MEA Agar Premix, Light Malt Extract and Agar Blended, Just Add Water

From sporesyringes.co.uk/lab-supplies/mea-agar-premix, where the drawings move and the page is kept current.

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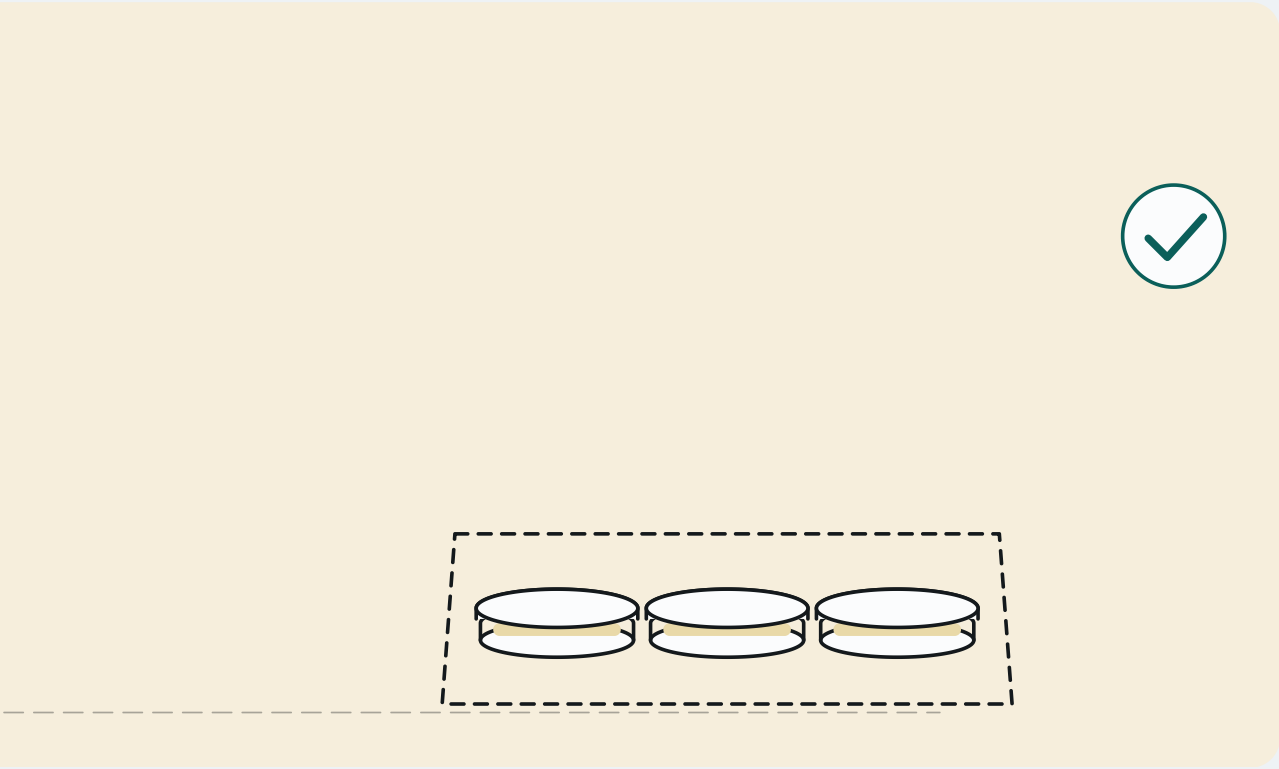
HOW THE PLATES ARE MADE



1 Premix and water in the jar at the calculator's figures; swirl; foil over the lid

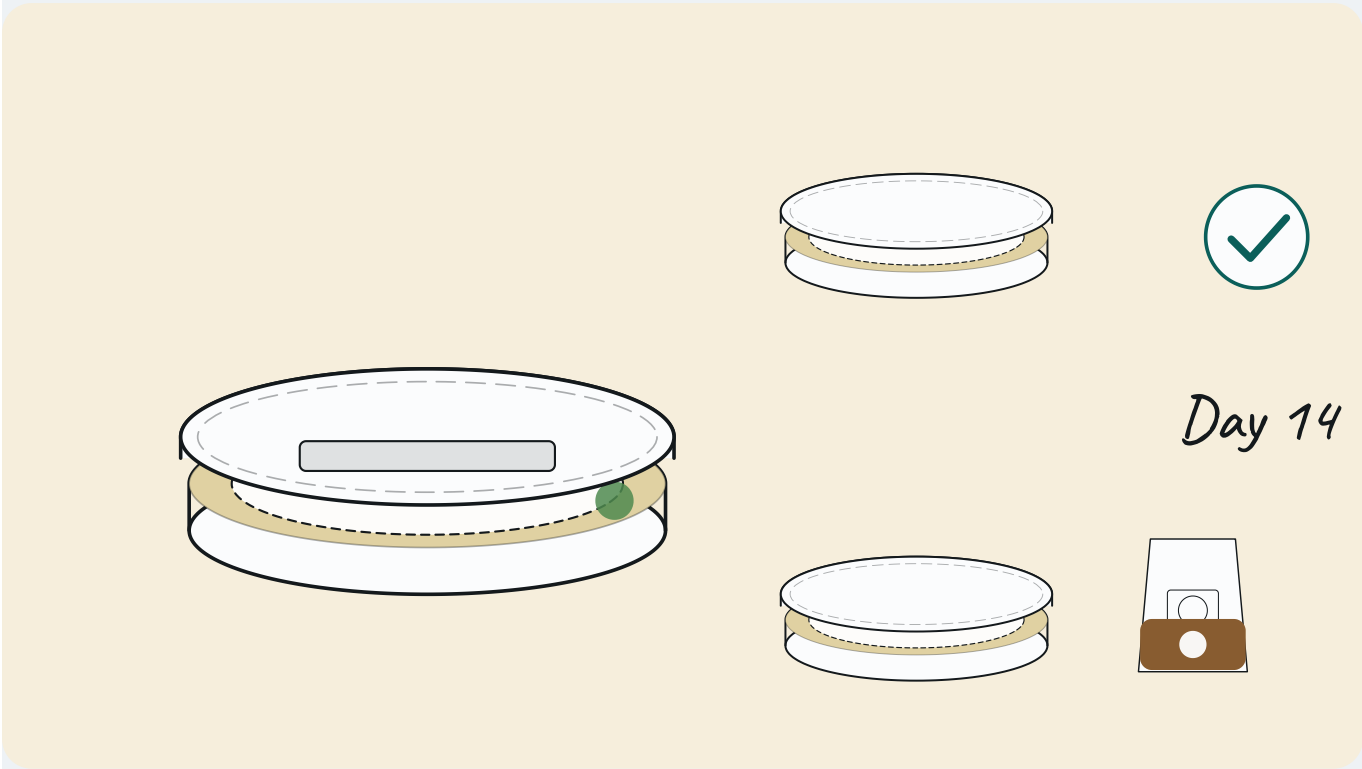
2 In the pressure cooker: 30 minutes at 15 psi, 45 for more than 500 ml

3 Cool until you can hold the jar, still warm enough to pour

4 In still air: lid a crack, a thin layer, lid back; the next dish

5 Set with the lids on, then bag them upside down; use within a month

HOW A PLATE IS INOCULATED AND GROWN



1 In still air, lid open a crack, never off

2 One drop from the spore syringe onto the centre; the needle never wiped or heated

3 Lid on, tape the edge

4 Turned upside down so nothing drips; dark, 22 to 23 °C

5 Days 7 to 14: white mycelium expands from the drop across the plate

6 Any colour is contamination: take only clean white growth, well away from it

7 A scalpel cuts a section of the clean mycelium onto a fresh plate, where it expands again

8 Once more onto a third plate

9 The last section goes into a grain bag

About MEA Agar Premix, Light Malt Extract and Agar Blended, Just Add Water

Light malt extract and agar powder blended in our MEA proportions, 20 g of each per litre, sold as a 20 g bag that makes 500 ml or a 240 g bag that makes 6 litres. The 20 g bag is one batch with nothing to weigh; from the 240 g bag you weigh out 40 g per litre on 0.01 g scales. It is the same medium as our ready-poured MEA plates and the Agar Making Kit, and the agar recipe calculator gives the weight for any number of plates, the sterilising time for your volume and the pouring guide.

What is in the bag

Light (pale) dried malt extract and food-grade agar powder, blended in equal parts by weight: 40 g makes 1 litre of malt extract agar at 20 g malt extract and 20 g agar per litre, the MEA recipe we pour our plates from. No dyes, added nutrients or antibiotics. Six drops of blue food colouring per litre gives a blue contrast that makes contamination stand out, if you want it, and 2 g of yeast extract per litre turns it into malt yeast agar (MYA).

How to use it

Whisk the premix into cold water, 40 g per litre (one whole 20 g bag for 500 ml), until nothing is floating; the malt dissolves but agar only dissolves near boiling point, so a cloudy, gritty mix is normal and the cooker finishes the job. Bottle it no more than two-thirds full with the cap loose and sterilise at 15 psi, 30 minutes for a bottle holding up to 500 ml or 45 minutes for a bottle holding more, counted from when pressure is

reached, then let the cooker cool on its own. The hold goes by what is in each bottle, not the batch: 2 litres from the big bag split across four 500 ml bottles is 30 minutes. Once the bottle is cool enough to hold, swirl it gently to even out the medium without making bubbles, then pour at about 50 to 55 °C, 25 ml per 90 mm dish, in a still air box with the lids on straight away, and leave the plates to set and cool fully before bagging them. A cooker that only reaches 0.8 bar needs roughly two and a half times the hold.

Weighing from the 240 g bag

The 240 g bag makes 6 litres, about 240 plates, and is the better buy for regular pouring. Shake the bag to remix the powders, weigh out what you need on 0.01 g scales, 40 g per litre or 20 g per 500 ml, and reseal it. The calculator shows the premix weight for any number of plates.

Storage

Malt extract draws moisture from the air and cakes, so keep the bag sealed, dry and cool. A caked 20 g bag used whole still makes its 500 ml: the lumps dissolve in the cooker and the extra weight is only the water it has taken on. Weighed portions from the 240 g bag are what caking throws off, since part of every gram is then water, so reseal it tightly after each use and use it within a few months of opening.

What it is for

Pouring plates for gourmet and functional mushroom cultures, tissue clones, contamination checks and teaching. Psilocybe cubensis spores sold on this site are supplied for microscopy and taxonomy only; germinating them is illegal in the UK and they are not for use with any culture or growing product.

Composition	Light dried malt extract 50%, agar powder 50%, by weight
Dose	40 g per litre of water (20 g malt extract, 20 g agar)
Sizes	20 g bag makes 500 ml (about 20 plates); 240 g bag makes 6 litres (about 240 plates)
Sterilise	15 psi, 30 minutes per bottle of up to 500 ml, 45 minutes for a larger bottle
Storage	Sealed, dry and cool; use an opened 240 g bag within a few months
Intended use	Gourmet and functional mushroom cultures and teaching

Agar mixing, sterilising and pouring guide

The calculator, with the mixing, sterilising and pouring steps for any number of plates, is on the site at https://sporesyringes.co.uk/agar-calculator.

Injection rules

Almost every contaminated bag we have ever replaced went wrong in the thirty seconds between opening the syringe and finishing the injection. The syringe, the needle and the bag all arrive sterile; the job is to keep them that way for those thirty seconds. These are the rules our sterile guarantee asks you to follow, and they apply to gourmet liquid cultures and spawn bags alike.

Rule 1: never heat, flame or wipe the needle

Every needle arrives gamma-irradiated sterile in its own wrapper, and the syringe casing and end cap keep the contents sterile. Flaming a needle leaves soot and a hot tip that kills what it touches; wiping it with alcohol drags whatever was on the wipe onto the one part that goes inside the bag. Use the needle straight from the wrapper. There is a sticker on every bag saying the same thing.

Rule 2: seat the needle properly

A loose needle is the other big cause of contamination. Push the needle hub onto the Luer lock and give it a quarter turn until it stops. It should not wobble. If it does, take it off and seat it again before you go anywhere near the bag.

Rule 3: work still, not clean

You do not need to sterilise the room. You need still air. Close the windows and doors, turn off fans and heating, and wait a minute for the air to settle. Wash and dry your hands, then keep them away from the needle. A still air box helps but is not required for a bag with a self-healing port.

Rule 4: go through the port, once

Every bag has a self-healing injection port. Push the needle through the centre of the port at a slight angle, inject, and withdraw in one movement. Do not inject through the plastic beside the port, do not make a second hole, and do not open the bag to "check" the grain.

Rule 5: how much, and where

Use the amount the product page for your bag gives, and inject all of it in one place. Do not move the needle tip about inside the bag and do not wind the needle round in the port: that can damage the port. The liquid is spread afterwards, not with the needle. An Inject-and-Forget bag is mixed straight after injection. A grain-based bag is tilted so the solution runs across the whole base of the bag.

Rule 6: wipe the port, and nothing else

Every bag comes with a small alcohol swab. Just before you inject, wipe the injection port with it, once, and give it a few seconds to dry. That is the only thing on the outside of the bag that gets wiped: not the needle, not the rest of the bag, and nothing afterwards. The port reseals itself; do not tape over it and do not wash the bag.

Rule 7: one syringe, one job

A syringe is a single-use item. Draw from a fresh syringe for each strain or culture, cap it if you have to pause, and do not put a used needle back into a sterile bottle.Spare needles can be added at the basket.

What happens next

The bag goes somewhere warm and dark and stays sealed until it is fully colonised. That part is covered by the incubation rules. Follow both sets of rules, buy the syringe and the bag together from us, and if the bag still contaminates before it is opened for the first time, the sterile guarantee replaces it.

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Incubation rules

Once the bag is injected, the work is done and the waiting starts. Our spawn bags and all-in-one grow bags are made to stay sealed from injection to first harvest, so the incubation rules are mostly about resisting the urge to help. These are the rules our sterile guarantee asks you to follow after the injection rules.

Rule 1: keep it sealed

Do not open the bag, cut the bag, or add anything through the port after the injection. The filter patch lets the bag breathe; nothing else needs to. A bag opened "to have a look" is no longer a sealed bag, and it is no longer covered by the guarantee.

Rule 2: warm, dark, still

Put the bag out of direct light, where it will not be moved or knocked, at the temperature for its type: 22 to 23 °C for a grain-based bag (the 50/50 all-in-one bag, the LightBag, the SprinkleBags and every rye grain spawn bag), and 26 to 27 °C for the brown rice flour Inject-and-Forget bags. Grain-based systems are kept cooler so the grain layer at the base does not dry out. An airing cupboard, the top of a wardrobe or a heated incubator

all work; the LightBag is made to colonise in dim light, the others prefer dark. Do not put a bag on a radiator, on a heat mat with no thermostat, or in a window: mycelium that goes past 28 °C stalls, and hot bags sweat, which is what contaminants like.

Rule 3: mix on the schedule, not before

An Inject-and-Forget bag is mixed well, through the plastic, on the day it is injected. That same-day mix is the reason Inject-and-Forget bags work so fast. A grain-based bag is the opposite: leave the grain where it landed, and only break it up and shake it after day 10, once the spores have germinated. After any mix, leave at least five days before the next one so the mycelium comes back healthy. Shaking a grain bag before day 10, or mixing more often than every five days, breaks the early growth and spreads whatever else is in there. When you do mix, mix well: knead the bag through the plastic, not a little shake.

Rule 4: wait for full colonisation

White mycelium spreads from the germination points and joins up. In a grain-based bag you see it first on the bottom of the bag, where the solution ran. An Inject-and-Forget bag that was mixed straight after injection shows hundreds of germination points all through the substrate. A bag is ready when the grain is white all the way through with no yellow, brown or grey patches. That takes two to four weeks for most gourmet species at the right temperature, longer if the room is cool. Slow is not the same as failed.

Rule 5: know what contamination looks like

Green, blue-green, black or pink patches, a wet grey slime, or a sour smell through the filter patch are contamination. White fluffy growth, small drops of yellow-brown liquid on the mycelium and a mushroom smell are not. If you are unsure, photograph the bag against a plain background in daylight and send it to us before you do anything else; the contamination guide has pictures.

Rule 6: when the bag is fully white, move on

A grain bag is fully colonised when every grain is covered in mycelium. For a spawn bag, that is the moment to mix it into bulk substrate for a monotub or bag-tek, with the substrate calculator giving the quantities; a grain bag is not fruited without a bulk substrate or a casing layer. A fruit-from-the-bag system is usually ready to fruit by day 20 on our mixing schedule: mix first on day 10, again on day 15 and again on day 20, then place it into fruiting conditions, still sealed until the product page says to open it. Opening the bag for the first time is where the guarantee ends and the growing begins.

If something goes wrong

Contamination before the first opening, on a bag and syringe bought together from us and handled by these rules, is covered by the sterile guarantee. Send the claim form with photographs of the whole bag, the injection port and the filter patch, and your order reference, and we will replace it.

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