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Flexible yet wear-resistant co-citrate elastomer for on-demand disposable patch sensor

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Figure S1. Synthesis route of poly(1,8-octanediol-*co*-citrate)

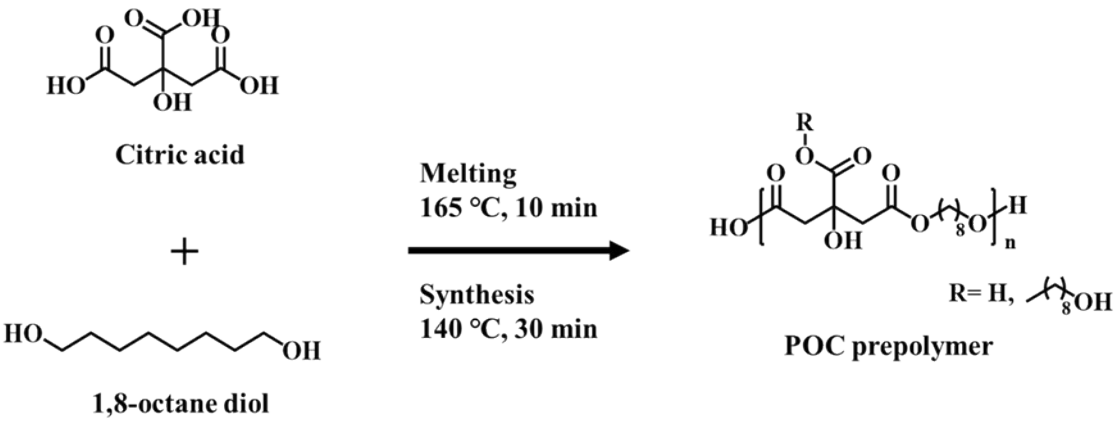


Figure S2. Synthesis route of PECSQ

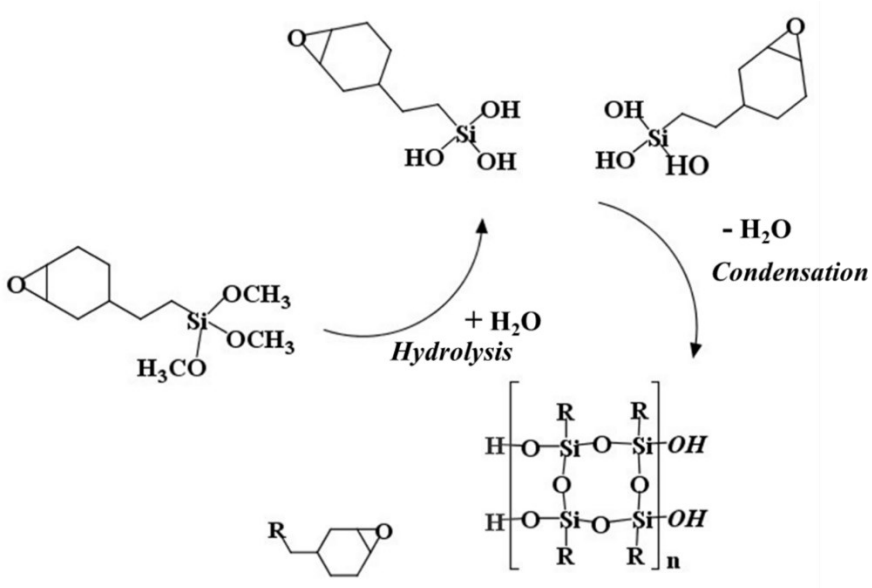


Figure S3. The FT-IR study of PECSQ. (A) FT-IR result of PECSQ sol, (B) FT-IR result of epoxy conversion through the curing process.

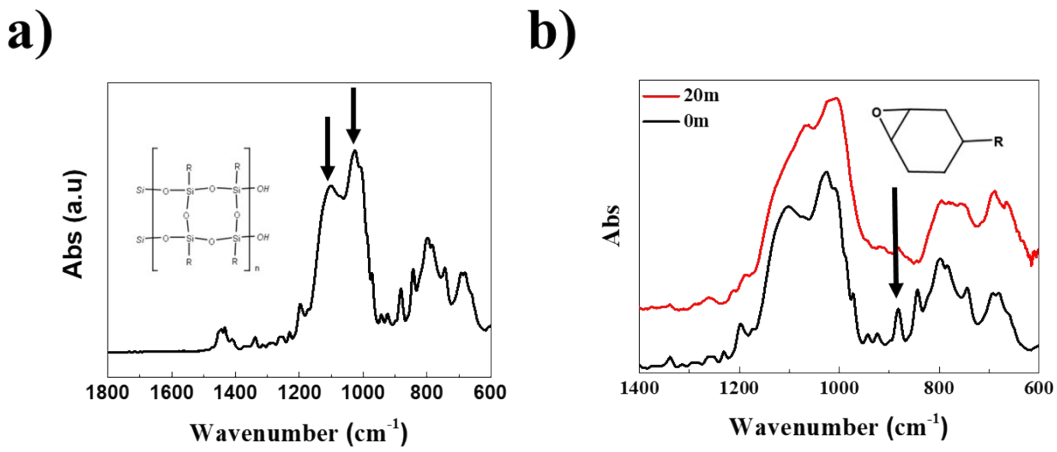


Figure S4. The FT-IR spectra of (A) citric acid and (B) 1,8-octanediol

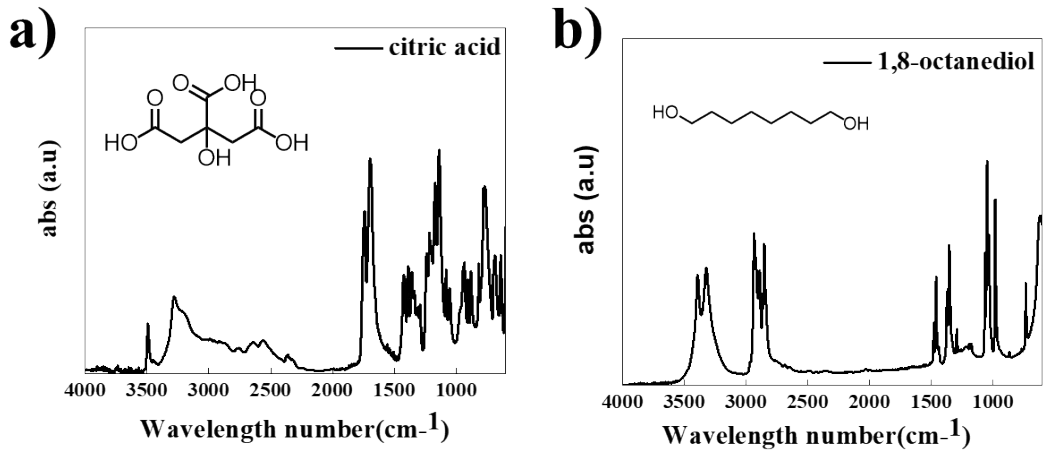


Figure S5. The H-NMR spectra of (a) POC prepolymer (b) PECSQ sol, (c) thermally cured $POC_{90}/PECSQ_{10}$ elastomer

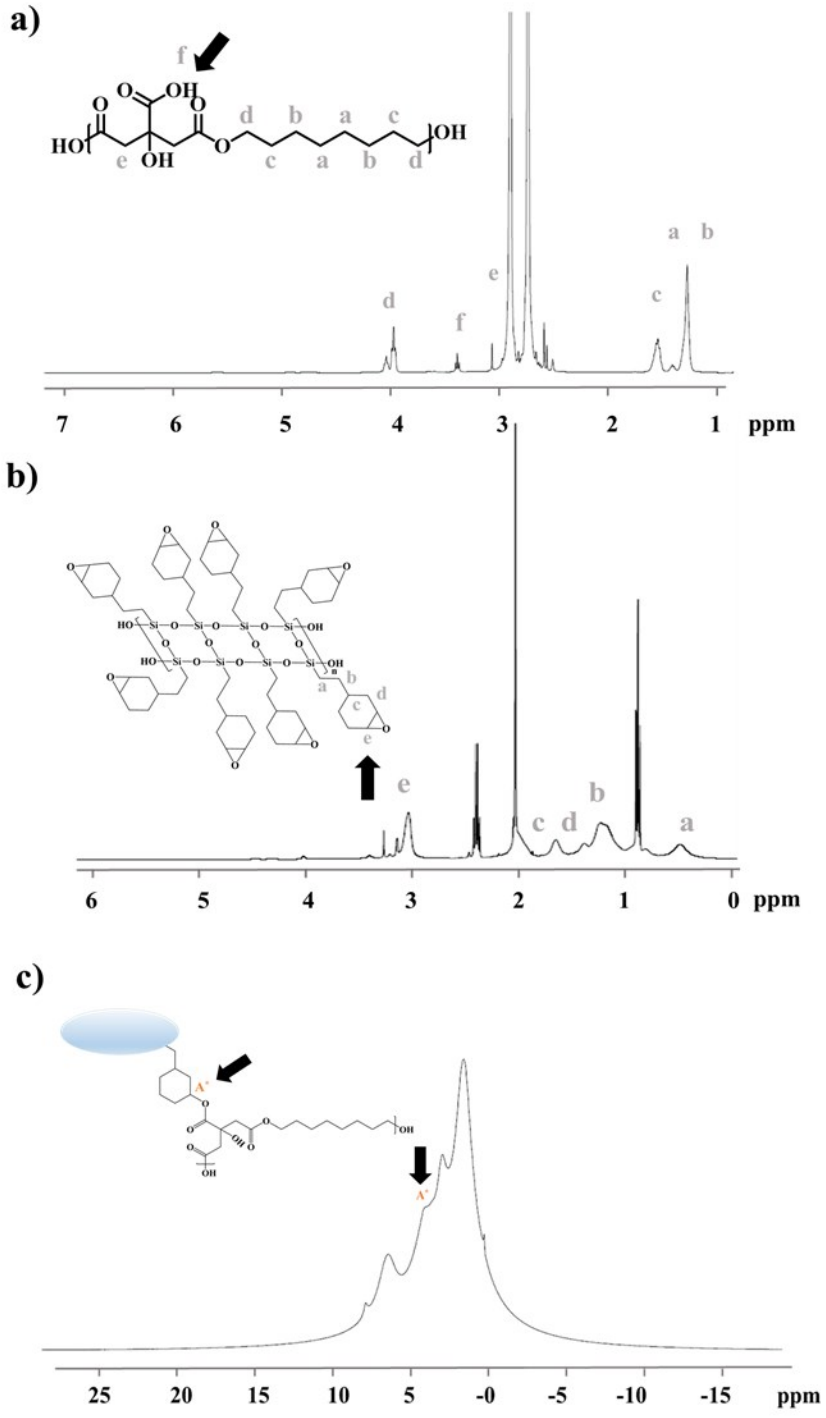
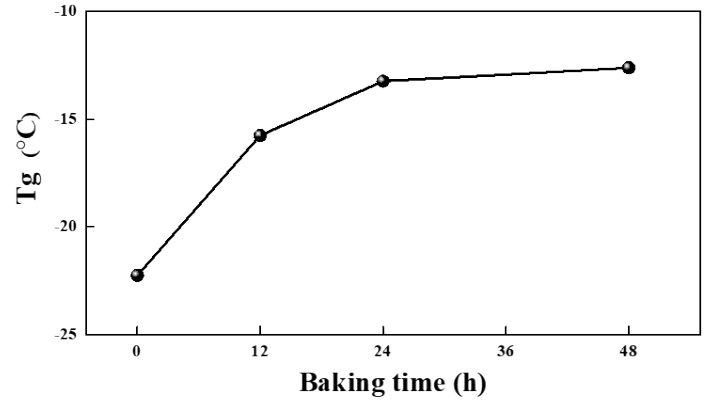


Figure S6. The change of glass transition temperature of (a) POC elastomer film as a function of baking time and POC/PECSQ elastomer film with respect to the solid contents of PECSQ

a)


-10
-15
-20
-25
Tg (°C)
0
12
24
36
48
Baking time (h)

b)

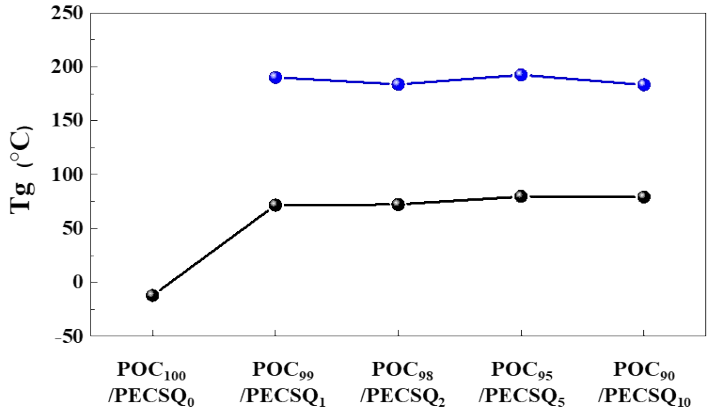

250
200
150
100
50
0
-50
Tg (°C)
POC100 /PECSQ0
POC99 /PECSQ1
POC98 /PECSQ2
POC95 /PECSQ5
POC90 /PECSQ10

Figure S7. The degree of dissolution of POC elastomer film in DI water with different pH

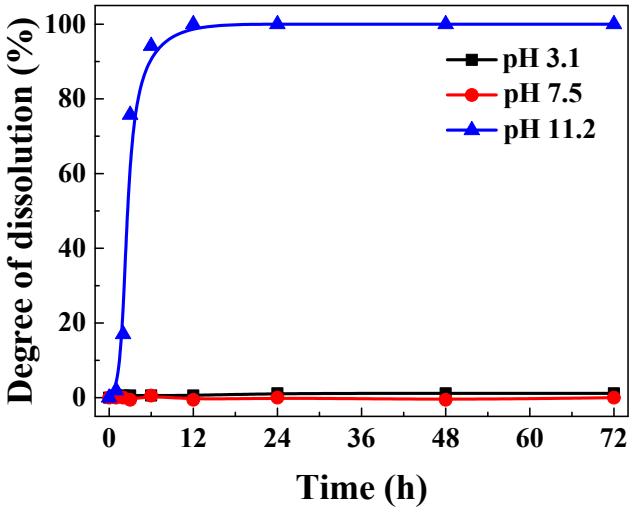


Figure S8. The dissolution behavior of POC/PECSQ elastomer film with laundry detergent-based water at (A) 60 ℃ and (B) 80 ℃.

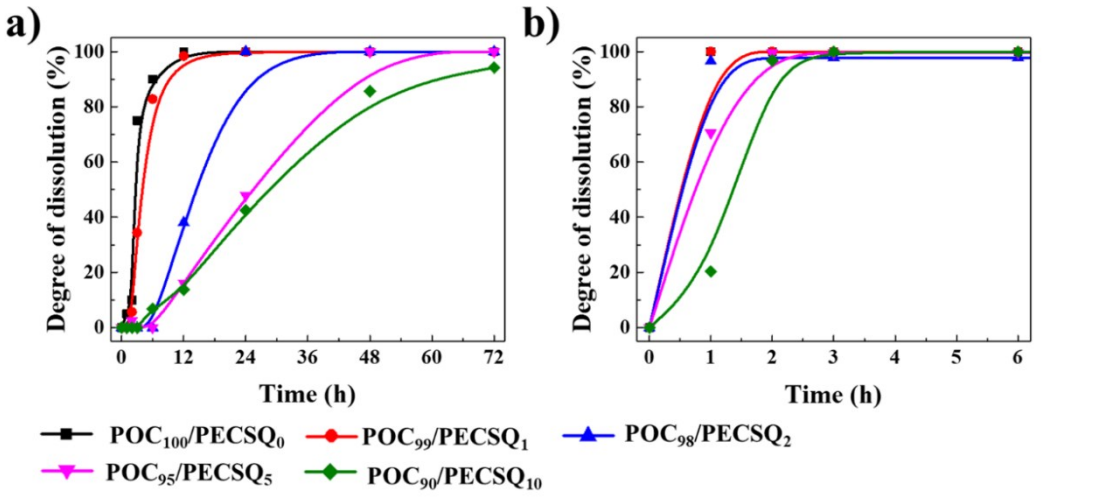


Figure S9. (a) FT-IR results of POC/PECSQ elastomer and POC/PECSQ-degraded dissolving medium (b) The pH variation behavior of POC film upon dissolution at various dissolving medium as a function of time