

CHEM 489 – Spring 2020
Advanced Environmental Chemistry
Introduction to Green Chemistry
Dr. Brush

January 30 (Thursday):

- **Writing Prompt-1 feedback via email with “track changes” mark-up**
- **Journal Club-1 presentations**
- **Worksheet-1 handout (due Tuesday, Feb 4)**
- **Writing Prompt-2 (due 5:00 pm Monday, Feb 3)**
- **Journal Club-2 Topic (info due Tuesday, Feb 4)**
- **Introduction to Green Chemistry (continued):**
 - **Green Chemistry Metrics**



Efficiency Metrics for Chemical Processes

(2) % Yield: Comparing the amount of product formed to the limiting reagent (based on the theoretical yield of product).

$$\% \text{ Yield} = \frac{\text{Experimental yield of product}}{\text{Theoretical yield}} \times 100$$

Efficiency Metrics for Chemical Processes

(3) Atom Economy: Designing a synthesis in which most, or all, of the atoms of reactants become incorporated into the final product.

$$\% \text{ Atom Economy} = \frac{\text{Formula weight of product}}{\Sigma (\text{Formula weight of all reactants})} \times 100$$

*****You can have a very high % Yield, but a low Atom Economy.**