

## **Chemistry 248A Polymer Report Project (25 points)**

Topic: research a specific polymer (selected from grab bag)

Extent: 2-3 pages – **Google Doc in your portfolio folder by May 20, 2023 (day of final exam)**

Use full sentences – this is an essay. Use the bolded headings given here as your outline. Pictures are always appreciated. Feel free to clip images into your story as long as you reference them.

### **2 pts Type**

-- what type of polymer is it (elastomer? thermoplastic? thermoset? – explain that term)

### **2 pts Chemical structure**

-- NOTE: If your chosen polymer is a *family* name such as *polyester*, look around and find a specific polymer of that family. We need a specific chemical structure here, if possible.

### **5 pts Synthesis**

-- What are the monomers in this case?

-- Show equations indicating how this polymer is produced.

Do some research on this. If you do not find anything, indicated that and *propose* a method that is consistent with what you have learned in class.

-- Discuss your process. Is it initiated? If so, how? What sort of process is involved?  
(addition? condensation? radical? cationic? anionic? ...)

### **5 pts General physical properties**

-- What characteristics make it particularly useful?

-- What limitations does it have?

### **1 pts Manufacturing information**

-- manufacturer, trade name(s), U.S. or world annual production level if you can find it

### **2 pts Typical uses**

### **3 pts Concerns and limitations**

-- Expensive? Toxicity issues? Other?

### **5 pts Reference citations**

-- for all information you gather (at least three)

-- Web references are fine; be sure to give the full URL link. Wikipedia is OK for ONE, but be aware that I know of mistakes in Wikipedia. Don't just repeat them! Likewise, one reference may be <https://polymerdatabase.com/>. Note the very thorough discussion of polymer chemistry and physics at that site. Lots of explanations of terms.

-- no specific format required on these. Just make them look nice.

**Note: Explain all terms that are new to you and we have not discussed in class.**

**Don't include anything YOU DON'T UNDERSTAND**

**or that I, as your reader, will suspect you do not understand!**

I am more than happy to work with you to understand what you find. Just arrange a time.