring substances with excellent efficacy and worldwide approval for rinse-off and leave-on applications. These powerful antimicrobials are suitable for a variety of natural personal care products and are compliant with a number of certification bodies such as NaTrue; COSMOS; IBD; NPA.





aromatics with antimicrobial properties

Growing consumer demand for multifunctional and nature-identical ingredients is giving rise to new product brands and new personal care formulations. Addressing these trends, Ashland offers formulators a range of solutions through its aromatic alcohol product line, a fortifying system containing nature-derived and nature-identical ingredients that add mild flowery fragrance to personal care formulations and deliver broad antimicrobial protection as an additional effect. The nature-derived emulsifier systems and the contained booster can enhance moisturizing properties in the final formulation.



aromatics with antimicrobial properties

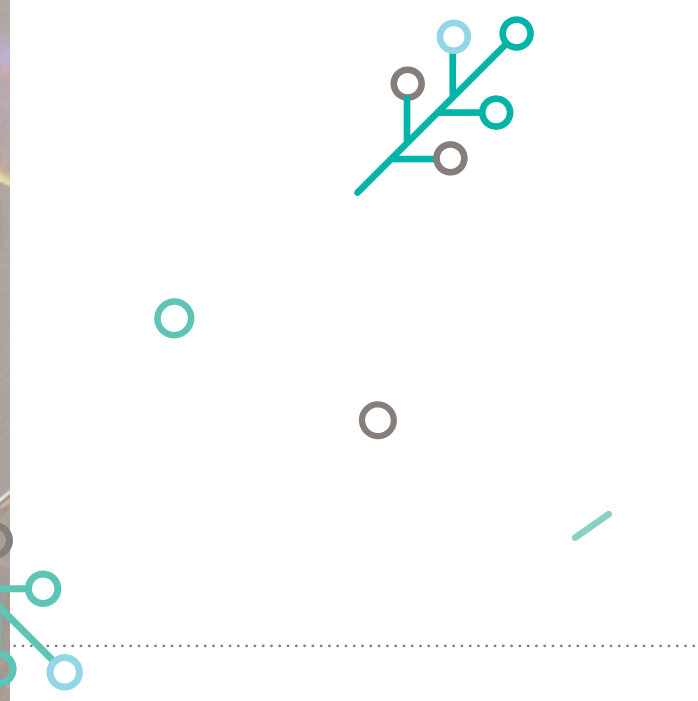
trade name ¹	INCI name	recommended use-concentration	leave-on	rinse-off	wet wipes	pH	max. temperature during production	activity against		features and benefits	acc. EU Cosmetics Regulation	acc. CIR (USA)	acc. ASEAN Cosmetic Directive ²⁾	Technical Safety Standards for Cosmetics (TSSC 2015) (China)	acc. Mercosur ³⁾	notes
								gram+/gram-bacteria	yeast/mold							
conarom™ b multifunctional	Phenylpropanol, Humulus Lupulus (Hops) Extract	0.5% - 2.0%	+++	+++	++	≤8	40 °C	x	x	<ul style="list-style-type: none"> multifunctional blend with hops extract contains natural and nature-identical ingredients appealing flowery spicy odor ideal for leave-on formulations 	no restrictions for the use in cosmetics	max. 12% (leave-on) max. 19% (rinse-off)	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	a
conarom™ p-2 multifunctional	Phenethyl Alcohol, Caprylyl Glycol, Propanediol, Polyglyceryl-4 Laurate/Sebacate, Polyglyceryl-6 Caprylate/Caprinate, Aqua (Water)	0.5% - 2.0%	+++	++	++	≤8	80 °C	x	x	<ul style="list-style-type: none"> multifunctional blend boosted by caprylyl glycol contains natural and nature-identical ingredients appealing rose-like odor ideal for leave-on formulations 	no restrictions for the use in cosmetics	max. 1.66%	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	max. 1.66%	
sensiva™ pa 20 multifunctional	Phenethyl Alcohol, Ethylhexylglycerin, Tocopherol	0.5% - 1.1%	+++	+	++	≤12	80 °C	x	x	<ul style="list-style-type: none"> multifunctional blend boosted by ethylhexylglycerin contains nature-identical ingredients appealing rose-like odor ideal for leave-on formulations 	no restrictions for the use in cosmetics	max. 1.11%	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	max. 1.11%	e
sensiva™ pa 30 multifunctional	Propanediol, Phenethyl Alcohol, Undecyl Alcohol, Tocopherol	1.0% - 2.0%	+++	+++	++	≤12	80 °C	x	x	<ul style="list-style-type: none"> multifunctional blend boosted by undecyl alcohol contains natural and nature-identical ingredients appealing rose-like odor ideal for neutral rinse-off formulations 	no restrictions for the use in cosmetics	max. 2.85%	no restrictions for the use in cosmetics	-	max. 2.85%	
sensiva™ pa 40 multifunctional	Phenylpropanol, Propanediol, Caprylyl Glycol, Tocopherol	0.5% - 1.5%	+++	++	++	≤12	120°C	x	x	<ul style="list-style-type: none"> powerful multifunctional blend boosted by caprylyl glycol contains natural and nature-identical ingredients provides moisturizing and emolliency appealing floral scent designed for challenging leave-on formulations, e.g. sun care 	no restrictions for the use in cosmetics	safe as used	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	

+++ highly recommended, ++ recommended, + suitable, - not recommended



classic preservatives

Tried and true, Ashland's classic preservatives deliver efficient antimicrobial power to a wide variety of personal care products. Balanced, synergistic and with broad spectrum protection, classic preservatives are compatible with many other cosmetic ingredients. These well-known actives are approved in most countries, effective at low doses, and can be used to support other antimicrobial systems.



classic preservatives

trade name ¹	INCI name	recommended use-concentration ²	leave-on	rinse-off	wet wipes	pH	max. temperature during production	activity against		features and benefits	acc. EU Cosmetics Regulation	acc. CIR (USA)	acc. ASEAN Cosmetic Directive ²⁾	Technical Safety Standards for Cosmetics (TSSC 2015) (China)	acc. Mercosur ³⁾	notes
								gram+/gram-bacteria	yeast/mold							
germall™ 115 preservative	Imidazolidinyl Urea	0.2% – 0.6%	++	++	+	≤9	60 °C	x		<ul style="list-style-type: none"> powerful antibacterial provides head-space protection white, free-flowing hygroscopic powder cost-effective 	max. 0.6%	max. 1.00%	max. 0.6%	max. 0.6%	max. 0.6%	k; l
germall™ II preservative	Diazolidinyl Urea	0.1% – 0.3%	++	++	+	≤9	60 °C	x		<ul style="list-style-type: none"> powerful antibacterial provides head-space protection cost-effective 	max. 0.5%	max. 0.5%	max. 0.5%	max. 0.5%	max. 0.5%	k
germall™ plus preservative	Diazolidinyl Urea, Iodopropynyl Butylcarbamate	0.05% – 0.2%	+++	+++	+++	≤8	50 °C	x	x	<ul style="list-style-type: none"> powerful preservative blend with strong fungicidal efficacy provides head-space protection white, free-flowing hygroscopic powder cost-effective 	max. 0.5%	max. 0.5%	max. 0.5%	max. 0.5%	max. 0.5%	i; k; n
liquid germall™ plus preservative	Propylene Glycol, Diazolidinyl Urea, Iodopropynyl Butylcarbamate	0.1% – 0.5%	+++	+++	+++	≤8	50 °C	x	x	<ul style="list-style-type: none"> preservative blend with strong fungicidal efficacy provides head-space protection cost-effective fast acting and easy to be incorporated 	max. 1.26%	max. 1.26%	max. 1.26%	max. 1.26%	max. 1.26%	i; k; n
germaben™ II preservative	Propylene Glycol, Diazolidinyl Urea, Methylparaben, Propylparaben	0.5% – 1.0%	+++	+++	++	≤8	60 °C	x	x	<ul style="list-style-type: none"> preservative blend with strong fungicidal efficacy provides head-space protection 	max. 1.66%	max. 1.66%	max. 1.66%	max. 1.66%	max. 1.66%	h; k
germaben™ II-e preservative	Propylene Glycol, Diazolidinyl Urea, Methylparaben, Propylparaben	0.5% – 1.0%	+++	+++	++	≤8	60 °C	x	x	<ul style="list-style-type: none"> preservative blend with strong fungicidal efficacy provides head-space protection 	max. 1.82%	max. 2.50%	max. 1.82%	max. 1.82%	max. 1.82%	h; k
euxyl™ k 500 preservative	Diazolidinyl Urea, Sodium Benzoate, Potassium Sorbate	0.5% – 1.5%	+++	+++	++	≤6	60 °C	x	x	<ul style="list-style-type: none"> preservative blend provides head-space protection cost-effective 	max. 2.50%	max. 2.50%	max. 2.50%	max. 2.50%	max. 2.50%	k
euxyl™ k 510 preservative	DMDM Hydantoin, Methylchloroisothiazolinone/ Methylisothiazolinone	0.1% - 0.4%	-	+++	-	≤8	40°C	x	x	<ul style="list-style-type: none"> preservative blend provides head-space protection cost-effective suitable for neutral rinse-off applications 	max. 0.55% (rinse-off)	max. 0.27% (leave-on) max. 0.55% (rinse-off)	max. 0.55% (rinse-off)	max. 0.55% (rinse-off)	max. 0.55% (rinse-off)	a; j; k

+++ highly recommended, ++ recommended, + suitable, - not recommended

Recommended use-concentrations are based on average active content. Please pay attention to the corresponding certificate of analysis.

continued on next page.

classic preservatives

trade name ¹	INCI name	recommended use-concentration	leave-on	rinse-off	wet wipes	pH	max. temperature during production	activity against		features and benefits	acc. EU Cosmetics Regulation	acc. CIR (USA)	acc. ASEAN Cosmetic Directive ²⁾	Technical Safety Standards for Cosmetics (TSSC 2015) (China)	acc. Mercosur ³⁾	notes
								gram+/gram-bacteria	yeast/mold							
sutocide™ a preservative	Sodium Hydroxymethylglycinate, Aqua (Water)	0.5% - 1.0%	++	++	++	≤12	60 °C	x	x	<ul style="list-style-type: none"> ○ broad-spectrum preservative ○ provides head-space protection ○ high pH tolerance 	max. 1.00%	no restrictions for the use in cosmetics	max. 1.00%	max. 1.00%	max. 1.00%	k; o
euxyl™ k 100 preservative	Benzyl Alcohol, Methylchloroisothiazolinone/ Methylisothiazolinone, Propylene Glycol, Triethylene Glycol	0.05% - 0.15%	-	+++	-	≤8	40 °C	x	x	<ul style="list-style-type: none"> ○ fast acting preservative blend ○ cost-effective ○ suitable for neutral rinse-off applications 	max. 0.21% (rinse-off)	max. 0.10% (leave-on) max. 0.21% (rinse-off)	max. 0.21% (rinse-off)	max. 0.21% (rinse-off)	max. 0.21% (rinse-off)	a; j; m
euxyl™ k 120 preservative	Methylchloroisothiazolinone/ Methylisothiazolinone	0.05% - 0.10%	-	+++	-	≤8	40 °C	x	x	<ul style="list-style-type: none"> ○ fast acting preservative blend ○ cost-effective ○ suitable for neutral rinse-off applications 	max. 0.10% (rinse-off)	max. 0.05% (leave-on) max. 0.10% (rinse-off)	max. 0.10% (rinse-off)	max. 0.10% (rinse-off)	max. 0.10% (rinse-off)	a; j; m
euxyl™ k 145 preservative	2-Bromo-2-Nitropropane-1,3-Diol, Methylchloroisothiazolinone/ Methylisothiazolinone	0.05% - 0.30%	-	+++	-	≤8	40 °C	x	x	<ul style="list-style-type: none"> ○ fast acting preservative blend ○ cost-effective ○ suitable for neutral rinse-off applications 	max. 0.30% (rinse-off)	max. 0.15% (leave-on) max. 0.30% (rinse-off)	max. 0.30% (rinse-off)	max. 0.30% (rinse-off)	max. 0.30% (rinse-off)	a; d; j; k
optiphen™ mit plus preservative	Methylisothiazolinone, Phenethyl Alcohol, Ppg-2 Methyl Ether, Aqua (Water)	0.03% - 0.2%	-	+++	-	<10	70 °C	x	x	<ul style="list-style-type: none"> ○ preservative blend with nature identical ingredient ○ appealing rose-like odor ○ high pH and temperature tolerance 	max. 0.03% (rinse-off)	max. 0.20%	max. 0.20%	max. 0.20%	max. 0.03% (rinse-off)	j; m
s&m bronopol rch preservative	2-Bromo-2-Nitropropane-1,3-Diol	max. 0.1%	++	++	++	≤8	40 °C	x		<ul style="list-style-type: none"> ○ crystalline preservative ○ activity against gram-negative bacteria (<i>Pseudomonas</i> sp.) ○ fast acting at low use levels 	max. 0.10%	max. 0.10%	max. 0.10%	max. 0.10%	max. 0.10%	d; k
rokonsal™ se-2 preservative	2-Bromo-2-Nitropropane-1,3-Diol, Ethylparaben, Myrtrimonium Bromide, PPG-2 Methyl Ether, Aqua (Water)	0.1% - 0.3%	+++	+++	++	<7	40 °C	x	x	<ul style="list-style-type: none"> ○ fast acting preservative blend at low use-concentrations ○ not available in North America 	max. 1.25%	max. 1.25%	max. 1.25%	max. 1.25%	max. 1.25%	d; k

+++ highly recommended, ++ recommended, + suitable, - not recommended

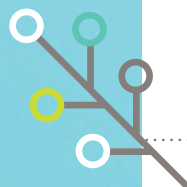
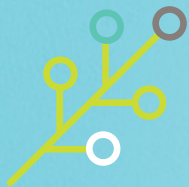
Recommended use-concentrations are based on average active content. Please pay attention to the corresponding certificate of analysis.

continued on next page.

classic preservatives																
trade name ¹	INCI name	recommended use - concentration	leave-on	rinse-off	wet wipes	pH	max. temperature during production	activity against		features and benefits	acc. EU Cosmetics Regulation	acc. CIR (USA)	acc. ASEAN Cosmetic Directive ²⁾	Technical Safety Standards for Cosmetics (TSSC 2015) (China)	acc. Mercosur ³⁾	notes
								gram+/gram-bacteria	yeast/mold							
euxyl™ k 320 preservative	Phenoxyethanol, Methylparaben, Ethylparaben, Propylene Glycol	0.5% - 1.4%	+++	++	++	≤8	80°C	x	x	<ul style="list-style-type: none"> ○ preservative blend based on short-chain parabens ○ high pH and temperature tolerance ○ cost-effective 	max. 1.42%	max. 1.42%	max. 1.42%	max. 1.42%	max. 1.42%	e
liquapar™ me preservative	Phenoxyethanol, Methylparaben, Ethylparaben, Caprylyl Glycol	0.5% – 1.0%	+++	+++	++	≤8	80°C	x	x	<ul style="list-style-type: none"> ○ preservative blend boosted by caprylyl glycol ○ high pH and temperature tolerance 	max. 1.44%	max. 1.44%	max. 1.44%	max. 1.44%	max. 1.44%	
rokonsal™ mep preservative	Phenoxyethanol, Methylparaben, Ethylparaben, Propylparaben	0.5% – 1.0%	+++	++	++	≤8	80°C	x	x	<ul style="list-style-type: none"> ○ preservative blend based on well-known parabens ○ high pH and temperature tolerance ○ in North America available with the trade name liquapar™ mep preservative 	max. 1.38%	max. 1.38%	max. 1.38%	max. 1.38%	max. 1.38%	h; e
euxyl™ k 340 preservative	Phenoxyethanol, Methylparaben, Butylparaben, Ethylparaben, Propylparaben	0.5% - 1.2%	+++	++	++	≤8	80°C	x	x	<ul style="list-style-type: none"> ○ powerful preservative blend ○ high pH and temperature tolerance 	max. 1.39%	max. 1.39%	max. 1.39%	max. 1.39%	max. 1.39%	e; h
euxyl™ k 350 preservative	Phenoxyethanol, Methylparaben, Ethylparaben, Propylene Glycol, Ethylhexylglycerin	0.5% - 1.4%	+++	++	++	≤8	80°C	x	x	<ul style="list-style-type: none"> ○ preservative blend boosted by ethylhexylglycerin ○ high pH and temperature tolerance 	max. 2.00%	max. 2.00%	max. 2.00%	max. 2.00%	max. 2.00%	e
s&m methylparaben preservative	Methylparaben	max. 0.40%	++	++	++	≤8	80°C	x	x	<ul style="list-style-type: none"> ○ crystalline preservative ○ cost effective 	max. 0.44%	max. 0.40%	max. 0.44%	max. 0.44%	max. 0.44%	

+++ highly recommended, ++ recommended, + suitable, - not recommended

Recommended use-concentrations are based on average active content. Please pay attention to the corresponding certificate of analysis.



multifunctionals

Multifunctional ingredients comprise various families that are classed as diols, ethers, or esters and influence the overall microbial stability due to their water binding properties. Widely used in skin care, hair care, wet wipes, toiletries and color cosmetics, multifunctional ingredients provide moisturizing and solubilizing properties. With a neutral smell and wide pH tolerance they are suitable for many personal care applications.



multifunctionals																
trade name ¹	INCI name	recommended use - concentration	leave-on	rinse-off	wet wipes	pH	max. temperature during production	activity against		features and benefits	acc. EU Cosmetics Regulation	acc. CIR (USA)	acc. ASEAN Cosmetic Directive ²⁾	Technical Safety Standards for Cosmetics (TSSC 2015) (China)	acc. Mercosur ³⁾	notes
								gram+/gram-bacteria	yeast/mold							
sensiva™ sc 10 multifunctional	Ethylhexylglycerin, Caprylyl Glycol	0.5% - 2.0%	+++	+	+++	≤12	120°C	x	x	<ul style="list-style-type: none"> multifunctional ingredient boosted by ethylhexylglycerin booster for antimicrobials provides moisturizing and emolliency ideal for leave-on formulations 	no restrictions for the use in cosmetics	max. 6.66% (leave on) max. 7.14% (rinse-off)	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	e
sensiva™ sc 50 multifunctional	Ethylhexylglycerin	0.3% - 1.0%	+++	+	+++	≤12	120°C			<ul style="list-style-type: none"> market-leading multifunctional ingredient skin care additive and emollient booster for antimicrobials boosting and fixating of fragrance ingredients effective against odor-causing bacteria ideal for all leave-on formulations 	no restrictions for the use in cosmetics	max. 2.0% (leave on) max. 8.0% (rinse-off)	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	e
sensiva™ sc 80 multifunctional	Propanediol, Caprylyl Glycol, Caprylhydroxamic Acid	0.3% - 1.5%	+++	+++	+++	≤8	80°C	x	x	<ul style="list-style-type: none"> well-balanced blend of multifunctional ingredients naturality of 60% acc to ISO16128 provides antioxidant and well-aging benefits strong fungicidal efficacy not available in the US 	no restrictions for the use in cosmetics	max. 5.0% (leave on) max. 6.0% (rinse-off)	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	
optiphen™ od multifunctional	Caprylyl Glycol	0.3% - 2.0%	+++	++	+++	≤12	120°C	x	x	<ul style="list-style-type: none"> well-known multifunctional ingredient adds to microbial stability provides moisturizing and emolliency ideal for all leave-on formulations 	no restrictions for the use in cosmetics	max. 5.00%	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	
optiphen™ hd multifunctional	1,2-Hexanediol	0.5% - 3.0%	+++	++	+++	≤12	120°C	x	x	<ul style="list-style-type: none"> well-known multifunctional ingredient adds to microbial stability provides moisturizing and emolliency ideal for all face care formulations 	no restrictions for the use in cosmetics	safe as used	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	
effisin™ pg multifunctional	Pentylene Glycol	1.0% - 5.0%	++	++	++	≤12	120°C	x	x	<ul style="list-style-type: none"> well-known multifunctional ingredient adds to microbial stability provides moisturizing and emolliency ideal for face care formulations 	no restrictions for the use in cosmetics	safe as used	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	

+++ highly recommended, ++ recommended, + suitable, - not recommended



deodorant actives

The development and evaporation of sweat can be an important mechanism for body temperature control or even be a crucial human survival strategy. And yet we all know that sweat can occur at most inappropriate moments even causing very unpleasant smell. This is because the axilla is a good breeding ground for bacteria that transform originally odorless sweat into volatile components generating an unwanted odor. *sensidin™ pure skin* multifunctional, *sensidin™ do skin* multifunctional, and *sensiva™ sc 50* multifunctional are effective deodorant actives that inhibit the growth and multiplication of odor-causing bacteria while being gentle to the skin.



deodorant actives

trade name ¹	INCI name	recommended use-concentration	leave-on	rinse-off	wet wipes	pH	max. temperature during production	activity against		features and benefits	acc. EU Cosmetics Regulation	acc. CIR (USA)	acc. ASEAN Cosmetic Directive ²⁾	Technical Safety Standards for Cosmetics (TSSC 2015) (China)	acc. Mercosur ³⁾	notes
								gram+/gram-bacteria	yeast/mold							
sensiva™ sc 50 multifunctional	Ethylhexylglycerin	0.3% - 1.0%	+++	+	+++	≤12	120°C	x		<ul style="list-style-type: none"> market-leading deodorant ingredient booster for antimicrobials boosting and fixating of fragrance ingredients ideal for all deodorant formulations 	no restrictions for the use in cosmetics	max. 2.0% (leave on) max. 8.0% (rinse-off)	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	no restrictions for the use in cosmetics	
sensidin™ do skin multifunctional	Propylene Glycol, Ethylhexylglycerin, Octenidine HCl	0.5% - 1.0%	+++	+	+++	≤12	120°C	x	x	<ul style="list-style-type: none"> well-known blend of deodorant ingredients contains powerful octenidine deodorant protection for 24 hours gentle to the skin ideal for roll-on, spray, and areosol deodorants 	no restrictions for the use in cosmetics	safe as used	no restrictions for the use in cosmetics	-	no restrictions for the use in cosmetics	
sensidin™ pure skin multifunctional	Propanediol, Octenidine HCl	0.03 - 0.3%	+++	+	+++	≤12	120°C	x	x	<ul style="list-style-type: none"> trendsetting skin multifunctional very strong and fast efficacy on all body regions long-lasting deodorant protection for 48 hours respects the individual microbiome hypoallergenic ideal for roll-on, spray, and aerosol formulations 	no restrictions for the use in cosmetics	safe as used	no restrictions for the use in cosmetics	-	no restrictions for the use in cosmetics	

+++ highly recommended, ++ recommended, + suitable, - not recommended

always

solving™



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