



New Preservative Guidelines by Kolbjorn Borseth

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Formulation News

PRESERVATIVE 12

Important New Dosage Guidelines

New information has been sent to me by the German producer of Preservative 12. They now recommend that you use above 0.7% concentration in products, and between 0.8-1% to be on the safe side.



In the past I have personally recommended using a dosage of 0.6% and through all of these years this is the dosage I have used on all of our courses (and as you know, it is not always easy to maintain laboratory hygienic standards on courses when a number of people are working in a small area not normally reserved for this type of work) and in our own range of base and ready made products, **all with no problem.**

On the safe side

This new recommendation comes after the producer challenge-tested many cosmetic formulations at their factory. They still recommend using from 0.5-1% as Preservative 12 still works at 0.5%. As Preservative 12 is a so-called 'soft' preservative, their new recommendation is **0.8-1% in all cosmetic preparations to be on the safe side.** If, like us, you have had no problems using Preservative 12 at a dosage of 0.6%, then it is up to you to decide whether you want to increase to 0.8-1% concentration to be on the safe side.

Preservative 12 Dosage for Products containing Herbal Infusions or Decoctions

I have always recommended that you use 1% in preparations containing herbal infusions or decoctions, and after discussing this with the producers, they agree that 1% should work but that you should test your own products.

Using the Right Kind Water

What we've seen from feedback from two of our customers whose creams went off using Preservative 12 is that they used normal tap water, which is an unnecessary challenge to the product. Other customers have used osmosis water, and that too can be a challenge.

I have always recommended using reputable bottled spring water from supermarkets and never tap water, except for shampoos/liquid soaps as the detergent helps to preserve the products as well. Here it is always a good idea to boil the water for at least 10 minutes beforehand and, very importantly, to use freshly opened bottled water for each batch!

Other challenges

Other challenges to the preservative effect in products the German producers of Preservative 12 have told us about is when you use food products in your cosmetics e.g. ground almonds in an exfoliating cream, etc.

Too many Ingredients can spoil the Preservative Effect

The more active ingredients one has in a product, the more challenging it is to preserve it. Having said that, the Anti-Wrinkle Cream we make on Courses has a maximum amount of actives in it and we have used a dosage of 0.6% Preservative 12 without any problems.

PRESERVATIVE ECO

A broad spectrum preservation system based on a combination of ingredients that have global acceptance - our most natural Preservative!

INCI Name: Benzyl Alcohol, Salicylic Acid, Glycerine, Sorbic Acid

What is it?

We are delighted to introduce a new broad spectrum preservation system based on a combination of ingredients that is both ECOCERT and COSMOS approved. (Cosmos is a European organic standard has been created by an alliance of 5 of Europe's leading organic certifiers: The Soil Association – UK; BDIH - Germany; Cosmebio – France; Ecocert – France; ICEA. Preservative Eco meets ECOCERT standards for use in natural and organic skin and hair care products [please note: it is our supplier that hold the Ecocert certification, not Aromantic]. Its four components, Benzyl Alcohol, Salicylic Acid, Glycerine, Sorbic Acid, are all well accepted in a wide range of personal care products. This novel composition of this antimicrobial blend offers broad spectrum protection in a diverse range of products, against gram-positive and gram-negative bacteria, yeast and moulds. It is clear liquid with a mild smell. Natural Odour Reducer may be needed for fragrance-free and fragrance-sensitive formulations.



Benefits:

- Non-paraben, non-formaldehyde, non-isothiazolone based preservative system.
- Has wide global regulatory acceptance.
- Broad spectrum activity on bacteria, yeast and moulds.
- Suitable for use in oil-in-water, water-in-oil and anhydrous (non-water containing) formulas so compatible with a wide range range of skin, hair and sun care formulations.
- Safe to use in products with a wide range of pH values (3-8).

Recommended dosage for Preservative Eco:

Recommended number of drops, grams and % per 100ml/g of product - 20 drops using small 0.7mm dropper/ OR 1g/ OR 1%. If product contains herbal decoctions or infusions - add 22 drops using small 0.7mm dropper/OR 1.1g/ OR 1.1% per 100ml/g. Because of the high quantity of Benzyl Alcohol in Preservative Eco and to meet the European Cosmetic Directive standards, the maximum amount use in products should be 1.15%.

Usage:

It is very important that Preservative Eco is added to your recipes for which heating is necessary when the temperature is below 45 degrees Celsius. So the best is to add the preservative in the third stage of making creams and lotions. However, every personal care formulation requires special attention. It is always important to ensure that every newly developed or altered formulation be challenge-tested to guarantee proper preservation.

When adding Preservative Eco to cold products (i.e. when no heating is required to make the product, make sure you mix it in thoroughly - a hand held electric stick blender may be useful if you find it doesn't mix in correctly.

Caution:

Due to the Salicylic Acid component in Preservative Eco, do not use it in products for children under 3 years of age, except in rinse-off products such as shampoos, shower gels, etc. Some people with sensitive skin or allergies can also react to Preservative Eco and Preservative 12 may be more appropriate for them. Whilst it is more natural than Preservative 12, Preservative 12 may be more appropriate for some people's skin. Do a skin allergy test before making big batches or buying large quantities of Preservative.

Further information about using Preservative Eco

Aromantic has challenge-tested 2 creams made using 1% Preservative Eco at Microbiological Consultancy Services and we now have the results back from their lab. The creams we tested are: Aromantic's Mature Skin Cream; and Aromantic's Active Cream 1 (which contains herbal infusions) and both passed the challenge test to comply with the criteria of the European Pharmacopeia for topical products. Our tests were successful and Preservative Eco also comes from a reputable company that produces other ECOCERT-approved raw materials but as I've said in my Preservatives article, the final responsibility for the end result of your products lies with you as we are not with you when you make your products.

If you are happy with the preservative you are using I see no reason to change preservatives. If you want a natural preservative to use in products containing detergents (shampoos, foam baths, shower gels, etc) then this may be the preservative for you.

Some common sense or safety rules when changing to other preservatives:

- Change 1-2 products first, not all the products in your range.
- Do your own stability test, see Newsletter 32. If still uncertain, get our Micrcount® Combi test kit.
- If still not convinced, get your product challenge-tested.
- Ideally, don't start selling your 'test' products containing your new preservative until 6 months have passed from production date.

Taking responsibility and Microbiological Challenge Testing

At the end of the day, you, as a producer, need to take responsibility for how much preservative you choose to put into your products. The only categorical way to check is to submit the product to the full European Pharmacopoeia challenge test. This is carried out by a microbiological testing laboratory, e.g. Microbiological Consultant Services; the test takes about 40 days to perform. This is what we recommend even though it's not compulsory.

We now sell a simple test kit

We now sell a simple test set that costs a few pounds to test bacteria, yeasts and fungus in cosmetic products. It is called Microcount Combi. For full description or to order, click: <http://www.aromantic.co.uk/buy-mikrocount-combi-uk.htm>

If you want to use a microbiological testing company, you can contact Angus Malcolm at Microbiological Consultancy Services, who are offering Aromantic customers a special price. Their website is <http://www.mcs.uk.net> Please contact them directly.

Stability Testing

Stability testing is completely different to microbiological challenge testing. Stability testing checks whether the product shows separation or other changes in appearance, texture or smell due to e.g. oxidation of vegetable oils and perfumes or due to incorrect emulsifier selection. Large cosmetic companies will always check their products by both challenge testing and stability testing and a 12 month shelf life cannot really be claimed unless both tests are done.

Edmund Fowles, one of the experienced industrial chemist and safety assessors we recommend for cosmetic safety assessments has given you here a simple stability testing method:

Stability Testing Method by Edmund Fowles

“I would recommend doing basic stability testing for anyone selling products to the general public and so that they get an idea of their shelf life. The basic standard industry method is to put into a glass jar at 45°C in an oven for 2 or 3 months, check it every 2 weeks, note their observations (after cooling each time to room temperature) including colour, smell, texture and skin feel. If it survives this time with no changes then it is deemed to be probably stable for 12 months at room temperature. Extra industry methods involve putting the product in a fridge at 4 C for 3 months and submitting the product to temperature cycles of freezing and melting.

The minimum that your customers should do is put samples in clear glass jars on sunny window sills and test them as above. The longer they have seen it be stable for, the longer the shelf life they can write on the label. At least make sure it is stable for 1 month in this way before start selling to the general public. If possible, people should also store and observe samples in the airing cupboard. But ideally, it would be good to invest in a 45°C oven.”

Safety Assessment

At its simplest, the EU legislation requires that a product placed on the market is safe for human use and in order to ensure that it's safe it must undergo a safety assessment by a qualified safety assessor. This is a basic legal requirement; do not confuse a safety assessment with challenge testing.

The legislation stipulates what ingredients are allowed in cosmetic and skin care products and what ingredients are subject to restrictions and the safety assessor will check this. Click here for safety assessors we recommend:

http://www.aromantic.co.uk/pdf/Useful_Contacts_Safety_Testing.pdf

Click here for details of our Complying with Legal Requirements Course:

<http://www.aromantic.co.uk/course-complying-with-legal-requirements.htm>

Very Important Information

The best method for measuring the Preservatives when adding to your products is to weigh them on a very good scale that weighs down to 0.1 grams. If you still decide to continue using drops to measure our Preservatives, we now recommend using different quantities depending on which of our Preservatives you are using in your products.

In our recipes that you may have from old Newsletters, our books and recipe brochures, you'll often find that we don't say which preservative to use, we simply say 'x' number of drops of 'Preservative' in the recipe. As I mentioned before, you need to decide how much of a Preservative you will put into your own products, but these are my new recommendations. If you have old recipes, I suggest in most cases (unless it agrees it with the dosages in this table, that you ignore the number of drops or volume recommended and use my recommendations as a guideline. See the next page for the table.

New Recommended number of drops Aromantic's Preservatives to use

Aromantic Preservative old number of drops per 100ml/g of product	New recommended number of drops, grams and % per 100ml/g of product	New recommended drops, mls, grams and % of drops per 100ml/g of product containing herbal infusions or decoctions
Drops n/a - Preservative Eco	20 drops using small 0.7mm drop- per/1g/1%	22 drops using small 0.7mm drop- per/1.1g/1.1%
12 drops Preservative 12	20-25 drops using large 2mm/0.8- 1g/0.8-1% dropper	25 drops/0.9ml/1g/1%
12 drops Preservative K	12-15 drops using large 2mm dropper/0.5-0.6g/0.5-0.6%	25 drops/0.9ml/1g/1%
12 drops Parabens (Aromantic Blend)	Still 12 drops using large 2mm dropper/0.5g/0.5%	20 drops/0.72ml/0.8g/0.8%

**NB Drops refers to drops from the bottles our Preservatives are supplied to you in. The best is always to weigh the Preservatives!*

Conversion Table for Aromantic's Preservatives

1 gram of Aromantic Preservative	Approximate no. of drops*	Density/Specific Gravity (grams per cubic centimetre)
Preservative Eco	=approx. 20 drops	1.018-1.118 at 21°Celsius
Preservative 12	= approx. 25 drops	1.09g/cm ³ at 20°Celsius
Preservative K	= approx. 25 drops	1.105g/cm ³ at 20°Celsius
Parabens (Aromantic Blend)	= approx. 25 drops	1.125g/cm ³ at 25°Celsius

**NB Drops refers to drops from the bottles our Preservatives are supplied to you in. The best is always to weigh the Preservatives!*

So, generally 10 grams of these Preservatives will give you a smaller volume (approximately 10% less) i.e. 10 grams= about 9 millilitres of Preservative, so 1gram of preservative = about 0.9 millilitres.

As temperature affects the viscosity of the Preservatives, measuring by drops or millilitres (volume) is not as accurate as measuring by grams (weight) . It is best therefore to keep your Preservatives at room temperature (20°Celsius) and remember that the drops in the conversion table on the previous page refer to the amount coming out of Aromantic's 30ml glass dropper bottles with large dropper lids and not someone else's droppers as these can vary so much. I have always advised that measuring on a very good scale is the most accurate.

Good luck!

Kolbjorn Borseth