ECI INFORMATION SHEET

Types of Plastic Feedstock

Pyrolysis System

The technology is not overly complicated: plastics are shredded and then heated in an oxygen-free chamber (known as pyrolysis) to about 400 degrees celsius. As the plastics boil, gas is separated out and reused to fuel the machine itself. The fuel is then distilled and filtered. Because the entire process takes place inside a vacuum and the plastic is melted - not burned, minimal to no resultant toxins are released into the air, as virtually all the gases are reused to fuel the machine.

Types of Plastic

For this technology, the type of plastic you convert to fuel is important.

If you burn pure hydrocarbons, such as **polyethylene (PE) and polypropylene (PP),** you will produce a fuel that burns fairly clean.

But burn PVC, and large amounts of chlorine will corrode the reactor and pollute the environment.

Burning PETE releases oxygen into the oxygen deprived chamber thereby slowing the processing, and PETE recycles efficiently at recycling centers, so it is best to recycle PETE traditionally.

HDPE (jugs) and **LDPE** (bags and films) are basically polyethylene .... so usable as fuel as well, just slightly more polluting as a thicker heavier fuel is created. But additional processing can turn even HDPE into a clean diesel.

Polyethylene (PE)

Polyethylene (abbreviated **PE**) is the most common plastic.

The annual global production is approximately 80 million tonnes

Its primary use is in packaging [plastic bag, plastic films, geo-membranes, containers (including bottles, etc.)].

High Density Polyethylene (HDPE)

High Density Polyethylene (**HDPE**) is used in products and packaging such as milk jugs, detergent bottles, butter tubs, garbage containers and water pipes.

One third of all toys are manufactured from HDPE.

In 2007 the global HDPE consumption reached a volume of more than 30 million tons.

Low Density Polyethylene (LDPE)

Low Density Polyethylene (**LDPE**) is used for both rigid containers and plastic film applications such as plastic bags and film wrap.

Polypropylene

Polypropylene **(PP)**, also known as polypropene, is a thermoplastic polymer.

It is used in a wide variety of applications including packaging and labeling, textiles (e.g., ropes, thermal underwear and carpets), stationery, plastic parts and reusable containers of various types, laboratory equipment, loudspeakers, automotive components, and polymer banknotes.

Summary

The ideal feedstock is found in the form of your everyday **plastic shopping bag**, as used by customers of supermarkets, etc. to carry their food and related purchases.