Homework #24

15.1 *From the stress–strain data for poly(methyl methacrylate) shown in Figure 15.3, determine the modulus of elasticity and tensile strength at room temperature [20°C (68°F)], and compare these values with those given in Table*

15.17 *The tensile strength and number-average molecular weight for two poly(methyl methacrylate) materials are as follows:*

Tensile Strength (MPa)	***Number-Average Molecular Weight (g/mol)***
107	*40,000*
170	*60,000*

Estimate the tensile strength at a number-average molecular weight of 30,000 g/mol.

15.40 *(a) How much ethylene glycol must be added to 47.3 kg of dimethyl terephthalate to produce a linear chain structure of poly(ethylene terephthalate) according to Equations 15.9?*

(b) What is the mass of the resulting polymer?

15.46 *Which of the following polyethylene thin films would have the better mechanical characteristics? (1) Those formed by blowing. (2) Those formed by extrusion and then rolled. Why?*