

# Polymer Granule Vest

## Needed:

- approx 1 yard beige mesh fabric (check pattern for exact amount) or other color that coordinates with the camo print
- approx 1/2 to 1 yard 100% cotton camouflage print (amount required depends on number of pockets created and size of vest. prewash to allow for shrinkage and remove sizing)
- approx 5 yards double-folded bias binding, 1/4" wide when folded ; OR 1" wide pre-folded bias binding - fold in half and iron before using; OR create your own from the cotton fabric
- Polymer crystals (this pattern was tested with Watersorb® medium crystals)



photograph © 2004 Ruth Marshall

## Designer's notes:

- ★ Mesh fabric allows the vest to be as lightweight as possible. My intent was looking to mimic the desert camouflage color and therefore I used beige mesh.
- ★ Begin with a basic men's vest pattern (not a tailored style). Pin the side seams together along the seam lines before cutting. (this eliminates the side seam)  
The pattern now resembles two squares allowing for the neck and large, long armholes.  
It probably wouldn't be too hard to draw this without a pattern, however here are some suggested commercial patterns:  
Green Pepper Patterns Hunters Vest (without pockets)  
KwikSew 2357  
KwikSew 2314  
KwikSew 2198 (without pockets)  
Butterick 3241 (cutting the front straight at the bottom)  
McCalls 8285  
Neue Mode 22498  
Vogue 9978

## Directions:

- ★ Place the pattern back seam along the fold when cutting out, eliminating the back seam. With this layout, the only seams are along the shoulder. Cut out only one -- no lining needed.
- ★ Sew the mesh shoulder seams together

## making tubes:

Next, tubes for the crystals will be created and placed on the inside surface of the vest. The tubes will only be secured to the vest along the seam lines that divide the pockets. The rest of the tube will hang freely between the cross seams.

The neck, armhole, and hem bindings will be put in place last so that the raw edges of the tubes are encased within them.

- ★ With camouflage cotton fabric make long tubes.  
*Using this method, you will not be required to turn tube:*  
Measure the vest from hem to center shoulder to hem. Your longest tube will need to be this length plus 1". If your fabric is not long enough selvedge to selvedge, you can either cut the tubes lengthwise, or piece the shoulder tube at the shoulder seam.  
Cut 5 1/2" wide strips from selvedge to selvedge (42" - 44"), then iron a 3/8 fold on each side for the seam.  
Next fold it lengthwise and iron a nice, crisp fold. Finish by top stitching both edges with a double row of stitching.  
*If you prefer the turned-tube method,* after cutting the strips, fold them in half lengthwise, right-sides together, and sew a 3/8" seam. Next turn the tubes and iron. Finish by sewing double rows of topstitching on both the seam and the folded edges, as with the other method.
- ★ Take one tube and fold it in half crosswise. Place the fold on the center of the shoulder seam and sew in place across the shoulder seams of the vest so that half the length is in front and half is in back of the shoulder.
- ★ Divide and mark each half of the tube evenly for 2 or 3 pockets, each no more than 6" - 9". For a medium size vest I divided the length into two pockets for the front and three pockets for the back.
- ★ Repeat the last two steps to place the other shoulder tube.

## testing for quantity of crystals - do not skip this step.

To determine how much of the polymer crystals will be required, you will need to make a test tube. Follow the steps above, only making the tube 1/2" longer than the depth of the pocket you have decided to use (6 1/2" to 9 1/2").

After topstitching the tube so it's similar to the vest tube, top stitch across one short side 1/4" from the edge. Drop in 1/4 to 1/2 teaspoon of your polymer crystals and sew across the opening 1/4" from the edge.

Soak the tube in cool water for 15 - 20 minutes (some types of granules will need to be soaked longer to reach full saturation). When fully saturated, the tube should be slightly puffed, but not completely round (remember that these vests may be worn under

other clothing and can't create too much bulk). If your tube doesn't puff enough, create a 2nd test tube using more crystals that before. If it becomes too round, you'll need to use less crystals. In my own test I found that each 6" - 9" only needed between 1/4 - 1/2 teaspoon of the Watersorb® medium granules, no more! Using too much not only creates a tube that is too thick, but it also causes the gel to seep through the fabric created a slimy exterior.

### filling & attaching tubes

After you have determined how long to make the pockets in the tubes and how much of the polymer crystal to use, you'll need to fill the pockets and sew to the vest.

- ★ To fill the top pocket (nearest the shoulder), drop in the crystals from the open end. Some suggestions for getting the crystals easily down the longer tube:

- a 2 ft length of 1" PVC Pipe
- a long-neck funnel (check your local auto supply store)
- roll a sheet of paper into long tube
- just drop them in using a measuring spoon.

After the crystals have been inserted and you've worked them down to the seam as necessary, pin the tube to the vest and sew across the tube crosswise to create your first pocket.

- ★ Repeat this step for each pocket of the tube. The last pocket should be secured about 1/4" from the mesh edge. Cut excess fabric about 1/4" longer than the mesh edge.
- ★ Repeat these 2 steps for the other half of the shoulder tube and for the tube on the other shoulder.
- ★ Determining how many more tubes to place on the rest of the vest really depends on the size of the vest. There should be 2" to 3" between each tube. For a size medium, I placed 2 more tubes evenly across the back and between the shoulder tubes. I placed 2 tubes evenly across the underarm between the front and back shoulder tubes. The underarm tubes are just one pocket each. If you are using a larger size pattern, you may decide to add one more tube between the front edge and the shoulder tube. These tubes should be added by placing the top of the short edge along the raw edge (neck or armhole with about 1/4" of fabric extending - it will be trimmed before sewing the bias edging) and then sewing the pockets to the vest as was done for the shoulder tube. As before, the last seam will be along the hem edge.

#### Please be sure to attach a care label:

- ★ immerse in cold water 30 - 60 min, until crystals become gel
- ★ regenerate by soaking 1-3 minutes
- ★ do not freeze
- ★ dehydrate to store
- ★ hand wash only, mild soap
- ★ item may be heated quickly in microwave. be careful, they will be extremely hot!

### finishing:

- ★ Create 4 ties for the front from bias tape. For each, double-fold a 6 1/2" length of bias tape and top-stitch the long edge. Use Fray Check® or other raw edge treatment on the cut edges to keep from fraying. Pin to the front of the vest about 2" from the bottom, raw edges together and pointing away from the front edge. Pin the next tie about 3" - 4" above it (about 2" from the neck edge). Similarly attach 2 ties to the other front side of the vest.
- ★ Turn the vest inside out and trim all the edges of the tubes flush with the edge of the mesh vest.
- ★ Next, finish the raw edges of the armholes by encasing the raw edge in the folded bias tape and sewing in place through all thicknesses near the inside folded edge. Be sure to turn under about 1/4" of the short edge and overlap the the start point before ending. This step finishes the mesh edge and the edges of all the tubes in one step.  
NOTE: if using commercial, pre-folded bias tape, one folded side will be just slightly narrower than the other. If you place this edge on the outside of the vest and attach from this side, it ensures that the other side of the folded tape is secured.
- ★ To finish the hem, front and neckline, begin attaching bias tape mid-back as you did for the armholes. Seam around the outside edges of the vest as before, ending once again at the back.
- ★ Finally, secure the ties by folding them back over the binding and tacking them in place.

instructions edited by Patti Pierce Stone - [www.p2designs.com](http://www.p2designs.com)

### Final Notes:

I advised my soldier to moosh the Watersorb® crystals along the length of the pockets as they are, as they tend to collect at the bottom of the pocket.

Good luck!! If you make one for a soldier I hope it keeps him/her comfortable!

*Ruth Marshall*  
[www.ruthmarshall.net](http://www.ruthmarshall.net)

### EDITOR'S NOTE:

The Ships Project has received word directly from a contact at Watersorb® that cool ties made with Watersorb® brand crystals can also be heated in a microwave (once they have been soaked, of course). They will purportedly retain heat about 3x times longer than they will retain cold.

You might test one of the completed vests in the microwave to see if it heats evenly. Don't over process and remember the heated tubes are **extremely hot!**