

## OVERVIEW

Plastics play a major role in our modern lives due to their convenience, versatility and low costs. Many manufacturers choose to package their products in plastic rather than glass because of its light weight, durability, abundance and ability to be recycled.

Plastic is extremely common because of its ability to:

- Be molded into any shape
- Resist impact damage
- Maintain either a rigid or flexible state
- Resist heat or cold
- Resist sunlight
- Serve as a barrier to oxygen or moisture
- Be recycled



Wind-blown plastics at a landfill.

Because plastic is relatively inexpensive, tends to blow in windy conditions when unsecured and takes up a great amount of space, some communities don't easily recognize the value of recycling these materials. As such, valuable commodities are being buried in landfills across Montana. Problems with ignoring plastics recycling include wasting a petroleum-based resource that has value, and allowing this lightweight commodity to continue to blow in the wind (look around most landfills and notice large amounts of plastic EVERYWHERE).

## DEFINITIONS

**Quality Control** is essential for effective plastics recycling. There are many different types of plastic. For community recycling programs serving households and restaurants, plastic means "**container plastics**," jars, bottles and trays that are stamped with a number between one and seven. They are also generally "non-durable" goods that could be purchased at a grocery store – not plastic patio furniture or plexiglass. Plastic containers can be clear, natural or colored. **Natural** plastics are a milky translucent color, such as a gallon-size water jug. **Colored** plastics are solid white or another color, and do not allow light to pass through.

*Plastics without a number, or not manufactured as a container (bottle, tray, clamshell, etc.), are usually not accepted for recycling. Check with your local recycler for rules.*

## CAPS – ON or OFF

Generally, caps **MUST** be removed from plastic bottles before being placed in a recycling bin. Although caps are sometimes recyclable, they are designed to create a seal on the container and that causes several problems during recycling. Caps trap air and liquids inside of bottles, preventing them from being compressed during the baling process. If a cap bursts from a container during baling, it could cause bodily harm as it travels at high speed. Liquid trapped in containers may also contain mold or bacteria, which pose additional hazards to workers.

**The bottom line:** EMPTY & RINSE all plastic containers. Discard caps in trash bins.

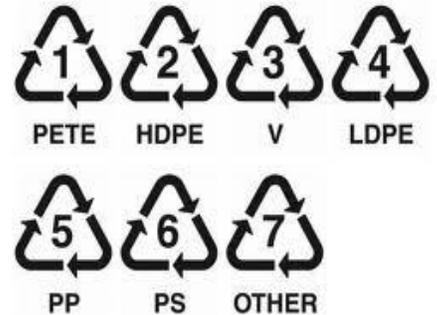
## ■ NUMBERS & THEIR MEANING

Plastics are chosen as packaging for the specific properties they exhibit. It is not always easy to determine a container's type based on appearance and a close examination may be needed to identify its composition. Plastic type can be identified by the number located inside of the chasing arrows symbol. This symbol is only meant to identify the plastic type and does not necessarily imply that it is acceptable for recycling in all areas. Pay attention to signs and place only accepted materials in recycling bins.

## ■ NATURAL VS. COLORED:

#1 Plastic is usually clear, but not all clear plastic is #1 (PETE). Some recyclers accept natural and colored plastics mixed together, while others require them to be separated or only accept one type.

Example: A translucent gallon-sized water jug is a "natural" #2 HDPE container. Laundry detergent bottles are typically colored #2 HDPE containers.



## ■ NECK DIAMETER:

Not all #1s and #2s are created equal. Many dairy containers (yogurt, sour cream, etc.) have wider tops than bottoms. These containers are formed through an injection-molding process rather than the blow-molding process that forms water bottles. Additives used during these processes differ, which makes the chemical makeup of each of these containers different. This means that the recycling process would have to be different to break down the different additives. Right now, our recycling infrastructure can only handle blow-molded containers.



## ■ PLASTIC BAGS:

Plastic bags are recyclable, but only with select companies that can handle them appropriately. Most recyclers do not collect plastic bags because, when mixed with other plastics, they easily wrap around machinery parts, causing delays in processing, added expense and hazards for workers.

It is becoming more common for grocery stores to accept plastic bags for recycling. Check with your local store, or eliminate plastic bags entirely by bringing reusable bags.

**Recommended PPE** (Personal Protective Equipment): Eyeglasses and gloves

Hazards during baling include:

- Flying caps during compression
- Bacteria and mold from container residues
- Pinched fingers in equipment
- Sharp plastics and equipment
- Popped baling wire



**Front Barrier:** Plastics tend to rebound slightly after being compressed and may fall out of a vertical baler without a retention system in front. This can be as simple as a sheet of cardboard placed vertically against the front wall of the baler. The cardboard barrier can be moved upward as the baler fills with material.

**End Caps:** Before loading plastics into a vertical baler, lay a sheet of cardboard to completely cover the inside bottom of the baler. When the baler is full, place cardboard over the top of the bale before the final compression. The cardboard on each end will help hold the bale together when it is removed.

## **SPECIAL EVENTS – Cheap & Easy**

Sporting events, concerts, festivals, and similar gatherings usually produce an unusually large amount of waste materials – mostly recyclable bottles, cans and cups. A couple simple management techniques can be adopted to successfully divert many of these recyclable materials and prevent trash bins from overflowing.

### Improvised Bins

Many facilities choose not to keep dozens of recycling bins in storage, waiting for a few large, temporary events. Instead, regular trash bins can be converted to recycling bins by adding a modified lid that encourages collection of only cans and bottles. Simply cut a hole in the center of a lid, just large enough to allow cylindrical containers to fall through. Be sure to add signs on and around the bin so guests know to place only recyclables inside.

### Cup Collectors

Large-diameter PCV pipe can be attached to recycling bins for collection of single use plastic cups. Included signs that ask guests to insert cups upside down, so they stack together (liquids can be emptied on grass or in trash bins).

# Additional Resources & Recent Stories

Moving Missoula Toward Zero Waste

<http://issuu.com/sustainablebusinesscouncil/docs/towardzerowasteguide-final>

MT Department of Environmental Quality: <https://www.deq.mt.gov/Recycle/Plastics.mcp>

American Chemistry Council: <http://plastics.americanchemistry.com/>

The Association of Postconsumer Plastics Recycling: <http://plasticrecycling.org/>

Recycle Your Plastics: <http://recycleyourplastics.org/>

Plastics Make It Possible: <http://plasticmakeitpossible.com/category/living-green/recycling-reusing/>

**More Recycling News & Articles at:**

<https://www.facebook.com/RecycleMontana>

## Recycle Montana

Our mission is to strive to be the leading statewide voice of recycling and an ongoing resource to advise, support and educate Montanans on waste reduction opportunities. Recycle Montana works to increase recycling in Montana through education and building coalitions between communities, schools and recyclers. Visit [www.RecycleMontana.org](http://www.RecycleMontana.org) for more information.



**RECYCLE MONTANA**

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