Friday, August 12, 2011

Preserving Your Homemade Hair Gels

If you make homemade hair gels (I won't discuss other products right now because ionic-charged ingredients in conditioners or shampoos makes preserving more complicated), and you do not store them in the refrigerator – or if you usually do, but are going away from home, then you need to think about preservatives. This refers to flaxseed based gels, vegetable gum based gels (guar gum, xanthan gum), aloe based gels, or any other vegetable-based gel (psyllium, okra…).

How Can A Product Go Bad?

Rancidity can happen to oils (aka oxidation) if you use them.

Bacteria or fungi can grow, using the sugar and nutrient-rich gel for food, also excreting their metabolic wastes into the gel causing cloudiness, fermentation, changes in thickness and texture and odor.

These are the biggies, not only because they ruin your gel, but because the bacteria (or fungi) growing in your un-preserved, un-refrigerated gel could be pathogenic. Let me get up on my soapbox for a moment. We need not fear bacteria everywhere. Every bit of our bodies is permeated with bacteria and other critters and without them, we would be weak, sick, malnourished and completely different than we know ourselves to be. Having said *that*, bacteria on your skin, in your guts are not usually making you sick. But if you get a cut, then there's an opportunity for an infection. If bacteria end up where they should not be, or if they have a chance to colonize a medium and grow like mad (or even form self-protecting biofilms like plaque on your teeth) – then you've also got a problem. So if your hair gel turns into growth media for bacteria and fungi and it gets on your hands and then in your eyes, on a tiny cut, in your mouth etc., it's a problem. Especially for gels based on food-quality items. I found bacteria from the *Staph/Strep* families, and others which would be food-born pathogens in unpreserved, unrefrigerated, homemade hair gel.

If you want to preserve your flax-based or gum-based gels, there are some safe, easy ways to do this. I have tested some preservatives, and my data have been added to by some other people with preservatives I have not yet tested. I began with 2 bases, one was flaxseed gel with agave nectar and hydroxyethylcellulose, the other had olive oil added as well. For each gel, one sample was refrigerated and one was left at room temperature. I did a un-preserved control too. I used a Gram-stain test to detect bacteria in the gels as they were. This is a different method than used by cosmetics companies - but it gives us a rough idea of how our preservatives are working.

Preparation Notes: Even if you're refrigerating your gels, it's best to use *distilled water* to prepare them (no chlorine or minerals) and to wipe down all your utensils and nearby surfaces with rubbing alcohol. Remember, this isn't just "cooking," you're planning to keep using this for longer than a week – you need to be careful! Put your gel in a bottle with a lid. If it's in a cup where you'll be sticking your fingers into it, you dramatically increase the potential for contamination. And spilling (trust me about the spilling bit).

Why are preservatives given as percentages? That's the best way to measure. If you need 0.5% (half of one percent) preservative, that is 0.5 grams per 100 grams. Or 1.25 grams per cup (250 grams). 1.25 grams is one *full* quarter teaspoon (1/4 tsp) per cup of gel. You will have a much more accurate preserving experience if you weigh your gel, do the math, then weigh your preservative accordingly. It is difficult to weigh out grams on an inexpensive kitchen scale - you need one that reads at least "0.00" or gives you 2 decimal places.

Here is the math: weight of gel in grams x % preservative recommended by manufacturer in decimals. For example, your gel ends up weighing 236 grams and you're using 1% preservative. Multiply 236 x 0.01 = 2.36 grams.

If you must "fudge" and use measuring spoons (approximate measurements, you will probably not get exactly this percent using a measuring spoon):

1/4 teaspoon per full cup = 0.5%

1/2 teaspoon per full cup = 1%

Ideally, we subtract the weight of each additive from the total when formulating products (add one gram preservative, subtract one gram gel). If your product goes funky because the measuring was off - don't say I didn't warn you. Just don't use it! And if you make a product to give a friend or family member - please use a preservative. Friends don't let friends use contaminated hair gel.

The scorecard (hits, misses, and so-so):

Hit!

Preservative: Refrigeration: Regardless of the additive (agave nectar, oils, protein, thickeners), refrigeration for up to 2 weeks prevents or effectively inhibits the growth of bacteria and fungi to the point at which they are scarcely present. If you don't use up a batch of gel in 2 weeks and you're not using a commercial preservative, freeze half.

So-so (at room temperature):

Preservative: Citric acid (1/8 tsp), potassium sorbate (0.2%), vitamin E (0.2-0.3%): This may work for you, but when I tested it for bacteria, I found small quantities of bacteria and lesser amounts of fungi at 2 weeks time. The gel had begun to look cloudy. The citric acid discourages some species of bacteria, the potassium sorbate inhibits fungal (mold) growth (and you could double the amount of potassium sorbate). But this won't preserve for a long time. If refrigerated, this preservative combination is perfectly adequate.

Hit!

Preservative: Citric acid (1/8 tsp), potassium sorbate (0.2%), vitamin E (0.2-0.3%), EDTA (disodium or tetrasodium EDTA) at 0.2%: This appeared to have very good preserving qualities with virtually no bacterial or fungal contamination at 2 weeks at room temperature or refrigeration. EDTA is not only an antioxidant, but it inhibits cell wall formation in bacteria. **2013 update:** The pH of this may be a bit low, start with much less citric acid, adding a little at a time and use pH strips to make sure the pH is above 4.5.

Miss
Preservative: Cosmocil CQ (**Polyaminopropyl biguanide, 0.5%) and potassium sorbate (0.2%):** A very mild (to the skin) preservative which must be paired with another preservative to inhibit fungi (mold)**.** Not a good result. The preservative made the gel look cloudy and thicker from the beginning, and there was a film over the surface at 2 weeks in the un-refrigerated sample which appeared to be mold. I was not able to identify what sort of mold. No bacterial growth was evident, and the percentage of potassium sorbate *could* be increased – but this preservative made an aesthetically and texturally unpleasing product from the start, thus is was a "miss."

Hit!
Preservative: Sodium Hydroxymethylglycinate (0.5%) and citric acid to balance the pH:
There was no evidence of bacterial or fungal contamination in the refrigerated or unrefrigerated samples. The gel was crystal-clear and the preservative did not change the texture or thickness.
A word of caution: this preservative is a potential formaldehyde releaser and may irritate skin which is sensitive to formaldehydes. I can tolerate it, although I cannot tolerate other formaldehyde releasers, so to each their own. This preservative raises pH and it is necessary to bring it back down with citric acid so that it is not damaging to the hair.

Hit!
Preservative: Optiphen Plus (Phenoxyethanol, Caprylyl glycol and Sorbic acid, 0.5%):
This preservative may not work well if you use hydroxyethylcellulose in your gels (it may be rendered less effective). I have not tested this for bacteria yet, I am sensitive to this preservative. I have used it in other products and I know of another person who used it in a complex flaxseed gel mixture with no evidence of contamination after almost a month. Contaminated flaxseed gel has the advantage of becoming cloudy at low contamination levels. Optiphen Plus makes thick polysaccharide gels like flaxseed gel slightly less stringy (alters viscosity when added). It is a broad-spectrum preservative effective against bacteria and fungi.

Other preservatives I have not tested (that gets expensive!) which should be compatible with homemade gels so long as you are not adding any commercial conditioners (and possibly cellulose derivatives) are: Tinosan, Phenopip, Germall Plus, Germaben, and Geoguard Ultra.

If your homemade natural hair gel becomes cloudy, changes color, changes odor or viscosity (thickness, texture), throw it out!

On the Go: If you are away from home, no matter how well you've preserved your product, it should not be left in a hot car or in the sun. An exception would be putting a single-use of gel in a small bottle in a gym bag or purse to use *that day*. My travel tip is to bring along a cooler and stash the gel in there (along with food – hey, I travel cheap)! If you are flying or taking a train, you can stop at a store at your destination and purchase a small cooler (even a large, insulated coffee cup will do if you pack some ice around your bottle of gel).

A note about additives and grapefruit (seed) extract:
If you use ingredients such as prepared protein additives, these are pre-preserved. But don't count on the preservative in there to protect your product. It may help a little, but it's not enough.
Grapefruit seed extracts have not been demonstrated to be true preservatives. Sometimes they work because of the preservatives added *to* the grapefruit seed extracts to keep it from going bad (said preservatives are usually not on the product label), but don't trust these products to keep yours from becoming home to colonies of bacteria and fungi. If you want to use grapefruit seed extract, buy it from a cosmetics-ingredient supplier so you are getting a concentrated product meant for preserving cosmetics. If the bottle says it's safe to ingest, it is probably not going to preserve your hair products for very long.

Clean Bottles!
When you're done with your gel, if you wish to re-use the container, wash it well with soap and water (and a bottle brush if you have one), then use diluted bleach or rubbing alcohol (or un-diluted white vinegar) to sterilize. Pour a little in the bottle, cap it, and shake it up. Leave the bleach or alcohol in there for 20 minutes, shaking several times during the interval. Run some disinfectant through the cap if it's a flip-cap. Then empty and rinse.
Here is a link to a post about cleaning bottles for your homemade gel.

Posted by WS at 12:05 PM

Labels: flaxseed gel, natural hair gel, preservatives, preserve homemade hair gel

66 comments:

DP April 7, 2015 at 2:30 PM

Hi

Where do you buy Sodium Hydroxymethylglycinate?

Thanks
D

Reply

Replies

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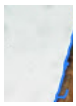

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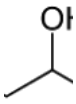

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WS April 8, 2015 at 11:16 AM

Hello D,
In the US, you can buy Sodium Hydroxymethylglycinate or "Suttocide A" online from Ingredients To Die For, Essential Wholesale, Florida Natural Supply. If you use this - make sure you are testing pH levels because the pH of the final product once you add the preservative will be too high, be ready to lower it to around 5 to 6 with citric acid.

Reply

Unknown September 26, 2015 at 3:27 PM

Hello and thank you for this recipe! I made it with gum arabic and xanthan gum. Also I used a tablespoon of Dr. Bronner's styling creme, which has worked in combination with hair gel for me in the past. I wanted the gel to function both as a styling aid and as a light leave-in conditioner. The result was beautiful on my hair. I am wondering what you would suggest as a preservative to make this shelf stable. I used 15,000 I.U. vitamin E and 33% grapefruit seed extract (and just read on your blog that neither of these is particularly effective). The product was good stored in the bathroom for a week, but now it has started to create gas and grow like The Blob! The color and smell are still good, but I don't dare use it.

I have some dermatitis, so I'm wondering what preservative would be the gentlest. Rosemary oil?

Yours,

Dali

Reply

Replies

WS September 27, 2015 at 11:42 AM

For really sensitive skin, you might try this combination (from the post above): Citric acid (1/8 tsp), potassium sorbate (0.2%), vitamin E (0.2-0.3%), EDTA (disodium or tetrasodium EDTA) at 0.2%. Citric acid lowers the pH to discourage bacteria and mold that can't grow at low pH (might need less if your tap water is not pH 10 like mine), potassium sorbate helps control mold and works best at low pH, Vitamin E is an antioxidant that will help with any oils you might have added to your gel and EDTA is an anti-microbial and ingredient stabilizer.

Gluconolactone and sodium benzoate (Geoguard Ultra, Microguard) is also marketed for sensitive skin. I think it would be best to use with EDTA.

When we're trying not to use Formaldehyde-releasing preservatives (if your skin is sensitive to those - Germall Plus, Germaben, Suttocide) or Phenoxyethanol (Optiphen Plus) if your skin is sensitive to that - which are all broad-spectrum preservatives - then we must combine less broad-spectrum preservatives to create a system of preserving that doesn't have any loopholes for bacteria or molds to exploit.

Rosemary oil has antimicrobial qualities - but that means maybe the oil (diluted in a carrier oil) might help reduce bacteria or fungi growing on the skin. It does NOT mean that rosemary oil is a preservative. In fact, as an oil, rosemary oil won't even be suspended in a gel very well because oils and water don't mix. If it could inhibit bacteria, it will only inhibit the ones it's in contact with - not throughout the gel.

If this sounds like too much work - you can freeze your product in an ice cube tray and thaw a single use (1-2 cubes).

Unknown September 27, 2015 at 7:46 PM

Thank you for your response. I think I'm going to try the GSB, since I'm trying to reverse engineer (and improve) Aubrey Organics' chia gel:

Ingredients: Aqua, glycerin, cyamopsis tetragonoloba (guar) gum, alcohol denat. (38b, lavender), aloe barbadensis leaf juice*, chenopodium quinoa seed extract*, astragalus gummifier gum, panthenol (vitamin B5), rosa rubiginosa (Rosa Mosqueta®) seed oil*, fragrance‡‡, lavandula angustifolia (lavender) oil, gluconolactone, xanthan gum, citrus grandis (grapefruit) extract, ascorbic acid (vitamin C), camellia sinensis leaf extract (black tea), hibiscus sabdariffa flower extract, aspalathus leaf extract (black tea), hibiscus sabdariffa flower extract, aspalathus linearis extract (rooibos tea), camellia sinensis leaf extract (green tea), citrus limon (lemon) peel oil, rosmarinus officinalis (rosemary) flower/leaf/stem extract*, salvia officinalis (sage) flower/leaf/stem extract*, equisetum hiemale extract (horsetail), tussilago farfara (coltsfoot) leaf extract, aesculus hippocastanum (horse chestnut) extract, sodium benzoate.

What I can't figure out is why they would have citric acid, when GSB comes with a warning not to use it in formulations with that ingredient:

"There is some concern that Sodium Benzoate, one of the ingredients in NeoDefend, in combination with L-Ascorbic Acid in products can form Benzene, a known human carcinogen. The presence of ascorbic acid and benzoates alone does not lead to the formation of benzene. Certain additional conditions are required for trace levels of benzene to form, including heat, ultraviolet light and metallic ions in the mixture. Therefore, a product containing ascorbic acid and benzoates will not necessarily contain any detectable levels of benzene. The use of EDTA, which chelates metallic ions can therefore be of assistance in the inhibition of

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benzene formation. However, because of the potential to form benzene, we recommend that NeoDefend not be used combination with L-Ascorbic Acid (Vitamin C). Citric Acid is not thought to induce significant benzene production in combination with Benzoic Acid, but some evidence suggests that in the presence of ascorbic acid and benzoic acid, citric acid may accelerate the production of benzene. Therefore, the use of NeoDefend and L-Ascorbic Acid and Citric Acid in the same cosmetic formulations should be avoided." http://www.lotioncrafter.com/neodefend.html

WS September 28, 2015 at 7:27 PM

I don't see any citric acid in the ingredient list you copied. Ascorbic acid is there - but that's quite different. I haven't tried this product - it's fairly new. I have used astragalus gummifier gum (Tracaganth gum), and I wasn't really impressed, but I have not worked with it very much. The product this one replaces used to have acacia gum in it, which adds just a bit of "crunch." Not sure why they discontinued that one (the B5 design gel) but this one looks pretty good too.

Reply

Unknown September 28, 2015 at 11:18 PM

Hello again,

I was a faithful user of the old Aubrey B-5 Design Gel, and mixed it as needed with Dr. Bronner's styling creme. Then Aubrey discontinued it and put out the chia gel as part of their new chia line. The new gel doesn't work for me particularly well. That's why I started researching DIY hair gel and landed on your blog. :-)

The flaxseed gel recipe with added xanthan gum, acacia gum, vitamin E, GSE (probably due to the glycerin in it) and Bronner's creme is working for me phenomenally well in Atlanta humidity, without a separate conditioner. I just have to refrigerate it or find a proper preservative. That said, I looked at Aubrey's chia gel to see how they preserved a watery formulation with chia protein, thinking it would be analogous to flaxseed gel.

By the way, I mistook ascorbic acid for citric acid in the usage note above. However, L-Ascorbic acid is also not supposed to mix well with GSB, so I'm confused as to why that's in there. In any case it seems that they have reformulated to use Leucidal, as the ingredients listed on Aubrey's website are not the same as the back of my bottle, bought months ago when the line came out:

INGREDIENTS: Aqua, glycerin, cyamopsis tetragonoloba (guar) gum, alcohol denat. (38b, lavender), aloe barbadensis leaf juice*, chenopodium quinoa seed extract*, alcohol*, astragalus gummifer gum, leuconostoc/radish root ferment filtrate, xanthan gum, panthenol (vitamin B-5), rosa rubiginosa (Rosa Mosqueta®) seed oil*, fragrance‡‡, alcohol, citrus grandis (grapefruit) extract, salvia hispanica seed oil* (chia), ascorbic acid (vitamin C), camellia sinensis leaf extract (black tea), hibiscus sabdariffa flower extract, aspalathus linearis extract (rooibos tea), camellia sinensis leaf extract (green tea), citrus limon (lemon) peel oil, rosmarinus officinalis (rosemary) flower/leaf/stem extract*, salvia officinalis (sage) flower/leaf/stem extract*, equisetum hiemale extract (horsetail), tussilago farfara (coltsfoot) leaf extract, aesculus hippocastanum (horse chestnut) extract.
* Organic
‡‡Natural isolate blend sourced from essential oils

If you don't mind, can you tell if anything else in that formulation is working in concert with the Leucidal as an antimicrobial or preservative? I see that the ascorbic acid would bring the pH down and that the rosemary extract might be in there as an antioxidant.

Thank you again.

Dali

Reply

Replies

WS October 1, 2015 at 8:25 PM

The new product (ingredients posted by you above) has alcohol denat.(ethanol), but it's listed after the guar gum, so it's preserving powers aren't much help. Right after the quinoa protein, I see alcohol again, but there is no way the total alcohol content is even close to the ~65% needed to be anti-microbial.
So it's down to 2-3 things.
1) They're putting their faith in the leuconostoc/radish root ferment filtrate.
2) The ascorbic acid may lower the pH enough to discourage some species of bacteria.
3) The quinoa protein (and every botanical extract) has its own preservative. Those do not need to be listed on the label. So the aloe, protein, and all the other herbal extracts also contribute their preservatives (although diluted) to the mixture. They don't preserve the product, but they aren't such liabilities because they're pre-preserved. Their preservatives might have a cumulatively helpful effect. Rosemary extract on its own is probably not an anti-microbal, but its preservative may help, like the others. "Extracts" are usually water-based ingredients.

Rosemary essential oil (not extract) has antimicrobial and antioxidant activity, but essential oils are not thought of as preservatives. If they were to work - they would need to be in oil-based (water-free) products.

Reply

Unknown October 20, 2015 at 1:03 AM

Thanks for the info. I'm just getting into the DIY hair care and find it to be a delight.

Reply

Unknown February 21, 2016 at 9:49 AM

Can i make the flax seed gel commercially??

Reply

Replies

WS February 22, 2016 at 8:50 PM

Flaxseed gel is extracted for industrial applications, I have little experience with that. If you were making it as a cosmetic product, it requires the highest recommended amount of a preservative that is compatible with anionic ingredients. Even so - the shelf life would be limited to 1-3 months before the product would be unsafe to use.

Unknown April 4, 2017 at 10:10 AM

Hello I have a questions I just started making my own DIY hair gels for my 1 1/2 year old curly haired son. I am having trouble like you said above preserving it. My question is are the preservatives you mentioned above safe for kids is there one formulation you that you could recommend for my personal situation I love the way the product works if only I can make it last longer.

Reply

TrishanaRenay June 2, 2016 at 12:29 PM

Hello, I have a flax seed gel recipe using a base of rosemary and thyme water (boiled) and added oils to the finished gel such as, coconut, castor, olive and essential oils. Can you recommend a preservative that will work with this recipe?

Reply

Replies

WS June 5, 2016 at 11:46 AM

Hello Trish,
Optiphen Plus would be a good choice as a broad-spectrum preservative. Gluconolactone/Sodium benzoate is another. Both should not have any interactions with your ingredients.
Your formula will require using the preservative at the higher end of the recommended use because you have multiple challenges to preservation - herbal "tea," and flax gel. If you're using a lot of oils, you might consider adding some EDTA or vitamin E to reduce the risk of oxidation (rancidity) in the oils.

TrishanaRenay June 22, 2016 at 8:09 AM

Thank you so much for your response! I was thinking about using rosemary and thyme essential oils instead of the 'tea' from the herbs. Will I get the same benefits from these herbs if I use essential oils vs the straight tea?

WS June 22, 2016 at 12:47 PM

Trish,
Essential oils and teas will contain some of the same "active ingredients" - but probably in very different concentrations because for an essential oil - the oils are extracted from the plant. The water-soluble "ingredients" are not. Essential oils are more concentrated than teas - but the effects may be different.

TrishanaRenay June 22, 2016 at 1:07 PM

Oh, I see. You have been such a big help to me, thank you so very much. I love your blog and I especially love this article! It is very detailed and helpful :) thank you!!

Reply

BritCurl800 July 25, 2016 at 9:26 PM

GREAT post. May I ask, what's the equivalent of 'rubbing alcohol' in the UK, England? It's not available to buy over here (under that name at least). Any idea?

Reply

Replies

WS August 1, 2016 at 9:43 AM

Hello BritCurl,
Rubbing alcohol is a colloquial name for isopropyl alcohol or isopropanol. It is usually at least 70% isopropyl alcohol. A very high proof ethanol will work for sterilizing also. W

Reply

Unknown August 4, 2016 at 10:29 PM

Very informative and fun to read article.How does Citric acid , potassium sorbate,cinnamon,greentea and vinegar work as a preservative in combination with each other?

Reply

Replies

WS August 10, 2016 at 6:11 PM

Hello,
Citric acid adjusts pH, so it may help preservatives work better - most preservatives have a pH range in which they work best. Potassium sorbate inhibits mold growth in products. Cinnamon, green tea and vinegar are not preservatives and do not necessarily assist in preservation.

Reply

TrishanaRenay August 28, 2016 at 10:23 AM

Good day! Quick question, say I would like to make a flax seed gel curling custard, using flax gel, honey, aloe vera, shea butter, oils. How would I go about preserving this and which would be best?

Reply

Replies

WS September 2, 2016 at 7:15 PM

Hello Trish,
You need a broad-spectrum preservative for that blend, like Optiphen Plus or Sodium benzoate with Gluconolactone. Read the specifications for whichever preservative you choose - it MUST be compatible with anionic ingredients because flax gel is anionic. For your oils and shea butter, some vitamin E would be nice to prevent oxidation (rancidity). Disodium EDTA is a good addition also to act as a co-preservative and keep everything stable. Best wishes - W

Reply

Unknown October 9, 2016 at 6:35 PM

I'm making a flaxseed/marshmallow root hair gel. What can I add to preserve it. And make it last outside refrigerating for a week or in the refrigerator.

Reply

Replies

WS October 16, 2016 at 6:44 PM

If you only want one week of room-temperature preservation, citric acid and potassium sorbate might be adequate if you've sterilized your equipment well - the percentages are listed above. This needs to be protected from *all* light because potassium sorbate is light-sensitive. I prefer to store gels in clear bottles so I can see into the gel - but cover them with dark paper or aluminum foil to keep the light out.
If you're putting any oil in your gel, you might add Vitamin E also to keep it from turning rancid.
This will give you the longest shelf life if you refrigerate, but it should last a while at room temperature. Good luck! W

Reply

Ren November 15, 2016 at 10:43 AM

Hi,

Thank you. I've read this article so many times, it's really helpful. I have a question, if I use Optiphen Plus as my preservative for Flaxseed Gel and still put it in the fridge, would it really really extend the shelf life? Like up to 6 months? Or does the fridge temperature somehow deactivate the preservative?

Reply

Replies

WS November 24, 2016 at 4:02 PM

Hello "Unknown,"
Refrigerating the preserved gel should assure a longer shelf life than leaving it out at room temperature. The only potential problem I can think of, which may not be a problem at all when using a preservative around the 1% range is that Optiphen Plus alone can solidify at refrigerator temperatures. When diluted in a product, it may not do that - but you'd need to observe the product carefully for that effect when you put it in the 'fridge.

Reply

Unknown December 3, 2016 at 2:38 PM

Hi, can i use sodium benzoate without gluconolactone as a preservative? Btw this article is awesime!

Reply

Replies

WS December 11, 2016 at 6:22 PM

Hello Abisola,

You can use Sodium benzoate alone, especially if the product does not need a long shelf life (1-2 weeks) and all the tools have been well sterilized - and you keep the pH below 5 (4.5 would be hair and skin-appropriate). But it is better to combine Sodium benzoate with other preservatives like potassium sorbate (for mold control) and another co-preservative like EDTA or one of the antimicrobials that has good activity against bacteria.

Reply

Anonymous January 13, 2017 at 12:32 PM

Hello,
I admit I've never commented on a blog/youtube before. I noticed you reply to everyone's questions and concerns, for that I say thank you because in many instances I've had the same questions/concerns.

I've been looking into making my own detangler out of the following ingredients: marshmallow root, slippery elm bark, aloe Vera juice and an oil of choice.

I've been thinking of adding a little bit of or a combination of the following: horsetail, oat straw, Nettle, chamomile, burdock root, and fenugreek.

I have the following questions:
A) is adding all the additional ingredients a bad idea (is it too much?)?
B) is it possible to wear it as a leave in without damaging the hair because there's no added perservatives?
C) should I include a perservative, if so, what do you recommend?

I noticed that the same base ingredients are in the kinky curly knot today leave in/detangler. The main difference is that it has a perservative plus citric acid.

D) Should I add citric acid?

Thank you in advance for your help and advice.

Astri

Reply

Replies

WS February 4, 2017 at 3:39 PM

Hello Astri, sorry this response is so delayed. If you make a mixture of herbal teas or decoctions, it will have a very short shelf life. All the plants used to make the detangler are growing out in the real world and will have bacteria and fungi living on them naturally.

For herbs that are boiled for more than a few minutes, some of these microbes will be killed. But others may not be if you just pour hot water over herbs and let them steep. Even with refrigeration to slow down the growth of bacteria and fungi, the mixture will probably start to "go bad" within a week or so.
Preservatives only work in products that have very little bacterial or fungal contamination already, they probably can't preserve herbal teas unless 1) all herbs are boiled for 5-10 minutes, 2) All the utensils you use are sterilized in alcohol or bleach solution and 3) you use the maximum recommended (maximum safe level) of preservative. Even then, I would refrigerate the product. You would need a broad-spectrum preservative. It needs to be compatible with anionic ingredients (check the label).
Kinky Curly probably used commercially prepared herbal extracts which are pre-preserved and concentrated. I believe their preservative is Phenoxyethanol, though that alone is not broad spectrum. Phenoxyethanol sold as "Optiphen Plus" which has 2 other ingredients to make it broad-spectrum (sorbic acid and caprylyl glycol) might work.
Optiphen Plus might be a good choice, so is Gluconolactone + Sodium benzoate. Check out all the "broad spectrum" preservatives and see what the specs are and if they might work for your product. If you're adding a conditioner base - you need something compatible with cationics too.

Citric acid is a pH adjustor. If you're using distilled water and herbal extracts, you probably don't need citric acid to lower the pH, it should stay around 6. If you want to use it, don't use more than about 1/16th of a teaspoon per 2 cups liquid or the pH will be much too low. Even that is on the low side.

As far as dry vs. wet - the bigger risk of a contaminated product is whenever it has the most access to eyes, nose, mouth, open wounds. Once a product is dry in the hair, bacteria that can't survive drying out are no longer a problem. I hope that helps! W

Unknown April 13, 2017 at 7:08 PM

Howdy,

I also want to say thank you for replying to everyone's comments I have found them as informative as the article! I am making a flax seed hair gel with only it, water, and Aloe vera juice. I have many many goals I'd like to meet while selecting the preservative, but only 1 requirement. It must have a 3-6 month shelf life. Any of the other goals I'd happily toss as long as I am making an informed decision.

My Question: What are your thought on the EWG's ratings for some of these preservatives.

Perfect world goals:
1. Works with organic products.
2. Is minimally processed.
3. Is easy to say.
4. Is a combination of the fewest ingredients possible.
5. Has a low EWG rating.

Thanks so much for your advice!
April

WS April 30, 2017 at 2:29 PM

Hello April,
You might be able to get a 3 month shelf life for flaxseed gel - possibly more than 3 months if it is stored properly and everything that touches the gel is sterilized - by using a broad-spectrum preservative. And using distilled water so there are no minerals or bacteria and the pH is suitable for most preservatives.
Broad-spectrum preservatives tend to be combination products so they cover a wide range of bacteria and molds. Your best bets are probably Phenoxyethanol, Caprylyl Glycol and Sorbic Acid (sold as Optiphen Plus or Phenoxyethanol SA), or Gluconolactone and Sodium benzoate (usually sold as a combination product) for what you are hoping to achieve, using preservatives that don't score too high with websites like EWG.

The more "natural" you go with preservatives, the more preservatives you'll need to combine to get a good shelf-life and the more ingredient interactions you'll likely run into. Of the two above - keeping products in the dark - opaque bottles or out of light will help the preservatives work best.

Pronunciation cannot be an issue. If you are giving products to other people or selling products, you need to list the ingredients in their full ingredient names so people know exactly what is in there to manage your liability. Some brands try to make their products sound more natural by not using proper ingredient names or leaving them out all together. But then people like me get angry when we get a blister-y rash for 2 weeks because we didn't know an ingredient was in there. Or our hair starts to fall out... Better to be forthcoming.

All preservatives are processed. We need them to be carefully processed so the active constituents are concentrated and present in exactly the amount it says on the label of the raw ingredient. That's a necessary sort of processing to assure the preservatives we use will keep our products safe to use and free from bacteria and mold growth.

Those 2 preservatives should work with most ingredients you'd put in flaxseed gel. If you use other preservatives, you'll need to be careful to avoid interactions. Flaxseed gel is anionic - that's important to know for predicting preservative interactions.
Good luck - W

Reply

Unknown April 4, 2017 at 10:16 AM

Hello,

I am new to the DIY products I love the flax seed guar gum combo I use it for my 1 1/2 year old curly haired child. I cant make it last I need to add preservatives so my question is what preservatives can I use for my gel that is gentle enough children. Is there a formula that you can recommend?

Reply

Replies

WS April 30, 2017 at 1:15 PM

Hello Judy,
The preservatives I mentioned are currently used in products made for children commercially. Preservatives such as Phenoxyethanol, Caprylyl Glycol and Sorbic Acid (Optiphen Plus), Gluconolactone and Sodium benzoate. "Gentleness" depends on whether a person has extremely sensitive skin or not.
Preservatives by their required effect must prevent the growth of bacteria and molds and in doing that - they are not 100% gentle and benign or they would not work. That's not meant to sound snarky - it's a difficult compromise people who formulate products must make. We know preservatives can present environmental problems and can irritate some people's skin and contaminate water, but if we don't use them, we risk anything from minor annoyance at products going bad too soon, to minor skin infections, to life-threatening infections. These compromises are never taken lightly.

The most gentle (to the eyes) preservative in this blog post, Polyaminopropyl biguanide, 0.5%, does not work in flaxseed gel, it turns it cloudy- and when you see an interaction like that - you must assume the preservative has probably been inactivated.

0.2% Potassium sorbate + citric acid + 0.2% EDTA (+ Vitamin E if you use oils in the product) may give you a 2, maybe 3 week shelf life if all utensils are sterilized and is not too likely to cause skin problems unless one has a sensitivity to Potassium sorbate.

Silver citrate and citric acid (sold as SIlverion) is another option for a "natural" preservative. It is used in very small amounts, but should be compatible with flax gel as long as you do not add any cationic ingredients like hair conditioner. This may also give you a 2-3 week shelf life if all utensils are sterilized. If you use oils in your product, add some Vitamin E. Any hair conditioners will inactivate the preservative.

Preservatives are picky about ingredients - so it isn't as easy as it seems like it should be.

My skin is extremely reactive to preservatives and I manage that by skipping preservatives and freezing hair gel in a silicone ice cube tray, then popping out the gel-cubes once frozen and thawing gel as I need it.
Best wishes - W

Reply

Unknown April 4, 2017 at 10:55 AM

Hi. Thanks so much for your post. I make my hair gel with flaxseeds, water and 1-2 essential oil drops. Of course I always refrigerate it. I am going to Africa this summer for 3 weeks and need to find a way to preserve it with no refrigeration. What do you recommend? And where would I buy the products?

Reply

Replies

WS April 30, 2017 at 1:34 PM

Hello Melissa,
I'm going to answer you in the form of links to ingredients. When I post links, they're not always active ones. I hope they will be, otherwise, copy and paste.
Make sure you use distilled water (not "spring water" and not tap water). Distilled water assures your pH is correct and there are no minerals or bacteria etc. to mess with your preservation.
Sterilize everything that touches your product with isopropyl (rubbing) alcohol or bleach solution (dilute it as it directs on the back of the bottle for cleaning). Even rinse out your bottles with alcohol or bleach - and then rinse them clean with distilled water or tap water you've boiled and then cooled. Let them drain upside down to dry.
I will link you to only broad-spectrum preservatives because you'll need that coverage for bacteria and molds. There are 3 - but I listed different suppliers.
These preservatives come out fairly well in tests. Some of the newer, natural preservatives require 3 preservatives used together to achieve preservation, and you might not want to mess with that.
Storage is a concern. Keeping your gel of the light (all light- store it in a dark place) will help the preservatives work best. And keeping it in as cool a place as possible.
These ingredients need to be weighed out where 1% = 1 gram per 100 grams. With flax gel, you need to aim for the middle to higher end of the recommended use because the carbohydrates in the gel are challenging to preserve.

http://www.makingcosmetics.com/Phenoxyethanol-SA_p_243.html

http://www.lotioncrafter.com/optiphen-plus.html
http://www.ingredientstodiefor.com/item/Optiphen_PLUS/87?category=32

http://www.makingcosmetics.com/Gluconolactone-SB_p_978.html
http://www.lotioncrafter.com/neodefend.html
http://www.ingredientstodiefor.com/item/Gluconolactone_Sodium_Benzoate_GSB_/565?category=32

http://www.makingcosmetics.com/Benzylalcohol-DHA_p_236.html

I have also wondered about dehydrating flaxseed gel on a food dehydrator sheet to pack along and re-hydrate. I have not tried it yet, though.
Good luck and safe travels! W

Reply

fatma April 18, 2017 at 1:58 AM

I want to make a combination of gel aloe vera gel product commercial two months validity inside the cooler Is sodium benzoate suitable and what is the best way

Reply

Replies

WS April 30, 2017 at 3:44 PM

Hello Sela,
Sodium benzoate is not enough to preserve a product alone. It needs another preservative which is more active against bacterial growth - Sodium benzoate does not have enough anti-bacterial activity at concentrations safe to use in cosmetics.

Reply

Umma Threads April 30, 2017 at 8:34 AM

This article has been so helpful, but I'm still getting a little lost while reading. I would like to make a small,very basic flaxseed gel with distilled water and raw honey. I will not be adding oils directly to the gel, instead I plan on sealing my hair with a oils afterwards. I do not plan on making much gel at the moment. I'll likely be starting out with a couple of tablespoons to 1/4 cup of gel. It will be exposed to light and not refrigerated. Which preservative would you suggest in this case? Thank you!

Reply

Replies

WS May 17, 2017 at 9:13 PM

Hello Umma,
If you are refrigerating the gel, sterilizing all your utensils and containers - and not putting your fingers in it (scoop out with a clean spoon if it's in a jar), it should be fine as it is for a week or a week and a half. Don't share with anybody else, though.

If you want to add preservative, a really simple one is Silver citrate + citric acid. Like "Silverion 2400" from Lotioncrafter. http://www.lotioncrafter.com/silverion-2400.html You use just a several drops for an 8 oz bottle of gel - so you would need very little for your mini-batch of hair gel.

"Optiphen Plus" is a good choice too, but for such a small batch it could be difficult to weigh out (or measure) just the right amount.
Good luck! W

Reply

Curly Purple June 6, 2017 at 12:23 PM

Hello I understood everything but the part where you said "Ideally, we subtract the weight of each additive from the total when formulating products (add one gram preservative, subtract one gram gel)." I dont get that part. Is it only for calculations or do I have to actually subtract "one gram of gel" before adding the "one gram of preservative"? Or can i just add the preservative without subtracting anything?. Can you explain a little bit more about this procedure

Reply

Replies

WS June 10, 2017 at 5:11 PM

If you are making a total of 100 grams of gel and you're using 1g of preservative, to assure the full 1% preservative concentration, you would use 99 grams of gel + 1 gram of preservative.

But when you're dealing with such small amounts and simple formulas, using 100g of gel with 1 g of preservative won't move the total percentage of preservative all that much.

But let's say your product had 30 grams of "other ingredients." If you didn't subtract those 30 grams and you added them to the 100 grams of gel (new total =130 grams), the 1g of preservative that was supposed to equal 1% would be present only at 0.75% and in some cases, that could cause preservative failure.

Reply

Unknown July 21, 2017 at 8:19 AM

Hello! Your blog is amazing and I come here often to reread your articles and recipes. Thank you! My question is: I make a flaxseed gel, with Marshmallow, Horsetail, Xanthum Gum, and Geletin. my recipe makes 8 oz. I usually put 4oz in a pour out clear bottle, and then freeze the remainder until I need it. I would like to add a preservative so I can leave on the my bathroom counter. Would you recommend the Optiphen Plus? If so, how much should I use for my 8oz recipe? And if I use that preservative, can I still freeze that other 4oz? I would be happy to get just a few weeks, non-refrigerated. And can you please tell me at what point to add a preservative to my process? (I add the gelatin and xanthum gum after it's been strained, and started cooling down. After it cools for a while more, I then blend it up to make it a smoother consistency) Thank you for any feedback you can provide. I appreciate it.

Reply

Replies

WS July 22, 2017 at 12:51 PM

Hello Kathy,

Preservatives are added when products have cooled down to 110°F or below. With flaxseed gel, you'll need to blend it in very well because the gel is thick and the preservative needs to be evenly distributed throughout the gel to avoid un-preserved "pockets" of gel.
You usually look at the recommended use for a preservative, for Optiphen Plus (which is a good choice for compatibility and ease of use) the recommended use is 0.5% to 1.5%. You want to use as little as necessary for preservation to avoid skin irritation. And as much as you need to keep your product preserved. Flax gel with herbal extracts and gelatin is an extreme challenge for preservation because all those ingredients will go bad easily. So you'd probably start with 1%. It is better to weigh the gel and the preservative so you're certain to have 1% (or 1 gram preservative per 100 grams gel). If you'd rather measure, you would be using about 1/2 teaspoon preservative per cup of strained gel with additives to reach something around 1%. Weighing is more accurate.
Make sure you're sterilizing everything that touches the gel with dilute bleach or rubbing (isopropyl) alcohol to prevent bacteria from getting into the product.

You can freeze the preserved gel. You might need to blend it up, or at least shake it up really well once it has thawed. Good luck!
W

Reply

Unknown August 15, 2017 at 1:50 PM

I know this blog was awhile ago. Would it be possible to the flax seed gel, adding coconut oil, honey and vitamin e. Would that allow it to be stored out of the fridge for an extended period without issue?

Reply

Replies

WS August 25, 2017 at 8:22 PM

Hello Jules,
No, those additives will not help preserve the gel. The Vitamin E can help prevent the oil from going rancid (oxidation), but the gel will spoil at the same rate as without any of these additives - honey might even speed up spoilage, it is also food for bacteria.

Reply

K. Lewis September 13, 2017 at 3:18 PM

Hello,

Thank you for providing such detailed responses, I'm learning SO MUCH. I hope to produce Flaxseed Gel commercially but I am running into a few problems. I need the gel to last 1-2 years...is that even possible with Flaxseed Gel?

Here's my recipe:
7oz Gel

1oz Oil
Emulsifier (Xanthan or something better)
Fragrance
Preservative (Optiphen PLUS)

Problem: Optiphen PLUS breaks down the viscosity of my gel. When I first make it, it's thick and gooey. Then the next day it's thinner with less hold. At first I thought it might be my electric hand mixer but then I read on your blog that it was the Optiphen and I had an AH HA moment.

Questions:
1. Can I actually preserver the gel 1-2 years?
2. If so, what preservative can do this for me?
3. If not, what do you suspect is the longest I can preserve it and why?
4. Is Xanthan the best emulsifier? It clumps a lot and sometimes leaves a bit of white residue on the hair. Is there another emulsifier you would recommend?

I am trying to use ingredients that are whole foods compliant. Here is the list of what's not allowed.
http://www.wholefoodsmarket.com/about-our-products/body-care-quality-standards

I was going to buy everything from your blog recommendation but then I saw EDTA was not permitted.

Reply

Replies

WS September 15, 2017 at 4:23 AM

Hello,
Getting a 1-2 year shelf life requires that you are able to create products in a sterile environment - which means air flow must be filtered and controlled, all surfaces sterilized, all tools thoroughly sterilized - inside and out.
Flax gel has a tendency to break down, so it's very challenging to preservatives, so a 1-2 year shelf life is going to take some work to achieve - and some microbial testing and trial and error with different concentrations of preservative.

Jessicurl Rockin' Ringlets which is a flax gel sold commercially has a shelf life of 2.5 years, but 1 year after opening. I suspect it is made in a cosmetics formulating lab, which is a very controlled environment.

A broad-spectrum preservative is best for longer shelf lives. Optiphen Plus, Gluconolactone and Sodium benzoate are examples. Those can benefit from stabilizers like EDTA, but there are others like Sodium gluconate. Any product for sale needs to be tested for bacteria and molds over time (and with normal storage and use) to make sure the product is safe and stable. Test kits can be purchased (Makingcosmetics.com sells one), and some cosmetic formulating labs can test that for you. I don't know whether insurance requires that for selling products, but doing testing is very important for creating safe products.

Xanthan gum is a good thickener, it will help keep oils suspended. I can't remember what these translate into (in percentages) but somewhere between 1/4 and 1/2 teaspoon per 8 oz gel is enough to add a bit of hold and thicken the gel without too much flaking. Dehydroxanthan gum might work better. The full 1/2 teaspoon can be a bit too thick.
Good luck! ~W

WS September 15, 2017 at 5:04 PM

P.S. In my head, I jumped to the conclusion that you were planning to sell the flaxseed gel - that requires a lot more stringent testing because one's liability is higher. I'm not sure that was clear.

Reply

Unknown October 18, 2017 at 12:24 PM

Hi WS,
This is such an amazing and informative post and the comments and yourresponses are just as great.
I am very new to the DIY hair products and I'm a bit confused with the preservation aspect. I'm interested in doing a flaxseed gel with both argon & olive oil. What preservative/s do you suggest for an expectancy of 2 to 3 months with no refrigeration(i was considering Othiphen plus with probably EDTA &vitamin E).
Also,are the preservatives mentioned in your article available in the Caribbean?Trinidad to be exact(sorry i know this a farfetched question,but it doesnt hurt to ask right?😊)

Reply

Replies

WS November 14, 2017 at 7:36 PM

This is so late, it's probably no use any longer. I thought I had commented on this already. For 2-3 months, Optiphen Plus with EDTA would be the way to go. If you added oils, vitamin E might help them stay un-oxidized. I don't know whether these ingredients would be available locally, my guess is not - unless there is somebody who makes soaps or lotions locally who might sell some. I think I looked into that and that's how I got sidetracked. I have to order them from hundreds of miles away too.

You'd need to sterilize absolutely everything that touches the product with rubbing (isopropyl alcohol 70% or greater) or bleach solution to kill bacteria. Then rinse with distilled or boiled-then-cooled water and air dry all your tools. Keeping the tools and ingredient as sterile as possible assures as little bacteria and mold gets into the product as possible - that helps your preservative have the longest shelf life. Other things to do are store the product out of the light and use bottles with flip-tops so you are not putting your hands into the product to use it. Best wishes - W

Reply

Unknown November 30, 2017 at 11:57 AM

Hi! WS I'm trying to make a gel that'll at least 1 month room temperature. I have some questions if you don't mind:
*What's the best way you would recommend to blend flaxseed gel and the preservative in order to prevent any pockets of un-preserved gel? (Blender, hand mixer, hand blender etc)
*Does using a blender and tools like that change the consistency of the gel permanently?
*Will liquid germall plus make polysaccharide gels more stringy like optiphen plus? If so, can you recommend a broad spectrum preservative that won't make flaxseed gel stringy? (I don't have any sensitivities with any preservatives)
*As I sanitize everything how long do I need to leave the alcohol or rinse right away?
*I'm adding oils to my gel, can I use polysorbate-80 as my emulsifier? If not, can I use water soluble shea butter and no emulsifier?
* I'm adding: 2% Panthenol, 1-3% Honeyquat, 2-4% Hydrolyzed Wheat Protein + Hydrolyzed Quinoa Protein + Hydrolyzed Oat Protein. When do I add the hot phase ingredients? (After straining, while boiling etc)
* Can a cheesecloth be sanitized and safe enough to strain the gel and still last 1 month? Or is the strainer more safe?
*Is EDTA interchangeable with vitamin e for anti rancidity or is one better than the other?

P.S I know it's a lot of questions, I would appreciate any help you can give.
Thank you

Reply

Replies

WS December 7, 2017 at 11:12 PM

Hello Karla,
-A stick blender (immersion blender) probably does the best job of assuring the preservative is thoroughly distributed. -Blending up the gel does not change the texture permanently. It may break up the stretchiness a little, but the gel stays pretty thick and viscous.
-I have not used Germall Plus with flaxseed gel, so I cannot comment on that.
- It's best to let the alcohol dry and evaporate. Surfaces need to stay wet with alcohol for at least 15 seconds.
-You can give Polysorbate-80 a try, but you can also use a gum like xanthan gum or acacia gum to help the oil stay suspended. Either will add a bit of "hold."
-Usually additives are added when the hot phase has cooled below 110°F. There may be a case for adding them while hotter to kill bacteria - but it might also de-activate preservatives in your additives.
- Better to sterilize a metal strainer. To kill bacteria in cheesecloth, you'd need to boil it, or heat it under pressure for spore-formers.
-EDTA and Vitamin E are not interchangeable. Vitamin E is an anti-oxidant for the oil phase only.
Good luck! -W

Reply

Unknown February 23, 2018 at 12:38 PM

Hi! I make flaxseed gel using commercial gel. I make it at a concentration of 2 parts FSG to one part commercial gel. I found the recipe as a way to make flaxseed gel that does not need to be refrigerated. I use mine up within a month or so and have never experienced any changes in texture or smell.

The ingredients in my gel are Water, Carbomer Triethanolamine, Poluacrylate Acid, Glycerin, Fragrance, Phenylcarbinol, Methylchloisothiazolinone, Methylisothiazolinone, Pathenol, Aloe Vera Extract, Tetrasodiaum EDTA, Colorant FD&C Violet #2. I, also, add about 20 drops of the Neutral Protein Filler to this recipe for added protein (as my hair craves it).

Is this safe? I have been doing this for months and it seems to be fine, but I wanted a second opinion. Thank you so much for your help! I love your blog and use it all the time!

Reply

Replies

WS February 27, 2018 at 11:52 AM

Hello Nicole,
Your combination of commercial gel and flax gel is lending the preservatives from the commercial gel to the flax gel. They're diluted, but still working to some extent. In addition to that - Carbomer (the thickener in your commercial gel) tends to be inhospitable to microorganisms and that can also help discourage microbial growth.

Neutral protein Filler is also loaded with preservatives because proteins can go bad easily - so those are adding to the mix. It's a different class of preservatives in that product. But the protein makes it a little more vulnerable, too.

I can't say it's safe to dilute preservatives like this because that would be inaccurate without being able to back that up with a microbial test. But I will hazard a guess that you've created a dilute, but still somewhat-working "preservative system" with the multiple preservatives in your gel and the Neutral Protein Filler.

I encourage you to sterilize everything that touches your gel when you mix with bleach solution or alcohol and let it all air-dry. Use a flip-top bottle so you don't contaminate the product with your fingers. Store it outside the bathroom (it's usually warmer in bathrooms) if possible. And when in doubt - THROW IT OUT! Any change in smell, texture, separation (separation is a BIG giveaway that your preservative has failed, even subtle separation like a little watery patch), change in clarity is telling you not to use this product. Get rid of the bottle too and start with a new one. Best wishes - Wendy

Reply

Unknown February 24, 2018 at 10:48 PM

Howdy! Back in April you helped me select a preservative for my flax seed hair gel. Thank you so much. Today I am having issue with my product crystalizing over time and clogging the trigger sprayer that applies the product. I have two hypothesis as to why this is happening. 1. The preservative is reacting with something. 2. The aluminum bottles IIput the product in is reacting with something.

Ingredients: filtered water, organic flax seed, organic aloe vera juice, gluconolactone SB.

If it's 1 what pH do you think the product should be to not crystalized. If it's 2, I'll just change the package.

Thank you for being such helpful blogger!! --pril

Reply

Replies

WS March 24, 2018 at 6:36 PM

Hello April, sorry for the delay. I haven't be able to get the comments to load. Are you dissolving your Gluconolactone fully? Unless there is something in the Aloe Vera juice that is reacting with the preservative, that is my first guess - that it isn't staying dissolved or never was completely dissolved. Sodium benzoate is in soda - in aluminum cans, so I'm not sure that's the problem. If the Aloe gets some crystals in it alone - that might be the problem. Hm, I don't think I was much help... 1 month later! Best wishes - WS

Unknown March 24, 2018 at 7:04 PM

Thank you so much! I wanted to let you know I did figure it out and in case someone else has the same issue I wanted to post what happened! I was refrigerating my product to get it to less than 100F so I could add the GSB to it. Sometimes it would be hours later before I would get back to my product and add the preservative. Turns out GSB does not like to get cold. This explains why it was not happening consistently. Sometimes I was adding the preservative at just under 100 F. And other times I was adding it at whatever temperature my refrigerator is! I'm still getting pH drift with GSB but at least it's not crystallizing anymore!

Reply

Anonymous October 21, 2018 at 2:50 PM

Hello!

I recently started making my own flaxseed gel and I absolutely love it. The reason I started making it is because I stopped buying plastic. I want to be able to make my own leave in conditioner and hair gel to sell to customers at my zero waste website. I want it to be organic, cruelty-free, vegan and parabens, sulfate, silicon & chemical-free and and I want it to smell marvelous. I work from home and don't have a lab, I see that the flax-seed gel works great for all types of curly hair and was wondering how I can develop this gel into something that my customers can buy. Do you know were I can find some clarity on how I can make my own natural leave-in and gel to sell. Thank you so much for this science-y information, it was much needed and showed me I have a long way to go before I can start selling these products.

Reply

Replies

WS November 10, 2018 at 6:07 PM

Hello Unknown, The Soap Dish forum might be a good place to look for product DIY resources for products to sell. You might look into SwiftCraftyMonkey of Patreon. A gel you plan to sell to customers must include a broad-spectrum preservative for safety's sake.

Reply

talicada February 16, 2019 at 10:07 AM

Hi Science-y, thank you for all you do. I make FSG with distilled water & keep in the fridge. My concern is that my hair/head start to stink if I don't wash my hair everyday. This is not an issue with storebought gel. So, I am thinking that FSG without preservatives might be unsanitary unless a person washes it out each day. But, what do you think? And, do you think adding Optiphen or some other preservative would solve the problem? I like the idea of natural (ie rosemary oil) but saw elsewhere that perhaps rosemary oil was insufficient.

Reply

Replies

WS February 18, 2019 at 12:06 PM

Hello, Once a gel is dried in your hair, it's unlikely that it will be attacked by bacteria or molds and therefore go bad and smell. A preservative is critical to preventing bacteria or mold growth in liquid products because all that water in the product is necessary for those microbes. Remove the water and it's much more difficult for microbes to grow.
If you're not having a problem with commercial products smelling bad in your hair, then adding a preservative to flaxseed gel (and sterilizing all your equipment and containers) should solve this worry.
I keep my flax gel in the refrigerator or freezer - I never put my fingers in it to avoid contamination - and I've never had a problem with it smelling bad in my hair. Good luck!

Reply

talicada February 16, 2019 at 10:14 AM

Hi Sciencey, thanks for your hard work all the time. Apologies if this post is a duplicate. My concern is about homemade FSG without preservatives going "bad" on the hair itself. It seems like when i am using FSG, my hair gets smelly unless I wash it out that night. This is not a problem with storebought gel. I plan to try adding some rosemary oil unless you think that would be an insufficient preservative? Also just wondering if you had heard of this problem.

Reply

Replies

WS February 18, 2019 at 12:10 PM

Okay - so you've had this problem before - that wasn't clear. A preservative might solve the problem. But it depends on what the problem is. If your nose is particularly sensitive to the odor of flaxseed gel - adding a fragrance would help also.
If your gel isn't made with sterilized equipment (and your hair takes a long time to dry) - then it may be harboring something smelly.
It might be worth trying some time when you have nowhere to go to use no products at all in your hair and see how it smells with nothing in it, too. Just in case your hair is picking up odors from your tap water, or from your environment that are usually masked by fragrances in products. You have some sleuthing to do! Good luck - W

Reply

Andrzej July 3, 2019 at 5:54 AM

Hi. Not a hair product question, but still about preserving Xanthan Gum gel.

I think my preservative failed or it didn't mix well enough in my face serums with 0.75% Xanthan Gum :(

The first one:
10% Potassium Azeloyl Diglycinate
1% Glycerin
0.75% Xanthan Gum
0.5% Phenoxyethanol (and) Ethylhexylglycerin
It went a little smelly. So I suspected that a min percentage isn't enough. But I was shocked because PAD is antimicrobial and it was even stored in the fridge...

Then I made another one:
5% Sodium Ascorbyl Phosphate
1% Glycerin
0.85% Phenoxyethanol (and) Ethylhexylglycerin
0.75% Xanthan Gum
Lactic Acid to 6.5 pH.
It was ok in room temperature, but after like 3 weeks it went a little cloudy. The smell is ok.

What can I do to prevent it from spoiling? Am I doing a mistake by adding the preservative to the formed gel and better option would be to mix it first with water and then with a Xanthan Gum and Glycerin? Or mix the preservative with Glycerin and Xanthan Gum and then add water? I mean, when I add the preservative at the end, it's hard to mix it, because the gel is thick already.

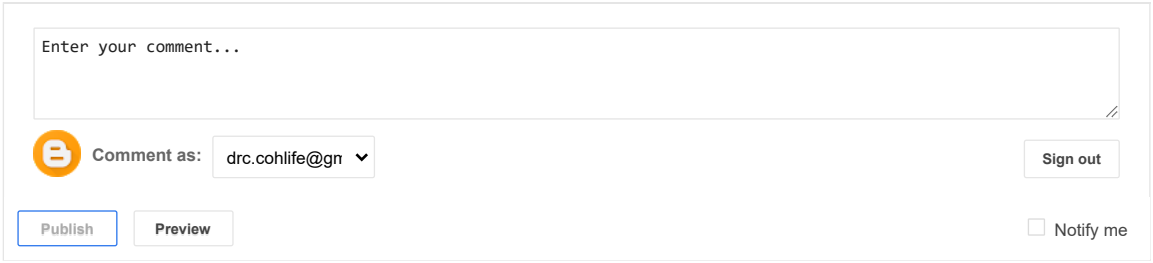
Or should I add more of it - 1%? I try to avoid adding the maximum percentage because I use it in other products (f.e. in cream) and my skin doesn't tolerate well preservatives.

Also, I have Dehydroacetic Acid, Benzyl Alcohol mix, but when I used it at the concentration of 0.75% in my cream, small whiteheads

appeared. It could be a coincidence, but I'm afraid of test it again :P

Anyway, maybe mix both of them at smaller concentrations would be better and milder to the skin? Could you advise me? Thanks!

Reply



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