



Flexible milk bottle sleeve [WIP]



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Summary

This is just a prototype.

[Household](#) > [Kitchen](#)

Tags: [bottle](#) [waterbottle](#) [milk](#) [protection](#) [milkbottle](#)
[cover](#) [drinking](#) [water](#) [sleeve](#) [drink](#)

Milk bottles are my favorite way to store liquids.

1. They are very cheap including replacement caps which are standardized
2. They can be used and washed pretty much indefinitely and even sterilized with hot water
3. They do not change the taste of whatever is stored inside
4. Their openings are usually the right diameter which is just big enough the put ice cubes inside and not spill liquid in ones face when drinking

BUT, unfortunately they break and if they do so, it is always a mess. A quite dangerous mess.

To mitigate the damage I was thinking about buying a protection sleeve online but unfortunately didn't find one which fit those bottle: [6 x 1000 ml, 1 Litre Glass Milk Bottles in Sizes 200 ml / 250 ml / 500 ml or 1000 ml with Screw Cap slkfactory](#) : [Amazon.de: Home & Kitchen](#)

So what I have tried instead was:

1. Buying a big Heat Shrink Tube → Doesn't shrink all the way at the top. Two different sizes would be needed. Also smells and is probably not food grade.
2. Plastidip → Is food grade once completely dry. Unfortunately it didn't survive the dishwasher.
3. Neoprene → Cut out of a really thick neoprene vest. This could work but I am a novice at sewing and neoprene seems to be one of the hardest materials to sew. Also I added some holes to see how much liquid would be left but realized you can't see anything because of how dark it is inside.
4. Printed TPU → Lastly I came up with the idea to use a combination of 3D printed TPU stencils, TPU filament as yarn and 3d printed buttons. Bottom and shell part are held together by glue. Bottom part has an air gap to reduce fall damage.

Neoprene - Heat Shrink Tube - Plastidip - Unmodified



Plastidip after dishwasher - Neoprene - Testing sewing TPU - First TPU sleeve in black (forgot opening mechanism^^) - Final transparent TPU Prototype



Final transparent TPU Prototype with modifications: round cut on lid because they hurt. Removed some buttons because it took too long to open



Ultimately I decided to put this project on hold for now. Although I think my TPU Sleeve can protect the glas bottle, it doesn't fit perfectly and is very hard to model perfectly in CAD. It takes too long to put the bottle inside and to remove it. Plus holding the three parts together with filament works really but takes forever to assemble.

I hope this projects helps someone or inspires to further improve this concept.

Model files



bottom.stl

☐ Print 1x



sleeve.stl

☐ Print 3x



bottom.step



sleeve.step

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