

Homework 13 Plastics in a Circular Economy

This week we had discussions with Robin McKiernen and Todd Cline from P&G as well as Breeze Briggs and Mihaela Madaras from Sun Chemical.

- a) P&G is a member of the Alliance to End Plastic Waste. A recent article critiqued this group as being dysfunctional.
https://www.theguardian.com/environment/2024/nov/20/five-firms-in-plastic-pollution-alliance-made-1000-times-more-waste-than-they-saved-analysis-shows?CMP=Share_iOSApp_Other
Comment on this article using some of the information you gained from the discussion with Robin and Todd. You could find another article or other information if you want to support your comment. Try to keep this to less than two paragraphs (unless you feel inspired).
- b) Robin and Todd highlighted several areas where P&G is addressing sustainability such as replacing plastic packaging with paper packaging, removing water from shampoos and body wash, replacing multilayer films and multi-component packaging with mono-component, recyclable content, removing metallic labels, down gauging plastic, imparting strength in packaging through designed patterns, something called LOOP containers (<https://www.thekrogerco.com/loop/>). Comment with a critical view the effectiveness of these approaches.
- c) PureCycle was highlighted in the discussion. What is Purecycle? Why do you think that Ryan Breese from LyondellBasell or Jeff Snyder from Rumpke didn't emphasize the importance of PureCycle for polypropylene? What is your opinion of the PureCycle process?
- d) Sun Chemical is working on a new plastic labeling technology that uses "Blockchain" ledgers. Explain how this works, what are the advantages, what are the critiques for using Blockchain ledgers in industry? Blockchain was the basis of Bitcoin. What are the disadvantages of Bitcoin in terms of sustainability? Do these same disadvantages apply to plastic packaging?
- e) Inks limit the recyclability of plastics unless they can be removed from packaging and other plastics. What is the difference between "washable inks" and "retention inks"? What does "ink bleed" mean in the context of recycling? How has Sun addressed these issues? What are SunLam[®] adhesives and how are they involved in recyclability?

Several weblinks for P&G and Sun are on the bioplastics files webpage:

https://www.eng.uc.edu/~beaucag/Courses/PlasticsInACircularEconomy/Chapter9_BioPlastics/BioPlastics.html