Maurtain't Gels

7th July 2025, Henry Hart

Contents

Sources

Recipe based on this post (**MJ1**):

“So you wanna make a gel? (An update)” on r/AdvancedRunning by nameisjoey on 30 October 2024

https://www.reddit.com/r/AdvancedRunning/comments/1gfug7o/so_you_wanna_make_a_gel_an_update/

Maurten patents are available here:

USPTO Patent Public Search

https://ppubs.uspto.gov/pubwebapp/static/pages/ppubsbasic.html

Search for 'martin' AND 'ahnoff'

Maurten (**MAB1**) carb by mass (61.5385%) inferable here:

Maurten 160 Product Page

https://www.maurten.com/products/gb/gel-160?gad_source=1&gad_campaignid=22152388034&gbraid=0AAAADMsi5aaEGIceOZRCdSTtJ6ggPD2V&gclid=CjwKCAjwq7PDBhBxEiwAf1CVu3DU81P1jJpB8up_Gks0LloyCzhJTSgnVxYlYBbRAZYlYf99kzIoORoCnkcQAvD_BwE

Maurten used to use 60% glucans as a percentage of carbs in their gels, but appear to moved to 55.56% (1:0.8):

Maurten 160 Product Page

https://www.maurten.com/products/gb/gel-160?gad_source=1&gad_campaignid=22152388034&gbraid=0AAAADMsi5aaEGIceOZRCdSTtJ6ggPD2V&gclid=CjwKCAjwg7PDBhBxEiwAf1CVu3DU81P1jJpB8up_Gks0LloyCzhJTSgnVxYlYBbRAZYlYf99kzIoORoCnkcQAvD_BwE

Recipe HH20250707

Discussion

The often quoted carb ratios (glucans:fructans); {1:1, 2:1, 1:0.8} are all pretty similar so I don't think it matters that much.

My recipe (**HH20250707**) below uses 3:2 glucan:fructan but you can easily adjust this.

HH20250707 (61.5385% carb by weight) is more concentrated than **MJ1** (59.6051% carb by weight) and the same concentration as **MAB1**.

Materials

a. Table sugar
b. Normal kitchen scales
c. Medium sized saucepan
d. Mixing bowl
e. Clothes iron
f. Kitchen towel
g. 500ml pasta sauce jar
h. 100ml passta sauce jar
i. Fork, spoon, (electric mixer)
j. Sodium Alginate: https://www.ebay.co.uk/itm/275937518548?var=578025231936
k. Jewellery Scales: https://www.ebay.co.uk/itm/113689625276?_skw=jewellery+scales&epid=4035191665&itmmeta=01JZMQH69Z9GV9TGGKRPEPAZYH&hash=item1a786e02bc:g:33IAAOSwUhFim5P0&itmprp=enc%3AAQAKAAAA0FkggFvd1GGDu0w3yXCmi1fYcE1O%2F7Q9VzuAy%2BFs4j0%2FFFeYapkTU1Qld2R07l4nj1BuDcjdsiOlE4gxf01RRS8nuIep74ryzWAiQlQ15aLbs%2B2fwVH12RGTdl3p%2BHxtmLpfRqu6%2F1rbgAk%2F4zM5csYtASb1fVJsZ0UGrKYSeGJ81139j7n%2FOUu6p7YOi34su7VYQddrc3OGmL2vIlhKwTa9OSRhf9Uv7vRrSgcPdpWg0TiyjcX65gCuVWFzp%2FDH%2BVnANnW3ZUHPQPm%2F0KRVxlg%3D%7Ctkp%3ABlBMUJLlxJf9ZQ
l. Glucose Powder: https://www.ebay.co.uk/itm/271595323957?_skw=glucose+powder&itmmeta=01JZMQKFCAN0RPC19SNHXFCEVY&hash=item3f3c57c235:g:SZMAAOSwwa1mPgxp&itmprp=enc%3AAQAKAAAA8FkggFvd1GGDu0w3yXCmi1cOyYRq%2BzOIDjXiKOHeZJlwzpvTyCJJbqmn3aeVkT6fC1cXET1DysooJdgIzuMni1ub%2FudS%2FTbP%2FtIhUBLx4DB1UDKWaXAafcP8fqRL8OhbW4w46uqvP9sdcd9vf27kq8K9goQ9K0r%2BpYamSUadiozmVNu9mTKRbQIFm46mY9LbHb2FqTyzTqglL43J2NsEk1%2FlDG0DsBhURd185ljlebG%2F07deISupAHAmyyu9pQyedPYV5xCPBhkcKd4EeypGkPh455KU194YCRuE%2BLlCbhxQ4HFJt9TwqpQ1e12CCXYU9w%3D%3D%7Ctkp%3ABFBMsPbNl_1l
m. Dispensing Syringe: https://www.amazon.com/Catheter-Syringe-Cover-Pieces-Brandzig/dp/B07NF6ZGMX/ref=sr_1_3?crid=2FSOZ01008991&dib=eyJ2IjoiMSJ9.ilBcpU_LHiA8ZkdQbb4NEl9ocazbSGW3aPq6lllMIQLJTs5AlFvoxeHF4jynts-tYj8pkBwBb8FwlevxHFeA5pq4enYTTUubuIgoqTH_iRAp2Djdi5c84Vaqq39-U-ewNSMl1sLtTRRxVQ51fL3Rad993B_2Fqo2KA1oGsgq8AkPgqBTyjTikjv5fM2axOZMo_7nD-MXpG3ybKAQLWRreCKyMeYQzcp0fIFzqRVypdM.02PNhAS6lYTz9Bad-

SLxCC_JcrLQn5NscSqbv2jernw&dib_tag=se&keywords=dispensing+syringe+60ml&qid=1751968964&sprefix=dispensing+syringe+60ml%2Caps%2C135&sr=8-3

n. Calcium gluconate: https://my.healthpath.com/products/calcium-gluconate-350g/8100?utm_term=&utm_campaign=Healthpath+-+Shopping+-+CSS+-+Supplements&utm_source=adwords&utm_medium=ppc&hsa_acc=5004928523&hsa_cam=21567420222&hsa_grp=165500810843&hsa_ad=708769409186&hsa_src=g&hsa_tgt=pla-297612067635&hsa_kw=&hsa_mt=&hsa_net=adwords&hsa_ver=3&gad_source=1&gad_campaignid=21567420222&gbraid=0AAAAAC4x96lt6Ecy2FIZqhiX0a0Pa6bPd&gclid=CjwKCAjwg7PDBhBxEiwAf1CVuxrtTtl42fOMu2JxBCf92Np9-2Iq9B6MXf5cmuNj17ykKi5CIYTO0xoCyaQQAvD_BwE

o. Gel package: https://www.amazon.com/gp/product/B089GQB7KS/ref=ppx_yo_dt_b_search_asin_title?ie=UTF8&th=1

p. Powdered caffeine: https://www.hollandandbarrett.com/shop/product/applied-nutrition-pure-caffeine-100mg-x-90-capsules-6100002231?skuid=065984&utm_campaign=shopping&utm_medium=cpc&utm_source=google&gad_source=1&gad_campaignid=22182943669&gbraid=0AAAAAD96OoJj4Sw_nFac49J9atv_LCjfU&gclid=CjwKCAjwg7PDBhBxEiwAf1CVu4DRHgXlPj0-ThzOhxX_quKFQH-oda1MlFP1IaBUn-wRhunX4IpkkhoCkQsQAvD_BwE&gclsrc=aw.ds

Steps

The below will make 1000gCHO (minus lost yield) worth of gels. I would recommend doing it in this sort of size as the marginal cost of the ingredients is really insignificant compared to the time cost. Freeze gels if keeping for longer than a couple of days.

1. Mix 12.5g of sodium alginate with 315.703g of water. Use jewellery scales for the sodium alginate. I did this in a 500ml pasta sauce jar. These amounts are 150% of the amount you will need because the stickiness of the solution will cause you to lose yield. Because of the excess yield, you can afford to stir or mix with the tool of your choice because any substance left on the stirrer can be wasted. Shake the jar. Maybe shake it a lot. Wait at least 24 hours for it to dissolve. It should look almost like water when laid flat by the time it's fully dissolved. You might consider putting it in the fridge overnight (since the alginate is an organic compound with potential to foul – not sure about this).

2. Mix 2.71g of calcium gluconate with 70.16g of water. Use jewellery scales for the calcium gluconate. I did this in a c. 100ml jar. Not sure if the calcium gluconate is supposed to dissolve, but mine kept coming out of solution, so maybe just make sure you re-shake it before adding it to the end product.
3. As mentioned in step 1, you will need at least 24 hours to dissolve the sodium alginate. This is the most important part of the process because undissolved sodium alginate will really cock up the consistency of the product.
4. Add 900g of table sugar and 110g of glucose monohydrate to a bowl. A medium sized pan also works. If using anhydrous glucose, use 100g and add 10g more water than mentioned herein. Boil a few cups of water in a clean pan on the hob. You don't want to use kettle water, especially in the Thames Valley because of the excessive amount of chalky crap in the tap water. Now, put your bowl of sugar on the kitchen scales and zero the reading. Add 323.33g of boiling water (that's 333.33g if you've used anyhydrous glucose). Stir the mixture and note that it's dissolving pretty quickly. Note also that the mass will reduce by 5-10g as some of the water evaporates. Ideally you want to replace this as you continue stirring. Stir for a good 5-10 minutes, and if your mixture is in a metal pan, you can also apply some gentle heating on the hob to help the dissolution, noting that any water you boil off should be replaced as exactly as practicably possible. You won't be able to dissolve the sugar completely, but don't worry too much about that.
5. Put your main mixing bowl/pan of sugar solution back on the kitchen scales and zero the reading. Add 218.80g of your sodium alginate solution to the main mixing bowl/pan. It will gloop out, and you can aid this with a fork/spoon. This amount should be about 70% of your sodium alginate solution because you'll recall that we made an excess.

6. Mix thoroughly. This step is also really important. You might consider using an electric hand mixer. Don't worry if you loose a couple % of yield. Maybe spend 10-20 minutes on this step. You should end up with a mixture that resembles a non-Maurten gel.
7. Add the complete calcium gluconate to the mixture while mixing thoroughly. This is where the magic happens and the calcium replaces the sodium in the alginate and forms a hydrogel which encapsulates the monosaccharides. You'll see the solution turn from a runny syrup into a sort of semi-solid gel. Keep mixing for 10-20 minutes.
8. Add powdered caffeine if you want at this stage.
9. Now you're ready to dispense the gels into the pouches. This bit requires a lot of practice and it's hard to give too much advice. You want to pinch the edges of the pouch when filling in order to maximise the available volume. I used '7.5 x 13 cm' pouches, into which I could fit 75-85g of net weight, which is around 60ml of volume. Use your dispensing syringe to fill the pouches, and use your iron to heat seal the opening. It's a bit tricky to seal; try and fold the open edges a bit before laying on a towel to iron shut. Again, it's sort of tricky and you really need to just experiment for yourself. On the plus side, the ironed seal is super reliable in my experience; moreso than even commercial gels.
10. Once you've bashed out a good haul of gels, weigh them one by one and write the net weight on the package. Remember to zero the scales with an empty package. You can then also write the carb weight on the package by multiplying by the carb by weight (61.5385% in this case).

11. Keep them in the freezer. They don't freeze completely, or expand to the point of bursting, so you might as well.

Costs

The total material cost per 50gCHO gel is £0.25.

£0.12 of that is the cost of the package.

A 40gCHO gel is £0.22.

A 40gCHO Maurten gel is £4.15.

That's nineteen times the price.