



Plastic? From Natural Gas?

By John Harpole

I've always had complete autonomy on the topics that I choose for this column. However, this month, devoid of any ideas, I asked Editor-In-Chief Paul Hart what he would like me to write about. He suggested an article about natural gas demand and demand for ethane, a feedstock for plastic.

How could I possibly describe how ubiquitous plastic has become in our modern lives, all made possible by abundant, reliable natural gas? For the first time, I was the victim of writer's block.

A few Saturdays ago, in an effort to avoid the computer, I found myself sitting in my favorite Adirondack chair (made of low-density polyethylene), out on our backyard Trex deck (recycled linear low-density polyethylene), sipping water from my Nalgene water bottle (Eastman Tritan plastic) pondering how I could write anything interesting about gas demand as it relates to ethane, ethylene and plastic. Although it was a brisk 45-degree Saturday, I was warm in my polar fleece-lined (polyethylene terephthalate) vest.

It should be an easy column to write, shouldn't it? As Yahoo Answers says, "If it's manmade and you are not absolutely sure that it is metal, wood/paper or glass/ceramic, then it is probably plastic."

It's a fairly simple story. Gas is processed to separate ethane, ethane is "cracked" to make ethylene, which is used as a feedstock to make the vast majority of plastic in the U.S.

At my lowest writer's-block moment, my 12-year-old son Jack (nicknamed Harp) sprinted across the backyard carrying his (plastic) air soft rifle loaded with Crosman air soft pellets (polyvinyl chloride) wearing a pair of Rawlings (polycarbonate) high impact safety glasses. He and his five buddies had just spent the morning ambushing one another with their best impression of "Zero Dark Thirty."

We have affectionately nicknamed those six camo-dressed kids "Harp-Seal Team Six."

I was resting with my feet up on an inverted (high-density polyethylene) flowerpot, daydreaming how airsoft BB pellets should be made of biodegradable material with a fertilizer pellet inside. I mean after all, aren't airsoft BBs a close cousin to nitrogen-based fertilizer pellets? Both are made from natural gas so there wouldn't be any decline in demand, right?

I would estimate that over the years, Harp-Seal Team Six has fired off at least 100,000 plastic pellets in our two-acre, tree-covered backyard. If they had been shooting fertilizer rather than

plastic pellets, our property would look like Ireland in June ... even though it's currently March.

I began to realize the depth of my writer's block. I mean, who in their right mind dreams up fertilizer-based, air-soft pellets? Fortunately, at that very moment, Jack announced that they were all out of ammo.

Looking for any excuse not to write, I asked the boys if they wanted to take a road trip to Cabela's to reload. Yes! So off to Cabela's we went in my King Cab F-250. Rather than leaving behind their airsoft BB armory, we stashed the weapons on the plastic bed-liner of my truck and closed the rolling (composite polystyrene) bed cover.

So I asked each of them to identify things-made-of-plastic on the way to the store.

Here is a rough list of their things-made-of-plastic: Trash can, tarp, garden hose, truck bumper, five-gallon water bottle, orange traffic cone, water tank, snow sled, Tyco basketball hoop and trash bags.

Then when we backed out of the garage, the list really took off—for at least a block—until they started getting silly by pointing out things like Mrs. DiGrappa's pink poodle whose large quantities of natural fertilizer are immediately placed in a plastic (high-density polyethylene) bag.

So I decided to tell the boys about the history of plastic, until my son quickly flashed that "Dad-you're-not-being-cool-anymore" look. He cut me off before I could mention the 1923 breakthrough by the German chemist Herman Staudinger on super polymer plastics or the 1930s breakthrough on injection molding.

We made it to Cabela's, bought the ammo and Harp-Seal Team Six still had time to re-enact the Normandy beach invasion before civil twilight.

On the way home, though, at the risk of being a boring dad, I did drill them on the fact that the natural gas industry has revitalized the U.S. chemical industry. We are so proficient at finding and producing natural gas in the U.S. that plastic pellets are being exported to many parts of the world.

"Cheap air-soft BB's forever Dad?"

Definitely! ■

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