

3D copa menstrual

Les traductions désuètes sont identifiées ainsi.

Copa menstrual listo para imprimir

 Difficulté Facile

 Durée 2 heure(s)

 Catégories Bien-être & Santé

 Coût 5 EUR (€)

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Introduction

La idea es crear un modelo o proceso para imprimir fácilmente un corte menstrual personalizable para aquellas personas que lo necesitan y para luchar contra la precariedad menstrual.

Con el mismo principio sería posible imprimir diaphragmas.

No todo el mundo tiene acceso a Internet para comprarla en línea, suficiente dinero para comprar una ya hecha, una cámara de vacío para moldearla y comprar silicona.

Mi idea es enviar el modelo y el filamento del tpu por ejemplo en fablabs y sería posible imprimirlo rápidamente.

Cualquiera puede participar en el fablab, por ejemplo, haciendo una donación gratuita en una caja junto a la impresora 3D.

Por lo tanto, podremos aplicar este principio en los países en desarrollo y en todos los lugares donde haya una persona necesitada.

Todo empezó en Thingiverse y con @Totdahl que pudo imprimir el prototipo y darme su opinión sobre el archivo. También lo publicó en el grupo de impresión en 3D en Facebook, lo que me permitió obtener comentarios tanto positivos como negativos, disgustados o divertidos.

Sin querer, todas participaron en una discusión sobre el cuerpo femenino y los tabúes que aún hoy representa.

Mientras tanto, pude conocer a @JessicaCL de Mission Control Lab, uno de los creadores de openfem.org. que tenía como proyecto generar soluciones anticonceptivas y de protección de código abierto. "copa y diafragmas" Como el sitio está cerrado y su proyecto abandonado, estamos en discusión para encontrar una solución.



Matériaux

Bobina de filamento flexible TPU/TPE (médico) o silicona.

Outils

Impresora 3D



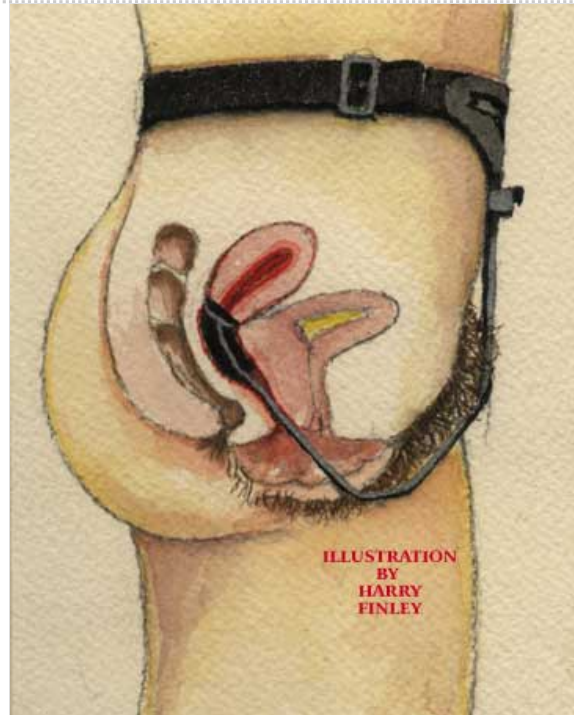
<https://www.thingiverse.com/thing:2958111>

Étape 1 - ¿Qué es la copa?

Patente de la copa menstrual 1867

No necesito copiar lo que encuentro en Wikipedia.

https://fr.wikipedia.org/wiki/Coupe_menstruelle



Étape 2 - Conozca el proyecto

El propósito de la investigación es permitir un proceso rápido de impresión saludable para evitar tener que crear un molde con silicona' (*no todo el mundo tiene la posibilidad de comprar este material y no tiene acceso a un tubo interior*) y para permitir una producción más rápida y personalizada. Y para luchar contra la precariedad menstrual.

Sería posible via SLA, pero aún no es lo suficientemente accesible.

Este modelo (*disponible en Thingiverse en la sección de archivos*) permitiría personalizar el tamaño directamente, y la forma para aquellos que tienen patologías específicas (*low neck, vaginism, uterus retroverted*) o **alergias** (**por lo que podríamos cambiar el material para las personas alérgicas a la silicona, siendo el TPU médico el más adecuado**).

Esto permitiría a las personas que no tienen acceso a la protección sanitaria (o que lo hacen con el equipo a bordo) ir a la escuela, trabajar y evitar infecciones que pueden costarles la vida. Y también para realizar importantes ahorros" (**entre 5-8€ /mes de protección, compra de ropa interior nueva, pink tax etc.**).

Espero que si esto funciona, algunas empresas puedan enviar filamentos a fablabs y otros terceros lugares para fabricarlos o asociaciones puedan comprar un carrito para hacer un taller.

Esto también puede ser objeto de debates y talleres de descubrimiento en torno al cuerpo femenino.

Sé que este problema suele ir acompañado del problema de la accesibilidad a los aseos.

Los invito a ver este video y el trabajo del movimiento Right To Pee (Un movimiento por urinarios públicos libres, limpios y seguros para mujeres en la India, una iniciativa de CORO India, con muchas otras organizaciones de mujeres creadas por Mumtaz Shaikh) y aprender más sobre proyectos como Clean Your Cup.

<https://www.youtube.com/watch?v=PTIxexrn1A8&frags=pl%2Cwn>

Les dejo artículos sobre la accesibilidad de la protección de la higiene en algunos países y sobre las normas en general, así como artículos interesantes sobre los materiales que pensé que iba a utilizar.

Te invito a que lo leas para que te hagas una idea del proyecto.

Siéntase libre si tiene algún comentario o artículo interesante para reportarme. "(en inglés, francés u otro idioma)"



Étape 3 - Preguntas que permanecen sin respuesta por el momento

- ¿El filamento de TPU/TPE corresponde al TPU médico? ¿Está hecho de otras cosas o de otros filamentos (PLA, ABS...)? ¿Son posibles otras pruebas por parte de las empresas que las fabrican?
- ¿Mantiene las mismas propiedades que las tazas actuales? ¿Podemos hervirlos? Resiste más de 8 horas en un ambiente a $\text{pH} < 5$ sin degradarse y corriendo el riesgo de un choque tóxico? ¿Tenemos la misma flexibilidad (buscamos un material 95A o similar)?
- ¿Se pueden imprimir con FDMs convencionales simplemente cambiando las boquillas, o necesitamos una impresora estéril para el sector médico? "(en este caso aumentaría el coste de producción y sería más interesante comprar una taza en el mercado que hacerla, a menos que sea a medida)".
- ¿Es posible tener el mínimo, ver evitar irregularidades en la impresión para evitar tener un nido bacteriano (por ejemplo, imprimiendo un poco más caliente y más lento)?



Étape 4 - Material safety data sheet (MSDS) of TPU98A

Material Safety Data Sheet (MSDS) Fiches que j'ai pu trouver sans demander (Cela reste vaste sur les priorités physiques et chimiques notamment sur le pH)

Chemical stability : Material is stable under normal conditions (quelles sont ces conditions ?)

- Fillamentum Flexfill (TPU) SDS : 92A / 98A
- Prusament 98A meme firme que pour Fillamentum
- Extruder TPU 98A
- NinjaTek TPU 85A
- KIMYA TPU 92A OWA
- Formfutura Pythonflex 98A
- Recreus Filaflex 95A
- Verbatim TPE A85
- Ultimaker TPU 95A avec enfin une ligne intéressante : Toxicité pour la reproduction--Aucun effet chronique connu
- Polymaker TPU 95A
- ColorFabb NGenFlex TPU 95A (not available for now)
- Grossiste 3D 94A (pas de SDS)
- ICE TPU 98A
- SainSmart TPU 95A (pas de SDS)
- Airwolf3D Wolfbend TPU 87A (indique dans les applications : médical devises)

Safety Data Sheet

According to EU Directive 1907/2006, as amended

Product name: TPU98A

Date of issue: 23-07-2018

Version: 1.3

1. Identification of the substance/preparation and of the company

- 1.1 Trade name:**
TPU98A
- 1.2 Use of the product:**
3Dprinter Filament
- 1.3 Supplier:**

2. Hazards identification

- 2.1 Classification of the substance or mixture**
According to Regulation (EC) No 1272/2008 [CLP]
No need for classification according to GHS criteria for this product
- 2.2 Label elements**
Globally Harmonized System, EU (GHS)
The product does not require a hazard warning label in accordance with GHS criteria.

The product does not require a hazard warning label in accordance with EC Directives, the dangerous ingredients are fixed in a polymer matrix.
- 2.3 Other hazards**
According to Regulation (EC) No 1272/2008 [CLP]
No specific dangers known, if the regulations/notes for storage and handling are considered.

3. Composition/information on ingredients

- 3.1 Substances**
Not applicable
- 3.2 Mixtures**
Polymer based on: polyurethane, stabilizing agents, additives
Does not contain any hazardous ingredients according to Regulation (EC) No. 1272/2008

4. First aid measures

- 4.1 Description of first aid measures**
On skin contact:
Burns caused by molten material require hospital treatment.
- 4.2 Most important symptoms and effects, both acute and delayed**
Symptoms: No significant reaction of the human body to the product known.

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Hazards: No hazards anticipated.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire fighting measures

- 5.1 Extinguishing media**
Suitable extinguishing media:
Water, foam, dry chemical powder, Carbon dioxide fire extinguishers
- 5.2 Special hazards arising from the substance or mixture**
Carbon dioxide, carbon monoxide, hydrogen cyanide, hydrocyanic acid, nitrogen oxides, isocyanate
The substances/groups of substances mentioned can be released in case of fire.
- 5.3 Advice for fire fighters**
Protective equipment:
Self contained breathing apparatus (SCBA).
Further information:
Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures**
No special precautions necessary.
- 6.2 Environmental precautions**
No special precautions necessary.
- 6.3 Methods and materials for containment and cleaning up**
Sweep up and contain spilled material if possible. High risk of slipping.
- 6.4 Reference to other sections**
Refer to section (8)

7. Handling and storage

- 7.1 Handling**
Provide suitable exhaust ventilation at the drying process and in the area surrounding the melt outlet of processing machines.
Protection against fire and explosion:
No special precautions necessary.
- 7.2 Conditions for safe storage, including any incompatibilities**
Segregate from foods and animal feeds.
Suitable materials for containers: High density polyethylene (HDPE), Low density polyethylene (LDPE), paper, board
Further information on storage conditions: Keep container tightly closed. Protect against moisture.

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8. Exposure controls/personal protection

8.1 Control parameters

Components with occupational exposure limits

The substances mentioned are contained only in traces in the product.
101-68-8: 4,4'-Methylenediphenyl diisocyanate

PNEC

The obligation to register acc. to the REACH Regulation (EC) No 1907/2006 does not apply to polymers.

DNEL

The obligation to register acc. to the REACH Regulation (EC) No 1907/2006 does not apply to polymers.

8.2 Exposure controls

Personal protection

Hand protection : not required.

Eye protection : not required.

Respiratory protection: Breathing protection if breathable aerosols/dust are formed.

General safety and hygiene measures

Wearing of closed work clothing is recommended. When using, do not eat, drink or smoke.

Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Flexible Solid Filament
Odour	Odourless
Colour	depending on product grade
Odour threshold	Not determined
pH	Not applicable
Softening Temperature	>120 °C
Initial boiling point and boiling range	The product is a non-volatile solid.
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	flammable
Upper/lower flammability or explosive limits	For solids not relevant for classification and labelling.
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	Ca. 1,1-1,2 g/cm ³ (20 °C)
Bulk density	ca. 600 kg/m ³ as granules
Solubility(ies)	Practically insoluble
Partition coefficient (n-octanol/water)	Not available
Auto-ignition temperature	>400 °C
Decomposition temperature	>230 °C
Viscosity	Not applicable

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Safety Data Sheet

According to EU Directive 1907/2006, as amended

Product name: TPU98A

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Version: 1.3

Explosive properties
Oxidizing properties

Not explosive
Not oxidizing

10. Stability

10.1 Reactivity: Stable under normal handling and storage conditions
Corrosion to metals: No corrosive effect on metal.

10.2 Chemical stability: Stable under normal handling and storage conditions

10.3 Possibility of hazardous reactions:

No hazardous reactions observed under normal handling and storage conditions

10.4 Conditions to avoid

While printing, keep away from sparks and open flame. Exposure to elevated temperatures can cause product to decompose.

10.5 Incompatible materials:

None known

10.6 Hazardous decomposition products

Possible decomposition products on thermal decomposition
carbon monoxide, Carbon dioxide, hydrogen cyanide, hydrocyanic acid
isocyanates, nitrogen oxides.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity:

Assessment of acute toxicity:

Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation. Virtually nontoxic after a single ingestion.
Experimental/calculated data:
LD50 rat (oral): > 5,000 mg/kg
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Irritation:

Assessment of irritating effects:

Not irritating to the eyes. Not irritating to the skin. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Respiratory/Skin sensitization:

Assessment of sensitization:

The chemical structure does not suggest a sensitizing effect.

Germ cell mutagenicity

Assessment of mutagenicity:

The chemical structure does not suggest a specific alert for such an effect.

Carcinogenicity

Assessment of carcinogenicity:

The chemical structure does not suggest a specific alert for such an effect.

Reproductive toxicity

Assessment of reproduction toxicity:

The chemical structure does not suggest a specific alert for such an effect

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Safety Data Sheet

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Developmental toxicity

Assessment of teratogenicity:

The chemical structure does not suggest a specific alert for such an effect.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Based on the available information there is no specific target organ toxicity to be expected after a single exposure.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

Repeated exposure to the substance by dermal administration leads to effects similar to those found after single exposure. Repeated exposure to the substance by inhalative administration leads to effects similar to those found after single exposure. Repeated exposure to the substance by oral administration leads to effects similar to those found after single exposure.

Aspiration hazard

No aspiration hazard expected.

12. Ecological information

12.1 Toxicity

Not expected to be acutely toxic, but material in pellet or bead form may mechanically cause adverse effects if ingested by waterfowl or aquatic life.

12.2 Persistence and degradability

Assessment biodegradation and elimination (H₂O):

Poorly biodegradable.

Elimination information:

Poorly biodegradable.

12.3 Bio accumulative potential

To avoid bioaccumulation plastics should not be disposed in the sea or in other water environments.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No. 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria.

12.6 Other adverse effects

The product does not contain substances that are listed in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

12.7. Additional information

Adsorbable organically-bound halogen (AOX):

This product contains no organically-bound halogen.

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13. Disposal considerations

13.1 Waste treatment methods

Can be used without re-conditioning.

May be disposed of or combusted with domestic refuse according to local regulations.

Waste key:

07 02 13 waste plastic

Contaminated packaging:

Completely emptied packagings can be given for recycling.

14. Transport information

Product has been classified as being non-dangerous substance according to transport regulations ADR, RID, IMDG, IATA/CAO

14.1 UN number

Not applicable

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing Group

Not applicable

14.5 Environmental hazards

No additional data is available

14.6 Special precautions for user

No data available

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not evaluated

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

15.2 Chemical Safety Assessment

The obligation to register acc. to the REACH Regulation (EC) No 1907/2006 does not apply to polymers.

16. Other information

Information is referenced from other manufacturers.

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 and Regulation (EC) No. 2015/830. Label element according to Regulation (EC) No 1272/2008.

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Étape 5 - ¿La copa es segura?

<https://www.youtube.com/watch?v=ul6s9s9khCXHY> (video que me dio la idea de hacer este proyecto y filamento que planeo usar TPU/TPE).

<http://www.orangenarwhals.com/2015/11/diy-menstrual-cups-hack4fem> "(prueba del moho de la taza)".

<https://3dprint.com/36851/sexshop3d-safe-sex-toys/> (How to make sex toy safe)

<https://www.liveloveluna.com/blogs/news/fda-approved-menstrual-cups-what-does-it-really-mean>

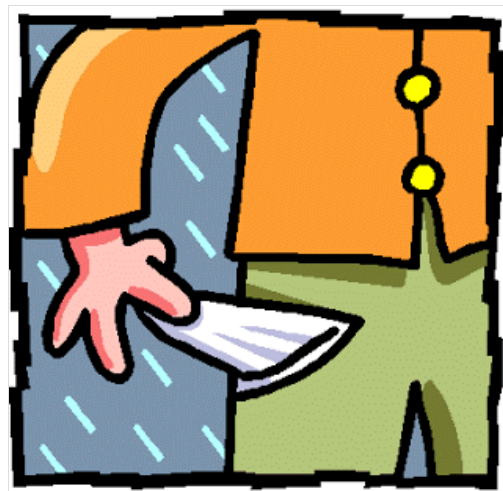
<https://readycontainment.com/wp-content/uploads/2017/11/Cooleys-Chemical-Resistant-Chart.pdf> (TPU chemical resistance chart)

- <https://www.quora.com/How-does-TPU-differ-from-silicone>
- <https://www.quora.com/Is-thermoplastic-polyurethane-TPU-toxic>



Étape 6 - Accesibilidad a las protecciones higiénicas/precariedad menstrual

- <http://www.leparisien.fr/laparisienne/actualites/societe/tampons-et-serviettes-hygeniques-des-produits-de-luxe-07-05-2018-7703358.php>
- https://www.youtube.com/watch?time_continue=23&v=GXqF9H2aMBw



Étape 7 - Libros y artículos/blogs sobre reglas

- Le grands mystères des règles part Jack Parker
- <https://passionmenstrues.com/author/jackxparker/>
- https://simonae.fr/sante-bien-etre/menstruations/regles_dessous_protections_periodiques_adopter/
- <https://simonae.fr/sante-bien-etre/menstruations/coupe-menstruelle-revolution-silicone-cup-regles/>
- <https://cyclique.fr>
- <https://putacupinit.com>

