THE Hybrid Atelier

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Screenprinting Heaters Lab Guide

Website URL
https://hybridatelier.uta.edu/equipment/101-conductive-paint

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Resources
Bare Conductive
How to stencil with Electric Paint
How to screen print with Electric Paint

1 Cost Analysis

Type	Amount	Cost	Unit Cost ($/mL)	Conductivity
Bare ePaint Tube	10mL	$11.04	$1.10/mL	55Ω/sq
Bare ePaint Jar	50mL	$31.19	$0.62/mL	55Ω/sq
Bare ePaint Can	1000mL	$390.02	$0.39/mL	55Ω/sq

First Test
Wed - June 24, 2020 / Sara Rastegarpouyani

60 mesh count screen
Graphite Ink
5 tests were done

Test Observations:

1. Considering square frames around each element in our vector file was completely unnecessary. Why?

- It made it more difficult to transfer the vinyl onto the screen due to the fine lines
- It will cause more ink to be wasted.

Solution: The edited vector file is attached.

https://drive.google.com/file/d/1in9BijNfGz1ThkYiCv7phQUXqTgP_zJa/view?usp=sharing

2. Since the graphite ink is a lot more thicker compared to the regular ink, it is critical to work so fast but focused. As the graphite also gets dried pretty quick and it will block the mesh holes.
3. The screen and all the tools which were being used must be washed immediately.
4. 5 tests were being done. (1 one pass/2 2 passes / 2 3 passes)
5. The ones which came out more successful were the 3 passes in which the first pass is a gentle pass in a way to just let the graphite rest over the negative areas, the second pass is with more force to help the graphite pass through the mesh, and the third pass is done using another thin layer of graphite.
6. The 10” squeegee worked better than the 3”

- 1 mm separation is the best for the vinyl removal.
- 4 mm trace width has lower resistance 6.6 kO
- More passes = Less resistance

Second Test
Wed - July 1, 2020 / Sara Rastegarpouyani

60 mesh count screen (used for the black background)
320 mesh count screen (used for crystal ink)
Black fabric ink / Crystal Ink
7 tests were done

Process Images: