

Directions for Creating a MERV13 Filter Face Mask Version Two

Gather Materials:

- Multi-purpose thread
- 8" x 8" 100% cotton fabric for the back of mask
- 8" x 11" 100% cotton fabric for the front of mask
- 4 hair bands
- Pipe-cleaner or 20 gauge wire.
- MERV 13 filter fabric

Tools:

- Sewing machine
- Iron & Ironing board
- Cloths pins
- Scissors
- Pins

Optional Tools:

- Rotary cutter
- Acrylic Quilters Ruler
- Cutting matt
- Seam Ripper



1. Pre-wash your chosen fabric, then dry and iron to soften and preshrink it.
Next cut out a piece of 8" x 8" fabric for back of mask and 8" x 11" fabric for front of mask.

Solutions for a Healthier Home



Directions for Creating a MERV13 Filter Face Mask Version Two



2. Fold in each piece of fabric by $\frac{1}{4}$ " on an 8" side that you choose to be the top of the mask. then fold it over again by $\frac{1}{2}$ " then sew down, align presser-foot with the edge of the fabric.

3. Put the 2 pieces of fabric together, the backside of mask on-top. Right sides facing each other. Line bottom of both pieces of fabric up then fold in fabric by $\frac{1}{4}$ ", then again by $\frac{1}{2}$ ". Press and sew lining the edge up with the presser foot.



Solutions for a Healthier Home



Directions for Creating a MERV13 Filter Face Mask Version Two



4. Open fabric up, then Iron open the seam.

5. Fold fabric, right sides together again, line up the top edges. Measure 1½" inwards from the side, mark with a pin.

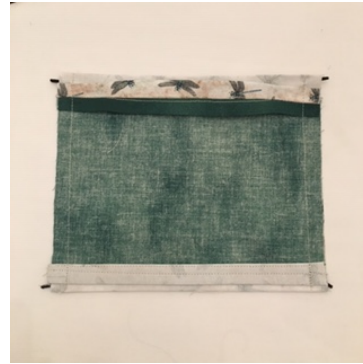
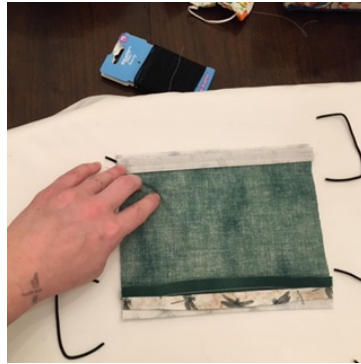


6. Sew along the edge of the seam until you get to the pin. Back stitch, makes sure these stitches are secure there will be a lot of pull here. Repeat sewing in from the other edge. Open seam, press.

Solutions for a Healthier Home



Directions for Creating a MERV13 Filter Face Mask Version Two



7. Cut hair- bands at fused section. And place them inside of the fabric. Going from the corners inward to the center. Sew a line of stitches down each side making sure to go over and to reinforce the hair bands bands.



8. Push right side through the hole created when you sewed only to the pin. Press.

Solutions for a Healthier Home



Directions for Creating a MERV13 Filter Face Mask Version Two



9. At $1\frac{3}{4}$ " fold mask downward. Measure $\frac{3}{4}$ " from the fold and fold back up.



10. Repeat two more times. It should be 3.5" high by the time you are done. Sew it together as close to the edge as possible, make sure to reinforce the folds, there will be a lot of pull on them

Solutions for a Healthier Home



Directions for Creating a MERV13 Filter Face Mask Version Two



11. Fold pipe-cleaner to fit mask. Open pocket and push pipe-cleaner up to the top corner. Sew a line of stitches as close to the pipe-cleaner as possible to keep it in-place.



12. Press flat then fit mask to your face. Tie hair-bans. Insert MERV 13 Filter material.

Solutions for a Healthier Home



Directions for Creating a MERV13 Filter Face Mask Version Two



Your mask is complete!

13. Final step, Try it on and wear it as instructed by the CDC.



Solutions for a Healthier Home



Directions for Creating a MERV13 Filter Face Mask

Version Two

Care of Mask

Sterilize the mask between each use.

- Preheat an oven to 170 Degrees F.
- Without removing the filter material, place the mask with the filter material inside it on a baking sheet within the hot oven for ½ hour. Viruses and germs do not survive in temperatures over 150 degrees,
- If you need to wash the mask, remove the filter material and pipe cleaner Machine wash on gentle or hand wash. The mask can be air dried or dried in a cloths dryer.
- DO NOT USE MICROWAVE since this will not kill viruses.

Directions for Creating a MERV13 Filter Face Mask Version Two

FAQ: USING AND HVAC FILTER IN A POCKET MASK

Note: These answers to the following questions are not meant to be the final authority on the subject. Obviously, professional grade medical masks would be the best defense today but, unfortunately, they are not available to many people. If you can obtain a professional grade mask once the supply for first responders and medical professionals is no longer an issue, we suggest you do it. However, until they become readily available, the use of a MERV 13 filter is better than other makeshift masks or simple dust masks with less of a filtering ability. To that end, the following answers are given to the best of our knowledge in hopes of helping our community better protect itself.

Q: Do these filter inserts contain fiberglass?

A: No - the filter material that we are using does not contain fiberglass. This was verified by a representative of the manufacturer.

Q: How can I get a mask made if I do not sew?

A: There is a link on our page that gives contact information for local seamstresses who you can call to make arrangements to have masks made. If you know of any seamstresses who would like to be included on our list, have them fill out the form and check the box that says they want to be included and we will happily include them.

Q: On the filter material I received there is a small, hard spot that looks like dried glue...?

A: It is glue. We are dismantling high-efficiency filters from our stock to obtain the filtering material for the community. To do this, we have to remove the glued ribbons and metal screening that keep the filter's shape when used in a home's air stream. We have tried to remove all these small drops of glue, however a piece may have been missed. You can carefully remove the piece or just cut the mask so that the glue spot will not be directly in front of your mouth.

Solutions for a Healthier Home



Directions for Creating a MERV13 Filter Face Mask

Version Two

Q: Should you clean and sterilize the mask after each use?

A: **Yes.** After using the mask in public, the mask should be cleaned or sterilized. Caution should be taken in handling the mask after use, and you should avoid touching the front of it which may be contaminated.

Since there is no plastic used in the mask, heat can be used as a sterilization method. To sterilize the mask between each use, preheat an oven to 170°F. Place the mask with the filter material still inside it on a baking sheet within the hot oven for 30 minutes or more. Viruses and germs will typically not survive temperatures on surfaces at about 150°F. Setting your oven to 170°F ensures the mask gets hot enough in the event of oven variability. [Source](#)

If you need to wash the mask, remove the filter material and hand wash. Machine washing tends to crumple the nose wire which will cause it to eventually break. The mask can be air dried or dried in a clothes dryer if there are no other clothes in the dryer that would damage the wire.

Do not use a microwave since this will not kill viruses and the mask has metal in it.

Do not use a dryer to sterilize since dryers typically only heat up to 135°F.

Q: Is there a potential that the filter material will break down and I could potentially inhale the fibers?

A: Since the material we are supplying is being taken from a high-efficiency filter media designed for furnaces and air conditioners, they are typically installed in air streams where the air has a velocity of at least 1,000 feet per minute (fpm). The velocity of most people's breathing is only about 200-400 fpm, so the filter breaking down should not be an issue. The fact that the cotton cloth is between you and the filter should also protect you should any pieces come loose from when the material was cut or placed into the mask.



Solutions for a Healthier Home

Directions for Creating a MERV13 Filter Face Mask

Version Two

Q: I've read that MERV-13 filter material can trap molecules between 0.3 – 1.0 microns, however, some article state that the virus can be smaller than that

A: Although the virus itself is said to be about 1.25 microns, so far, its verified means of travel is as a droplet nuclei. A viral nuclei is composed of the virus which is surrounded by fatty proteins and mucus. This covering is what protects it outside of a host—sort like a space suit it needs to survive once it leaves a body. This is also why heat and UV affect it, because heat dries up the mucus and fatty proteins around it causing the virus to expire. Further increasing the size of this particle, is that when expelled from the body, the viral nuclei is contained within the vapor droplets from a sneeze or cough. The viral nuclei contained within the water vapor is what the MERV 13 filter material is rated as being able to filter. You can use a higher rated MERV filter in a pocket mask if you can obtain it, however it will be harder to breathe through.



Solutions for a Healthier Home