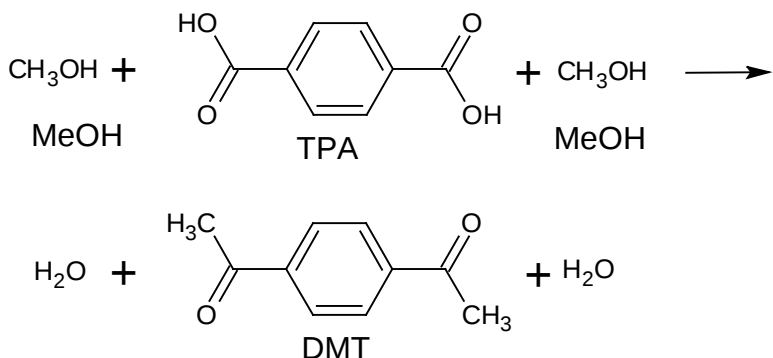


Kinetics & Reactor Design I: Kinetics

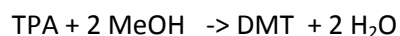
Continuing Ed workshop by Richard Skeirik, PE

Elementary Reaction Rates Exercise

Both acid groups of TPA are methylated in liquid phase to form DMT, which (in another process) polymerizes and ultimately makes good soda bottles or car bumpers.



We can write this as



3 molecules reacting: not elementary. Figure out a two-reaction sequence. MFB (go figure) is a good name for the molecule with one acid and one methyl ester (or just D, Whatever you like.) You'll need a k in each one. Try using k_1 for the first reaction and k_2 for the second.

Reaction 1:

Reaction 2:

Now you have two elementary reactions. Write the standard rate expression for each. You'll need a k in each one. Try using k_1 for the first reaction and k_2 for the second.

Rate of reaction 1:

Rate of reaction 2:

What are units of the rate?

What are the units of k_1 ? k_2 ?

What if the reaction was in the gas phase? What likely units would you use?