

The Albany plant produces plastic bottles and caps.

Receiving Department

The receiving department accepts the delivery of raw materials shipped to the company by truck.

The raw materials, or inputs, are:

1. High-density polyethylene (HDPE) plastic pellets
2. Cardboard
3. Adhesives
4. Ink
5. Solvent cleaners
6. Lubricating oils
7. Mold release agents
8. Electricity
9. Natural gas
10. Light bulbs

The desired product is comprised of inputs sent to the molding department.

The possible byproducts, wastes, or outputs, from this department are:

1. Off-spec raw materials managed as waste
2. Spilled materials that may cause land and water pollution
3. Wasted energy from lighting, heating, and processing equipment

If possible, off-spec raw materials are returned to the vendor for credit. Otherwise, the material is treated as waste and sent to a landfill.

Molding Department

The Georgia plant does not do custom orders. To help manage costs, the products produced by the plant are offered in a standard palette of colors. Because the colors are standardized, the HDPE pellets are ordered pre-mixed with the necessary colorizing dyes. While this requires more warehouse space to store a larger amount of HDPE pellets, production costs and time are saved by not having to mix dyes and HDPE pellets.

The inputs are:

1. HDPE pellets
2. Lubricating oils
3. Solvent cleaners
4. Mold release agents
5. Electricity
6. Natural gas

The desired product is comprised of molded plastic parts for the trimming department.

The outputs from this department are:

1. Emissions from the molding operation that may cause air pollution
2. Scrap plastic or flashing managed as solid waste
3. Plastic material used to purge the equipment before a color change and managed as solid waste
4. Spent cleaners and mold release agents that may create air pollution from volatile organic compound emissions and managed as hazardous waste
5. Off-spec product managed as solid waste
6. Used oils managed as industrial waste
7. Spent cleaners and mold release agents managed as hazardous waste
8. Wasted energy from lighting, heating, and processing equipment

Scrap plastic, off-spec products, and purge material are collected and reused.

Solvents are applied to the machines per the manufacturer's recommendations. Excess solvent is rinsed from the machines with water.

Used oils are collected by a third-party hazardous waste disposal company.

Trimming Department

The excess plastic that is attached to the part is trimmed with a mechanical shearer.
The inputs are:

1. Lubricating oils
2. Solvent cleaners
3. Electricity
4. Natural gas

The desired product is comprised of finished plastic parts for the labeling department.

The outputs from this department are:

1. Scrap plastic or flashing managed as solid waste
2. Off-spec product managed as solid waste
3. Used oils managed as industrial waste
4. Spent cleaners managed as hazardous waste
5. Wasted energy from lighting, heating, and processing equipment

Scrap plastic and any off-spec product are collected and reused.

Solvents are applied to the machines per the manufacturer's recommendations. Excess solvent is rinsed from the machines with water.

Used oils are collected by a third-party hazardous waste disposal company.

Labeling Department

Some customers want labels, logos, or production- run information to be printed on the plastic surface. This is done using machines that spray the desired label, logo, or information onto the surface of the plastic part using specially formulated inks.

The inputs are:

1. Ink
2. Lubricating oils
3. Solvent cleaners
4. Electricity
5. Natural gas

The desired product is comprised of finished and labeled plastic parts for the packaging department.

The outputs from this department are:

1. Spilled ink that may cause pollution
2. Off-spec product managed as solid waste
3. Used oils managed as industrial waste
4. Spent cleaners managed as hazardous waste
5. Wasted energy from lighting, heating, and processing equipment

Off-spec products are collected and delivered to a local recycling center.
