



Approved Preservatives for Formulating Organic Products

| Preservative | INCI | Key Benefit | What phase does it sit | | | Micro Power | Status | Price per Kg | Formulating | Use Levels |
|-------------------------|--|--|------------------------|-------|------|--------------------------------------|------------------------------|--------------|--|------------|
| | | | Oil | Water | Both | | | | Notes | |
| Grapefruit Seed Extract | Glycerine and grapefruit seed extract | It is seen to be natural | | YES | | Broad Spectrum | synthetic | \$396 | This is not listed as a preservative on the European Cosmetic Directive. It is listed as an astringent, perfume, skin conditioner and tonic. | 0.75-2% |
| Herbigerm | Propylene glycol, diazolidinyl urea, methylparaben, propylparaben, rosemary oil, tea tree oil, grapeseed oil | Broad Spectrum liquid preservative that is easy to incorporate | | | YES | Broad Spectrum | Synthetic | \$74 | This preservative has a distinctive aroma which may make it unsuitable for some formulations | 1% |
| Naticide | Fragrance | Broad spectrum and easy to incorporate. INCI name "Parfum". | | | YES | Broad Spectrum | Natural (almond extract) | \$517 | This works to inhibit the growth of microbes rather than kill microbes that are already there. It has an almond and vanilla smell and yellow colour. It works best between pH 4-9 and can be added to either the oil or water phase. | 0.3-1% |
| p Anisic Acid | p Anisic Acid | Good preservative efficacy booster. All natural and very low usage levels | | YES | | Helps with broad spectrum protection | Natural | \$715 | P anisic acid is a multifunctional cosmetic ingredient that can aid in odour masking and product preservation. It is suitable for both rinse-off and leave-on cosmetic products and is effective at a low level. Anti-microbially tests have found it to have a broad spectrum activity with particular efficacy against mould. | 0.05-0.3% |
| Phenoxyethanol | Phenoxyethanol | Cost effective preservative booster | | YES | | Bacteria and yeast | Synthetic, petroleum derived | \$33 | Limited water solubility so add in a glycol. Also acts as a bacteriostatic ingredient rather than a biocide so a good booster. Not great on moulds so needs to be used with something else. This also has limited effect in mixtures containing high levels ethoxylated ingredients. The maximum amount allowed in a formulation is 1% | up to 1% |
| Plantaserve E | phenoxyethanol, ethylhexylglycerine | Cost effective new-gen preservative that is easy to use. | | | YES | Broad Spectrum bacteriostatic | Synthetic/natural blend | \$149 | limited water solubility so add to glycerine, IPM or sorbitol. All pH ranges. | 0.5-1% |
| Plantaserve P | Phenoxyethanol, caprylyl glycol | Good skin feel and easy to use. Pair with Potassium Sorbate for Broad Spectrum Effects | | | YES | Bacteria and yeast | Synthetic | \$138 | easy to use, add at temps below 80C. For formulations at pH 4-8. Gives good skin feel. In some cases the caprylyl glycol component can thin the formula leading to instabilities. Sometimes a change of emulsifier is required | 0.75-1.5% |



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| Plantaserve S | Origanum Vulgare Leaf Extract, Thymus Vulgaris Extract, Rosmarinus Officinalis Leaf Extract, Mentha Piperita leaf extract, Lavandula Angustifolia leaf extract, Citrus Medica Limonum Peel Extract, Cinnamomum Zeylanicum Bark Extract, Hydrastis Canadensis Root Extract, Olea Leaf Extract | All natural blend | | | YES | Broad Spectrum | Natural | \$658 | smell may be off-putting as may colour. Also contains essential oil components that may cause excessive irritation. In addition preservative systems such as this are not always recognised by overseas regulators such as exist in the EU. | 0.50% |
| Potassium Sorbate | Potassium Sorbate | Cost effective food-grade preservative with great mould and yeast efficacy. Pair with phenoxyethanol or other preservative to get broad-spectrum protection | | Y | | Yeasts and Moulds | Nature Identical | \$22 | Suitable for products up to pH of 6. Needs to be added at temps under 40C as it is heat sensitive. Also should not be used in formulations without an oily phase as it can be irritating to the skin. | Up to 0.6% |
| Sodium Benzoate | Sodium Benzoate | | | | | | | | | 0.5 max for leave on or 2.5% for rinse off. |
| Propylene Glycol & Diazolidinyl Urea & Methyl Paraben & Propyl Paraben | Propylene Glycol & Diazolidinyl Urea & Methyl Paraben & Propyl Paraben | Very effective broad-spectrum preservative that is easy to use. | | | YES | Bacteria and yeast | Synthetic | \$61 | Add below 50C. Stable across all cosmetic pH ranges. It is also a formaldehyde donor. | 0.01 |
| Sodium Hydroxymethyl Glycinate | Sodium Hydroxymethyl glycinate | Cost effective broad-spectrum preservative | | | YES | Broad Spectrum | Synthetic | \$50 | Formaldehyde donor under certain situations and also reacts with vanilla to turn solutions pink. Very good for higher pH products as stable up to pH 12. It also reacts with citral in fragrances giving a colour change so take care with citrus based essential oils | up to 1% as supplied (0.5% as active) |
| Plantaserv M | Benzyl Alcohol & Salicylic Acid & Glycerine & Sorbic Acid | Great all-round new-generation preservative with broad spectrum activity. | | | YES | Broad Spectrum | nature-identical | \$176 | Good for pH 3-8. It is insoluble in water so requires adding to something like glycerine, ethanol, vegetable oil or surfactant. It is insoluble in silicones. Plantaserv M can affect the viscosity of some systems causing emulsion stability. Always check this on a small batch before making a change. | 1% |



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| Glyceryl Caprylate | Glyceryl Caprylate | Good efficacy with bacteria and yeast but not so strong with mould. Would need to use two preservatives for broad-spectrum efficacy | | YES | | Bacteria and Yeast | Synthetic | \$110 | This ingredient is supplied as a waxy solid that can be melted over a gentle heat. It melts at 30C so can still be added at the end of manufacture while the product is cooling. In addition the preservative can be heated to 80% without a problem | 0.3-1% |