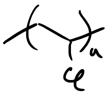
Polymers



poly (vinyl chloride)

C_2 12.01 x 2 = 24.02 mw
H_3 1.00 x 3 = 3.00 mw
Cl_1 35.45 x 1 = 35.45 mw

62.47 mw

precursor 

"calibrated data aquired"

$\frac{50{,}000 \text{ mw}}{62.47 \text{ mw}}$ = 800 units   units = n

C_2 1600
Cl_1 800

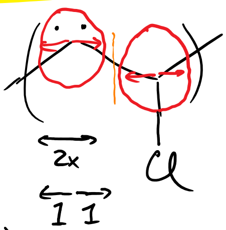
$\frac{25{,}000 \text{ mw}}{62.47 \text{ mw}}$ = 400 units

C_2 800
Cl_1 400

$\frac{75{,}000 \text{ mw}}{62.47 \text{ mw}}$ = 1,201 unit

C_2 2,402
Cl 1,201

for the 50,000 mw peak.   radius 170 pm

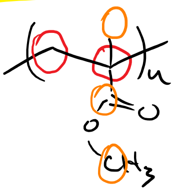


C_{radius} = 170 pm x 2 x 1600
= 544,000 pm (pico meter)
= 5.44 x10^{-5} cm (centimeters)
= 544 nm

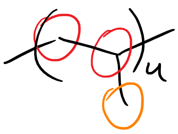
544,000 pm
the polymer

25,000 mw
272,000 pm

75,000 mw
816,680 pm

#5 

poly methyl meth acrylate

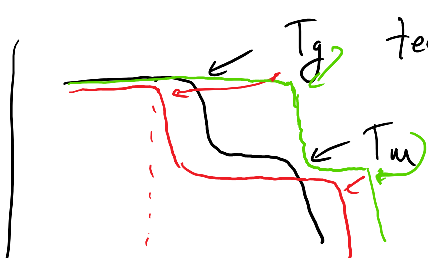


poly propylene

" tires "

~ -50°C

"physical property"

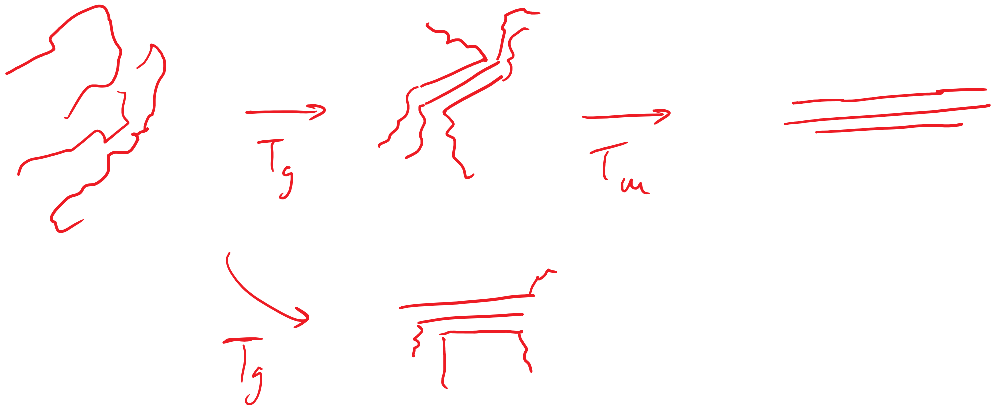


Tg temperature glass transition   if
Tm melting point   if 50°C Tg
"liquid phase"   if 100°C Tm

property

"liquid phase" if 100°C Tm

T (°C) temperature or (K)



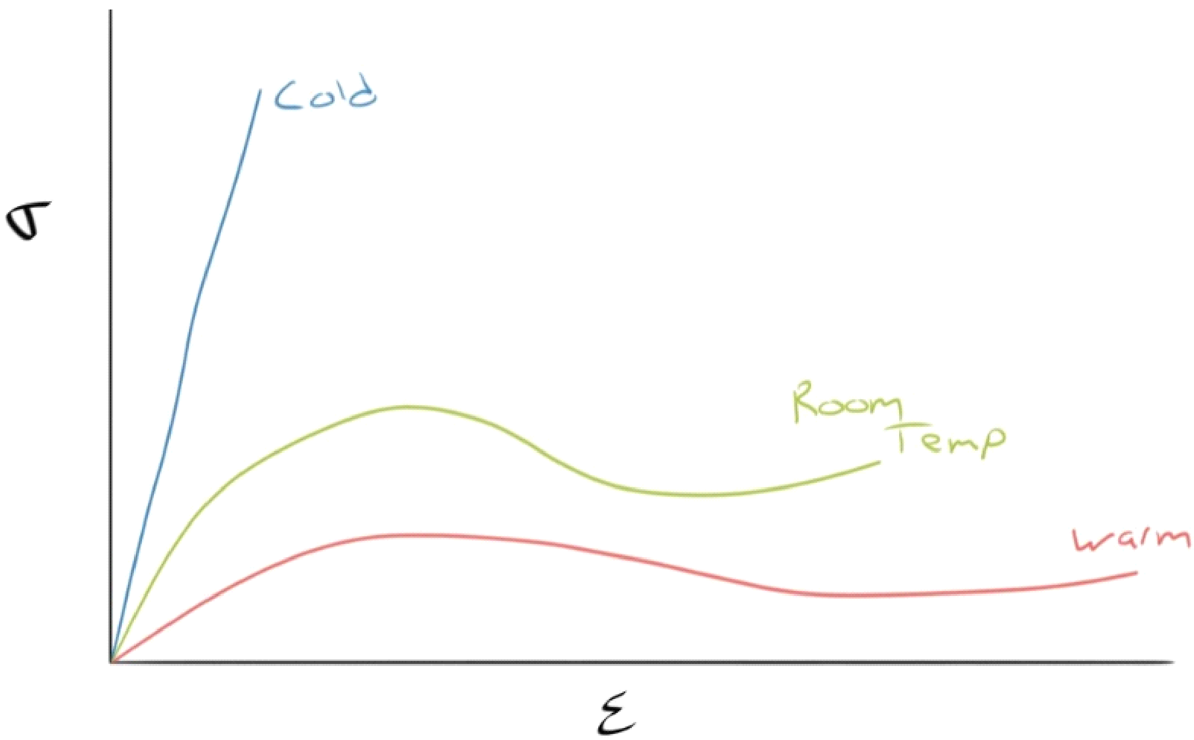


Figure 19. A stress-strain curve for a hypothetical plastic polymer at three temperatures. It is not uncommon for polymers to experience significant changes in mechanical properties with relatively small changes in temperature.

Figure 13. The molecular weight distribution for the hypothetical polymer sample in Figure 12. Our grouping into only five length groupings is very coarse and the actual distribution would be smooth, as shown by the nice smooth curve.