RECYCLING 101

EGLE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

RECYCLING 101 LEARN THE BASICS

(AND A FEW TIPS, TOO!)

IF someone asked you to recite the materials that are collected through your curbside service or at your local recycling center, could you do it? It's probably not a question that you've ever been asked, but it's an important thing to know.

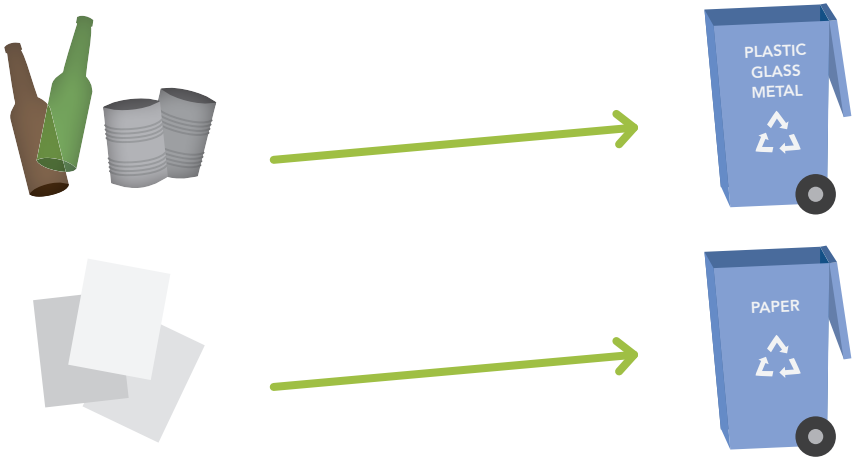
Unfortunately, recycling isn't as straightforward as searching for a recycling symbol on a product. Many packages wear the "recycle" symbol, but require a special recycling process that may not be available in your area. In our hectic lifestyles, this is something that many people don't realize before tossing an item into the recycling bin, or choosing to toss it in the trash. This document will help answer some of the questions you may have on recycling in Michigan.

WHAT IS SINGLE STREAM RECYCLING?

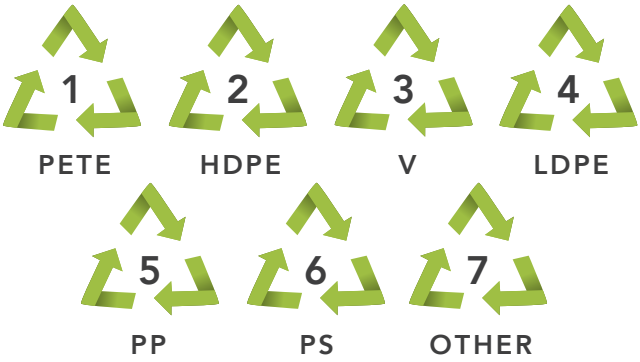
There are two common types of recycling collection program designs. "Single stream recycling" allows you to put all of your recyclable items into a single cart, often including plastics, metal, fiber materials (paper, corrugated cardboard, paperboard, etc.), and glass. Due to the convenience factor, which tends to increase participation in the program, single stream recycling is a continually growing recycling service and is common in large population areas.

WHAT IS DUAL STREAM RECYCLING?

"Dual stream recycling" is a more traditional method of recycling that is still very common across the state of Michigan. Dual stream recycling requires individuals to sort their recyclables into different categories, commonly requiring fiber materials (paper, corrugated cardboard, paperboard, etc.) to be separated from plastics, metal, and glass.



PLASTIC SYMBOLS



WHAT DOES THE NUMBER SYMBOL ON PLASTIC REALLY MEAN?

TO most people, this code will look very familiar. It's often assumed that this symbol is identifying an item as recyclable, but it was actually introduced by the Society of Plastics Industry (SPI) to identify the plastic resin content of bottles and containers. This labeling system is known as a "Resin Identification Code (RIC)" and is used to identify seven types of plastics.

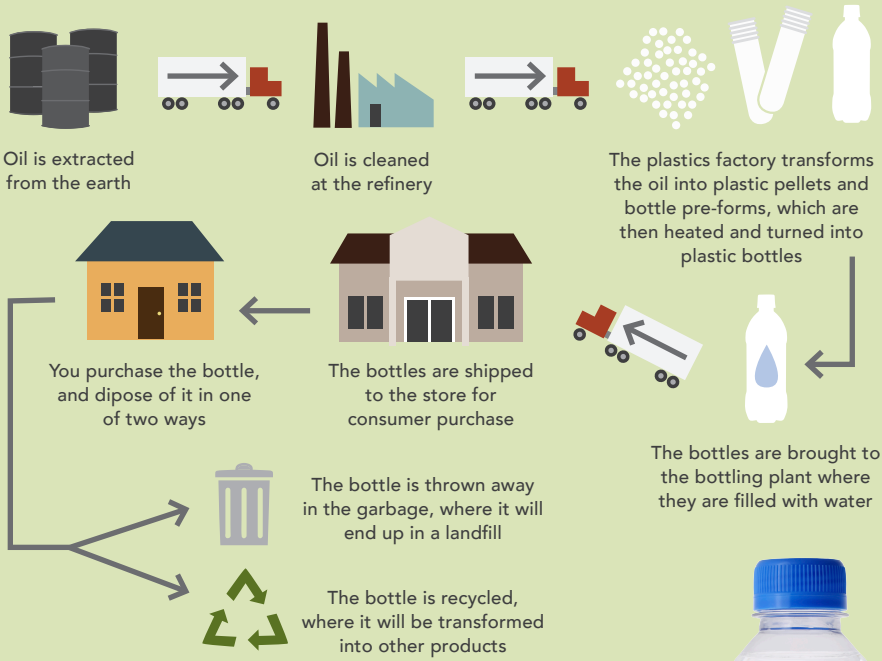
Even though the RIC has a recycling symbol, seeing it on a piece of plastic doesn't necessarily mean it can be recycled through your local recycling program. Most recycling facilities collect plastics #1 and #2, but plastics #3-6 are difficult to recycle and some recycling centers do not process them. Plastic #7, which refers to plastic with more than one resin type incorporated, is even more difficult to recycle and is commonly excluded from recycling collection.

Before you toss that plastic into the recycling bin, be sure that you understand what type(s) of plastic your recycling program collects. Otherwise, you are just sending it on a longer trip to the landfill, increasing costs and using additional energy to get it there!

WHY SHOULD I RECYCLE?

It probably takes most people less than 30-minutes to drink a 16-ounce beverage. In Michigan we all know there is a ten-cent incentive to not throw away used beverage bottles, but are the other benefits clear? What about the other recyclable materials that we have in our homes?

As an example, take a minute to consider the life of a plastic bottle:



Did your eyes glaze over? It is a complicated process to create a bottle that is typically used by a consumer for less than 30 minutes. When that beverage bottle is placed in the garbage can, its life is over, being buried in a landfill where it will take over 400 years to decompose. If that beverage bottle is recycled, it can be transformed back into the same plastic pellets used to make it in the first place.

While it takes energy to transport and recycle materials, the energy put into recycling supports a "loop" in which natural resources do not go to waste. Before you place something in your garbage can, be sure to ask yourself - "Is this really garbage?"

CLEANING YOUR RECYCLABLES

WHY ARE FIBER MATERIALS SENSITIVE TO CONTAMINATION?

WE've all heard that it is important to provide clean and dry materials in our recycling bins, but is it a recycling myth that one glass container with leftover pasta sauce could ruin an entire load of recycling? It is possible, especially if you have a single stream recycling program and residue soaks into the fiber materials. Even if you don't have single stream recycling, recyclers rely on clean and quality materials to market to end use manufacturers. The higher the amount of residue and contamination, the lower the value of the recyclable materials, and the lower potential for those materials to be used in the production of new products. Some materials (such as plastics) can be cleaned during the recycling process, but not all. It is not energy or cost efficient to collect recyclables that are contaminated and have minimal end value or potential use. Always remember to make sure the recyclables you put in the bin are free of excessive residue.

Fiber materials are especially sensitive to contamination and need to be in clean condition to recycle into new fiber products. When fiber materials are recycled they are mixed with water and turned into slurry referred to as "paper pulp". When residues such as food, grease, or beauty products soak into the fiber materials during recycling collection, they follow the paper pulp through the recycling process. During the final steps of the recycling process, the water is squeezed out and fibers are bound. Since the residues cannot be separated out, food byproducts and grease can cause holes, thin spots, and other damage to the recycled product.

This does not mean you should stop recycling your fiber products! Paper, for example, is one of the most commonly recycled items, and there are manufacturers committed to using recycled content in their products. Recycling paper saves water, energy usage, and natural resources.

RECYCLING TIP

Though many pizza boxes instruct you to recycle, the food and grease left on the bottom of the pizza box can cause contamination in the recycling process. You can still recycle the top of the pizza box, just cut off the bottom of the box that is contaminated with grease and cheese.

CONTAMINATION & "WISHFUL RECYCLING"

Recycling is good for the economy and for the environment, and a successful program starts with best practices and clean recyclables. There are three types of contamination that can affect the quality of a batch of recyclables.

- Placing garbage into your recycling bin
- Contamination from excessive residue left in containers
- Material contamination: when wrong "possibly recyclable" items are placed in the traditional curbside or drop-off recycling bin

"I am not sure if this item can be recycled, but I'll throw it in anyway, just in case…" This is a statement that most avid recyclers have said at one point or another. This habit is referred to as "wishful recycling," and while intentions are good, when you put materials into the recycling bin that shouldn't be there, you may slow down the entire recycling process and simply send that item on a longer trip to the landfill. Most recycling facilities use manual sorting and/or machines to sort the recyclables. The more inappropriate items in the bin, the more inefficient and difficult sorting is for workers performing the sort by hand. Some items can damage or get caught in the machinery, causing an entire plant to shut down while the materials are removed and the machinery is fixed (plastic bags are often a culprit of this issue). Always refer to the list of acceptable items from your recycling service provider. Do your best to follow the guidelines provided to you, and you can help increase the value of recyclables provided by your community!

COMMONLY MISUNDERSTOOD ITEMS

IF an item is not included on your list of acceptable items, it probably cannot be recycled through your program because they cannot manage it appropriately. Some recycling programs in Michigan do accept some of these items at drop-off sites or through special collection events, so be sure to check with your community or service provider for options in your area.

CARTON CONTAINERS

- Although often mistaken for paperboard, they are actually made of two or three materials layered together (paper, plastic, and aluminum).
- Manufacturers have joined together as the "Carton Council" to increase access to carton recycling programs across the United States. Many programs in Michigan now accept carton containers, but be sure to double check before you put it in your bin.

PAPER COFFEE CUPS (COMMONLY UNACCEPTED)

- Paper cups are lined with a thin layer of plastic or wax coating to keep liquid from leaking through the cups.
- Processing facilities only exist in select locations, and are not common.
- Consider a reusable mug or compostable paper cups.

PLASTIC BAGS AND FILM PACKAGING

- Some recycling facilities are not designed to remove plastic bags prior to the recycling stream. When not properly removed, they can get tangled in machinery and processing equipment.
- Check near the entrance of your local grocery store for a drop-off bin.
- Minimize your use of plastic bags by taking along a few reusable bags when you go to the store.

EXPANDED POLYSTYRENE (EPS) (STYROFOAM)

- Many programs don't accept EPS because of it's limited compaction ability, light weight characteristics and bulkiness. Additionally, frequent use in the food industry presents a higher risk of contamination.
- Check with your local recycling program for information on drop-off centers or special collection days in order to recycle styrofoam.

BULKY RIGID PLASTICS (COMMONLY UNACCEPTED)

- Includes such items as 5-gallon buckets, lawn furniture, laundry baskets, crates (such as milk crates), clothes hangers, and plastic children's toys and outdoor play equipment.
- Many recycling facilities aren't designed to handle and process these materials. Check with your local recycling program to see if they are equipped to take them. If your recycling program does accept them, be sure to remove any batteries.
- If the items are still in usable condition, consider donating them for re-use.

CLOTHING AND TEXTILES

- Each year, the average person throws away over 50 lbs. of clothing that could be reused or recycled. Discarded clothing accounts for about 10% of our waste stream.
- When possible, donate to a local store or charity.
- While curbside clothing recycling is uncommon, a few places in Michigan offer this service. If your area does not have a curbside program for textiles, see if your local recycling program has a designated drop-off receptacle.

BATTERIES

- It is important for batteries to be recycled properly due to toxicity from heavy metals, such as lead, mercury, cadmium, and nickel.
- Batteries are not regularly collected through curbside recycling, and if you take your household recycling to a drop-off center, batteries typically shouldn't be recycled with other commingled recyclables.
- Battery recycling is often offered through a special receptacle at recycling drop-off centers, household hazardous waste collection events/locations, or at other local businesses.

RECYCLING SAFETY SPOTLIGHT: MEDICAL WASTE AND PERSONAL HYGIENE ITEMS

IF there is one item that you should never include in your recycling bin, it is used medical devices or personal hygiene items. Always remember that there are people employed at recycling centers, hired to sort or otherwise manage the recyclables you place in your bin at your home or at your work.

Including used syringes/sharps (even if the syringes are disassembled), diapers, or other medical waste/personal hygiene items is a human health risk to those working at the facility. Be respectful of recycling facilities and their workers. For more information, contact your local recycling service provider or find sharps disposal options on the EGLE Drug Takeback Map at *Michigan.gov/egleDrugDisposal*.

RESOURCES

The Carton Council
RecycleCartons.com

US EPA
EPA.gov/recycle
EPA.gov/smm

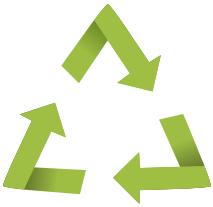
How Stuff Works
Science.howstuffworks.com/environmental/green-science/polystyrene-recycling.htm

Earth 911
Earth911.com/news/recycling-mystery-milk-and-juice-cartons
Earth911.com/home-garden/what-not-to-put-in-the-bin

Made How
Madehow.com/volume-1/soda-bottle.html

RECYCLING CHEAT SHEET

Fill out this form and keep it near your at-home recycling station.



- Do not include everyday "trash" in recycling bin
- Be sure to clean/rinse out recyclables of excessive residue
- Do not include any medical waste or personal hygiene items
- Contact your local recycling center for more information on what you can and cannot recycle
- Don't nest materials with unlike materials (ie. tin can inside a cereal box)

WHAT CAN YOU RECYCLE IN YOUR COMMUNITY?

Put a C next to items you can recycle curbside, and a D next to items you can recycle at your local drop-off center.

- ☐ 1 – PET (soda bottles, water bottles, salad dressing, etc.)
- ☐ 2 – HDPE (milk jugs, detergent, household cleaner bottles, etc.)
- ☐ 3 – V (or PVC) (window cleaner, shampoo bottles, cooking oil, etc.)
- ☐ 4 – LDPE (dry shopping bags, etc.)
- ☐ 5 – PP (yogurt containers, ketchup bottles, etc.)
- ☐ 6 – PS (egg cartons, some food containers, etc.)
- ☐ 7 – Other (five gallon buckets, plastic toys, some food containers, etc.)
- ☐ Metal (aluminum, tin, steel, etc.)
- ☐ Paper (envelopes, office, news)
- ☐ Cardboard
- ☐ Paperboard
- ☐ Carton Containers
- ☐ Phone Books
- ☐ Magazines/Catalogs
- ☐ Glass
- ☐ Paper coffee cups
- ☐ Candy wrappers
- ☐ Plastic bulky items
- ☐ Other: _____

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For more information visit ***Michigan.gov/egleRecycling*** or call the Environmental Assistance Center at 800-662-9278.

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