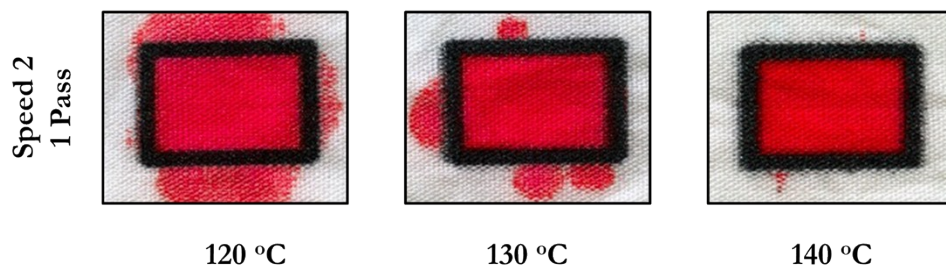
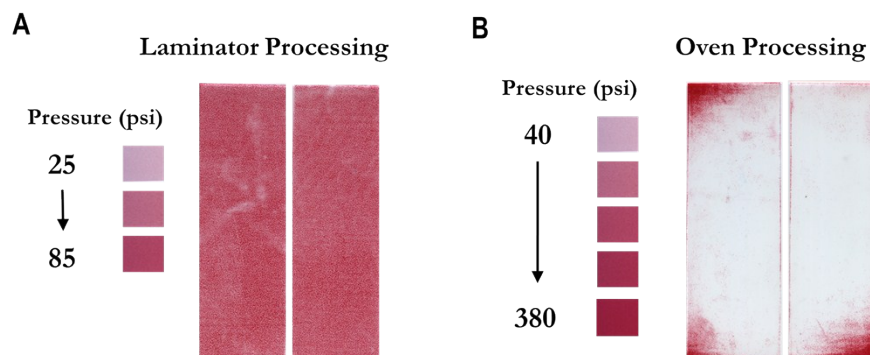


**Supplementary Information:**



**Figure S1:** Selected images of leak-tested wax cells in PTC fabric that did not successfully hold fluid, using laminator parameters that yielded less than 100 % leak-proof devices over replicates ( $N = 20$ ). Samples were prepared via laminator processing at speed 2 (10.7 mm/s) and 1 pass for temperature settings of 120, 130, and 140 °C. Leaks appear to arise in the material through single yarns that are insufficiently coated with wax to form a hydrophobic barrier.



**Figure S2:** Pressure distributions across the sample regions during processing via oven or laminator wax transfer printing are visualized using pressure sensitive paper (UL270 and SL270, Sensor Products International) where higher color density indicates increased pressure. Characterization was performed with paper calibrated in (A) low psi range (UL270) and (B) high psi range (SL270). Pressure distributions across the sampling region are relatively uniform via laminator processing and estimated to be ~55-65 psi. The clamping procedure used in the oven process results in uneven pressure applied across the substrate, ranging from below 40 – 330 psi.

Average Internal Area (cm <sup>2</sup> )				
Laminator-based heating conditions		*Temperature (°C)		
Speed Setting	Number of Passes	120	130	140
1	1	0.70	0.69	0.68
	3	0.67	0.65	0.64
	5	0.66	0.63	0.62
2	1	0.70	0.68	0.67
	3	0.68	0.65	0.63
	5	0.66	0.63	0.61

**Figure S3:** Summary table of the internal area of wax cells created using laminator-based heating (correlates to the entries in Figure 3A). For a set of laminator parameters, the internal areas of two cells were measured using ImageJ and averaged. Samples were leak-tested with a volume equal to 120 % the material capacity, determined using the estimated area and the estimated capacity for the PTC fabric (14.7  $\mu\text{L}/\text{cm}^2$ ). The color of the cell provides an indication of the percentage of leak-proof cells ( $N = 20$ ), with green corresponding to 100% and red corresponding to 15%. \*Note that the temperature entries in the table represent the laminator set point. A speed setting of 1 corresponds to 6.3 mm/s, while a speed setting of 2 corresponds to 10.7 mm/s.