



APR GUIDE FOR PLASTIC SORTING BEST MANAGEMENT PRACTICES

PURPOSE

Plastics in today's waste stream come in a wide variety of resins and form. Collection practices of plastics for recycling also vary greatly. Optimizing plastic recycling collection efforts requires an understanding of what plastic material is in the recycling stream. Consequently, municipal and state officials regularly sort plastics as a key step towards improving their recycling program. Unfortunately, without plastic sorting standards, these valuable waste sorts do not necessarily result in consistent or comparable data for broad optimization across multiple programs nationwide.

In an effort to address this lack of plastic sorting standardization, The Association of Plastic Recyclers (APR), the American Chemistry Council (ACC), and More Recycling, with input from key waste composition consultants, developed The APR Guide for Plastic Sorting Best Management Practices (BMPs). Facilitating greater consistency in data collection across studies optimizes plastic recycling in North America and beyond.

This guide provides 3 levels of sorting categories depending on the required detail of data. The three levels of sorting have been developed so that Levels 2 and 3 categories can be condensed into Level 1 categories so that all studies, regardless of which sorting level is used, can be compared. This flexibility allows all studies that utilize the sorting categories to draw comparisons, develop trending data, and improve overall knowledge about plastic waste composition.

THE PLASTIC SORT LEVELS ADDRESS A VARIETY OF FACTORS CONSIDERED WHEN WASTE/ PLASTIC SORTS ARE CONDUCTED, INCLUDING:

- Budget
- A community's specific recyclables list
- Anticipated waste stream
- Items considered problematic



Created to facilitate better data collection through consistent use of terminology and categorization, this guide defines plastic sorting categories by resin and form. The categories align with plastic recycling commodities that are traded once the material has been sorted at a MRF. The terms also align with annual plastic recycling tracking. If a study is not in a position to change categories, this guide may be utilized to add more clarity to existing category titles.

This guide is not intended to educate residents about plastic recycling. For more assistance with plastic recycling please see the Helpful Links on page 9.

HOW THE GUIDE WAS DEVELOPED

The plastic sort categories were developed from research of multiple waste composition studies/plastic recycling data collection, review by an APR Rigids Group Subcommittee and vetted with a number of waste composition consultants. This guide is truly a collaborative effort.

USING THE GUIDE

Resin and product type are important for plastics. This guide details three sorting levels and five major sort categories; all three sort levels, regardless of depth of detail, can roll into those five categories.

Implementing the major categories at a minimum is recommended. Although Sorting Level #3 studies may not be possible for all studies, if more studies incorporated the same major categories it could result in significant improvements in data comparison. If consistent terms are used, other data can be applied to new studies. Aggregated data from multiple studies can inform choices about how municipalities optimize recycling programs.

PLASTIC SORTING CATEGORIES

	Sorting Level #1	Sorting Level #2	Sorting Level #3
#1 PET & #2 HDPE Bottles/Jars	3	3	3
#3-7 Bottles & Small Rigid Plastics	1	8	18
Bulky Rigid Plastics	1	1	1
Film & Flexibles	2	3	4
Other Plastics	1	2	3
Total	8 Sorts	17 Sorts	29 Sorts

Q + A

WHAT IF THE STUDY NEEDS TO TRACK A BREAKOUT NOT LAID OUT IN THE SORT LEVELS? If your community needs more detailed categories for some items, it is helpful to lump the other categories based on our higher level groupings, e.g. if you sort out PET and HDPE beverage bottles, it is good to have another PET bottles/jars and other HDPE bottles/jars categories so that when others are using this information, or you are trying to compare to other areas, you can lump all PET bottles together (PET beverage bottles + other PET bottles).

1) #1 PET AND #2 HDPE BOTTLES/JARS

PET (#1) and HDPE (#2) blow-molded bottles and jars less than 2 gallons in size (e.g. a 2.5 gallon water jug is too large and should be categorized as a plastic bulky item) that have a neck or mouth that is smaller than the base including closures (caps, lids, and rings).

Q + A

WHY ARE JARS WITH BOTTLES? Jars are included in this category, as they are also blow molded and most commonly sorted together with bottles at a MRF and sent to market. It is best to sort jars with bottles.

2) #3-7 BOTTLES & SMALL RIGID PLASTICS

Remaining non-PET/HDPE bottles/jars/canisters (#3-7 bottles) and ALL resins of non-bottle rigid containers, other packaging and non-packaging, including rigid plastic that is less than 2 gallons in size (e.g. 2.5 gallon water jug is too large and should be categorized as a plastic bulky item). A large percentage of this category is PP bottle and non-bottle rigid and PET non-bottle rigid plastic. It is preferable to include lids and other loose caps and closures >2" in this category and all other primarily plastic products (packaging and non-packaging) >2".

Q + A

THERMOFORMS CATEGORY? Thermoforms go beyond clamshell packaging and include many tubs and cups. Plastic bale sorts have used a category of clamshells, trays, etc.

Q + A

“LIDS” AND “CAPS AND CLOSURES” GO WHERE? If Lids, caps and closures are still attached to the package, they should be included in whatever category the package they are attached to belongs to (e.g. PET bottles with attached PP or PE cap). If lids caps and closures are separated or loose and >2” include then in #3-7 Bottles and Small Rigid. If they are separated or loose and < 2”, they should be included in the Other Plastic category.

3) BULKY RIGID PLASTICS

Large (>2 gallons) primarily plastic item (e.g. buckets, laundry baskets, large primarily plastic toys, lawn furniture)

Q + A

BROKEN PIECES OF BULKY PLASTIC ITEMS?? Include pieces of bulky items with Bulky Rigid Plastics (items larger than a 2 gallon jug or bucket).

4) FILM & FLEXIBLES

PE (polyethylene) plastic bags and wraps e.g. retail, produce, newspaper, bread, dry cleaning bags, storage bags, shipping envelopes, product wrap on cases of water, paper towels, other non-PE film packaging, candy wrappers, chip bags, PP grape bags, as well as flexibles packaging like pouches and woven grain bags.

Q + A

WHICH FILM PLASTIC ARE PE/RECYCLABLE FILM (BAGS AND WRAP)? The PE plastic bags and wraps examples provided here as well as some additional examples on PlasticFilmRecycling.org.

Q + A

WHAT ABOUT POUCHES? Given the changing waste stream and the increase in this packaging type, pouches are a good addition to the list if possible.

Q + A

SHOULD GARBAGE BAGS BE SEPARATED? If able to break out garbage bags this is always helpful information, but if not, please keep separate from PE/Recyclable Film and Bags. This allows the recyclable film to remain separate from the non-recyclable film, given garbage bags are intended for the trash stream.

5) OTHER PLASTIC (INCLUDING FOAM PS)

This category would include all other plastic products or predominantly plastic items, including all items under 2", foam, twine, strapping and multi-material products (e.g. toothbrushes, razors, dust pan brushes).

Q + A

SHOULD WE SEPARATE FOAM PS, TRANSPORTATION PACKAGING (BLOCK AND SHAPE) OR FOODSERVICE ITEMS? This is an area of interest to further document where possible. There are other foam products, but they are not as prevalent in the curbside stream like Foam PS.

Q + A

ELECTRONIC TOYS? If it has a substantial amount of electronic parts, it should go to an electronic category.

INDUSTRY COLLABORATION

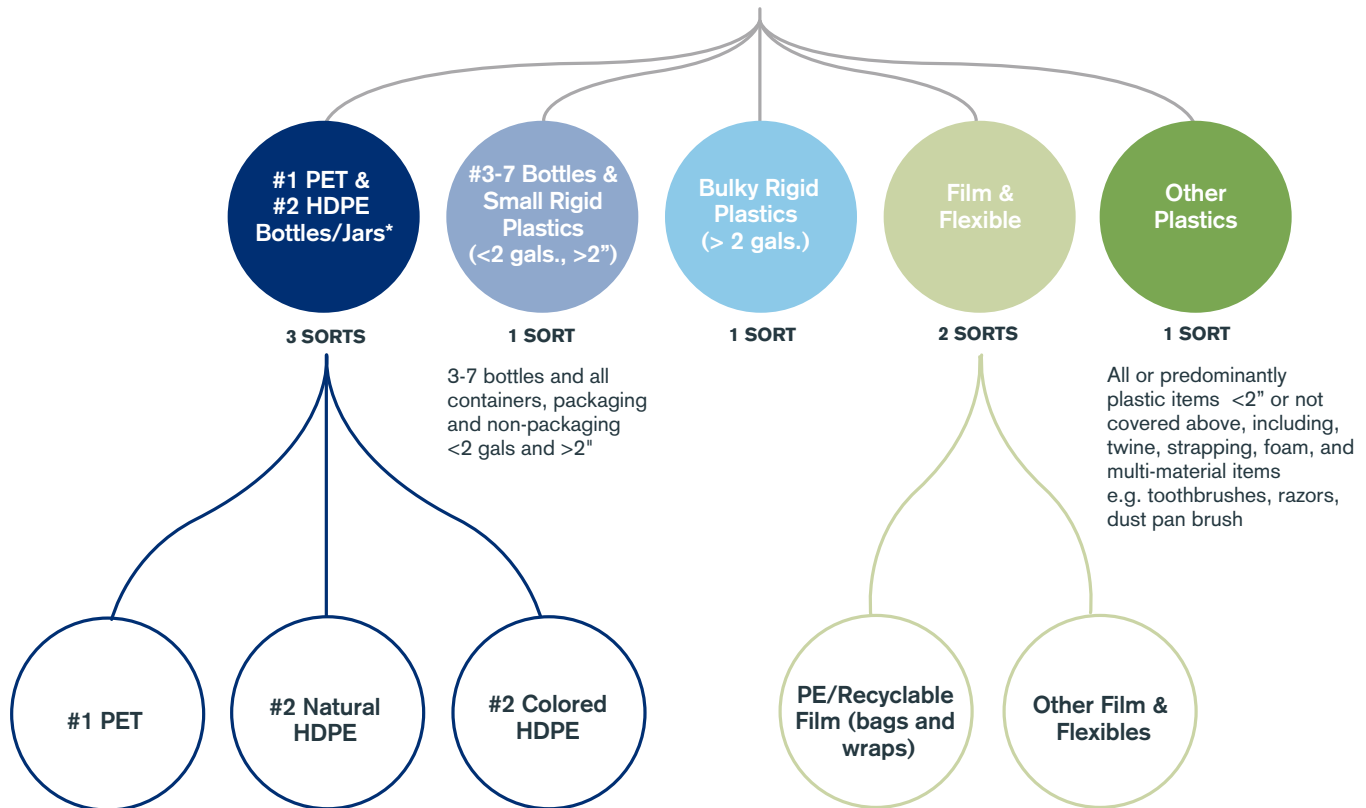
With the goal of incorporating the good counsel of industry experts who are regularly conducting waste composition studies, the following companies were contacted for guidance. Their time and thoughts are truly appreciated.

- **CASCADIA CONSULTING GROUP** (<http://www.cascadiaconsulting.com/>)
- **MSW CONSULTANTS** (<http://www.mswconsultants.com/>)
- **RSE USA** (<http://rse-usa.com/>)
- **RRS** (<https://recycle.com/>)
- **SCS ENGINEERS** (<https://www.scsengineers.com/>)



Sorting Level 1

8 SORTS



- | | | | |
|---------|----------------------------|----------|---------------|
| #1 PET | Polyethylene Terephthalate | #5 PP | Polypropylene |
| #2 HDPE | High Density Polyethylene | #6 PS | Polystyrene |
| #3 PVC | Polyvinyl Chloride | #7 Other | |
| #4 LDPE | Low Density Polyethylene | | |

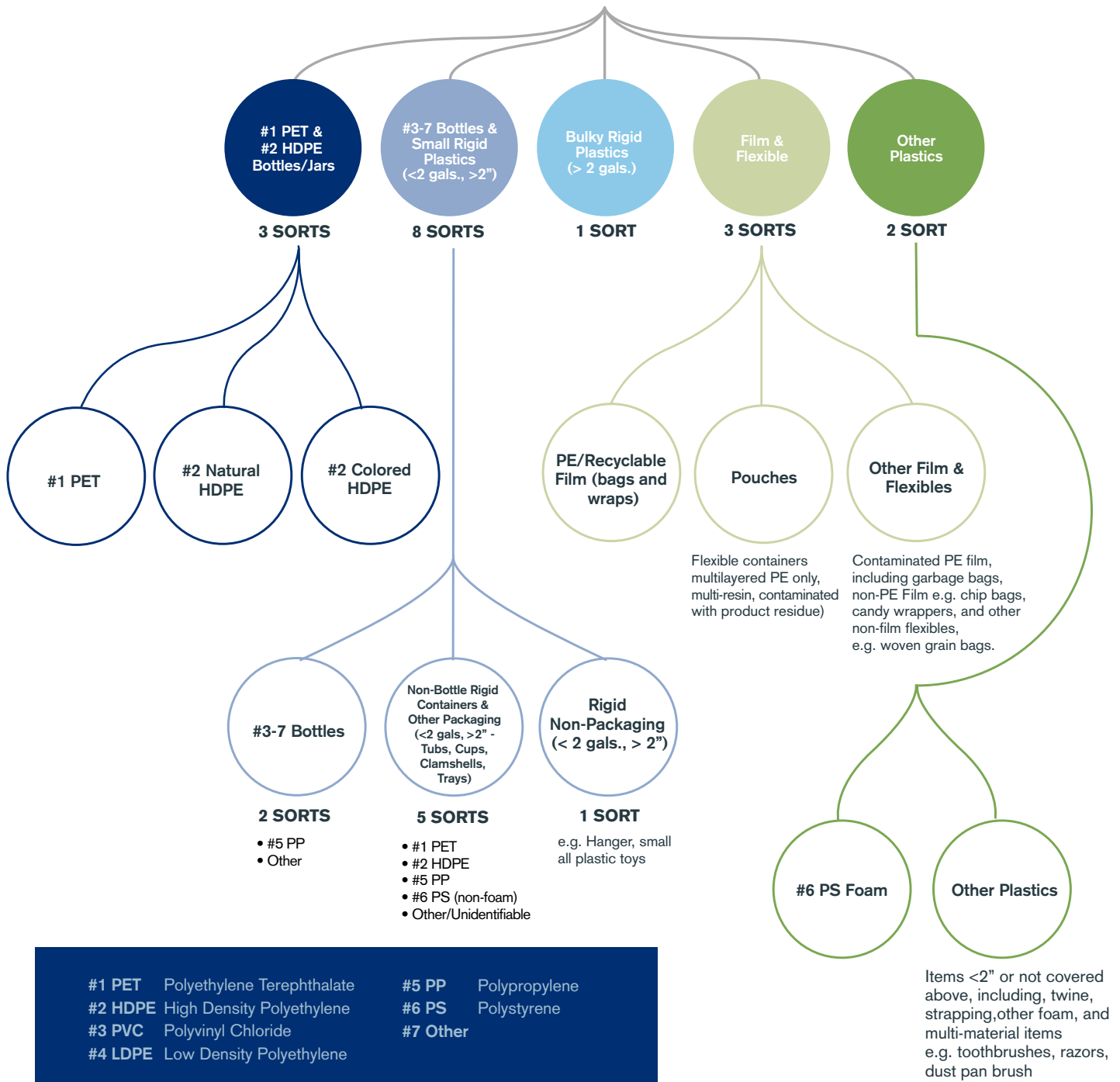
Contaminated PE film, pouches, non-PE Film - chip bags, candy wrappers, and other non-film flexibles, e.g. woven grain bags

*Optional Add Ons – Bottle Bill related sorts



Sorting Level 2

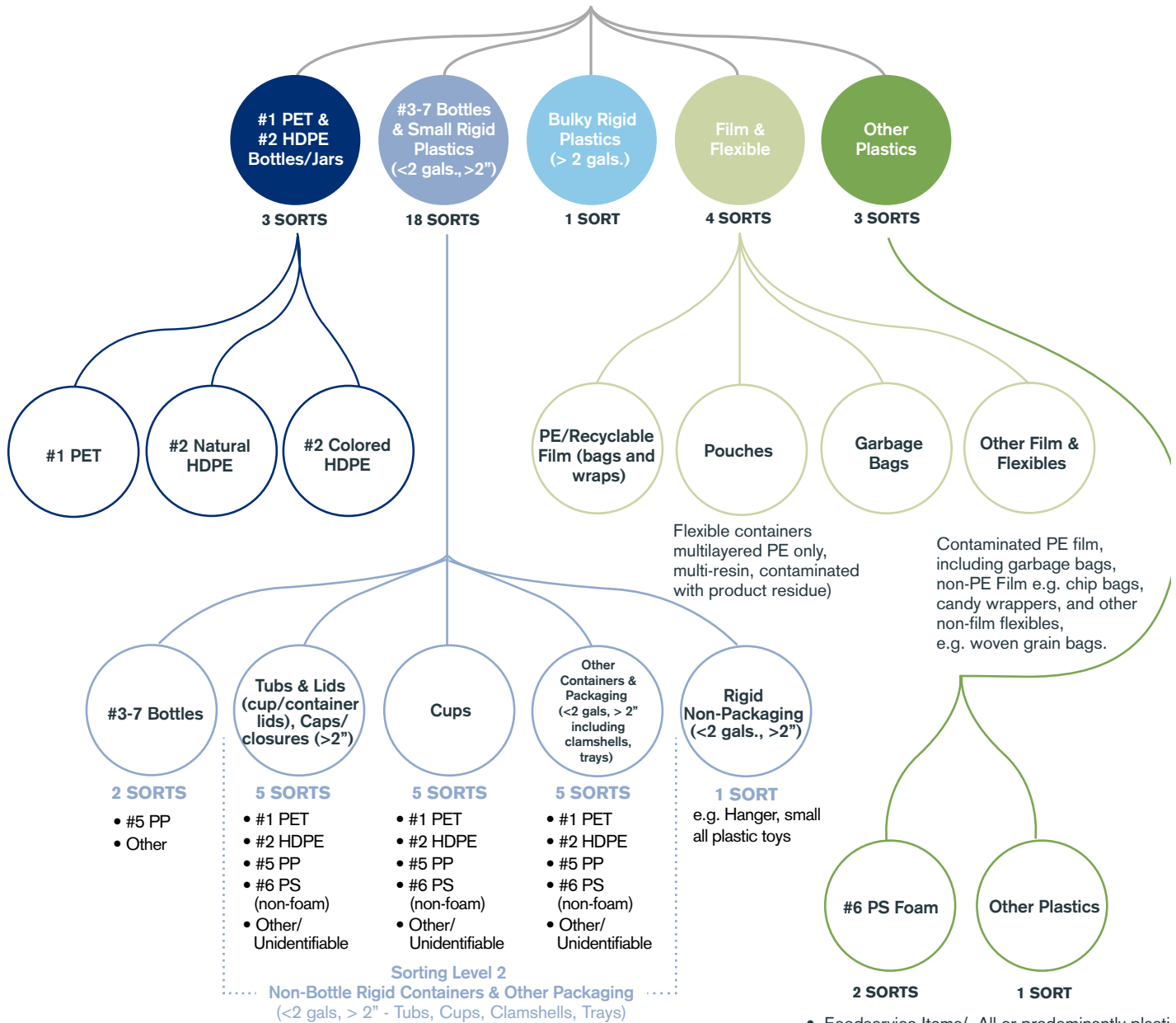
17 SORTS



#1 PET	Polyethylene Terephthalate	#5 PP	Polypropylene
#2 HDPE	High Density Polyethylene	#6 PS	Polystyrene
#3 PVC	Polyvinyl Chloride	#7 Other	
#4 LDPE	Low Density Polyethylene		



Sorting Level 3
29 SORTS



#1 PET	Polyethylene Terephthalate	#5 PP	Polypropylene
#2 HDPE	High Density Polyethylene	#6 PS	Polystyrene
#3 PVC	Polyvinyl Chloride	#7 Other	
#4 LDPE	Low Density Polyethylene		

RECYCLING BEYOND BOTTLES TOOLKITS

<https://plasticsrecycling.org/recycling-beyond-bottles>

The APR strives to expand the recycling of plastic material through Toolkits for local solid waste management and recycling officials to enhance their collection programs, increase the amount of material collected by those programs, and add value to the bottom line. Each of the toolkits (Non-Bottle Containers, Caps-On, Bulky Rigid, Bags, Wraps, & Films) provide a variety of resources to support recycling rigid plastics beyond bottles including: Success Stories, Market Information, Education, Flowcharts and Videos, Remanufacturing Information, and Frequently Asked Questions.

MODEL BALE SPECIFICATIONS

<https://plasticsrecycling.org/markets/model-bale-specs>

APR Model Bale Specifications provide a benchmark to suppliers, for bales accepted by APR members, and to facilitate communications between bale producers (MRFs) and purchasers (PRFs and plastic reclaimers). They are not meant to replace the specifications of individual buyers, many of whom may have different “allowables” in terms of contents and bale sizes than these models.

PLASTIC RECYCLING TERMS & TOOLS

<https://www.recycleyourplastics.org/termsandtools>

This site helps community recycling programs more effectively educate their residents about which plastics to recycle. The Outreach Builder tool lets you choose common plastics recycling terms that best fit your program, then download free images for your outreach materials or build a custom flyer that shows what can and can't be recycled in your community.

PLASTIC FILM RECYCLING

<https://www.plasticfilmrecycling.org/>

This site provides information community members need to recycle plastic film – from knowing what's recyclable to how and where to recycle it. Plastic film needs to be clean and dry in order to be recycled. Plastic film is recycled at drop-off locations in almost every community in the U.S.

APR IMAGE GALLERY

<https://plasticsrecycling.org/resources/image-gallery>

APR developed this gallery of images for plastic recycling stakeholders use to enhance presentations and educational tools. Although each image is labeled as the resin type most often associated with that container type, on occasion those items may be manufactured from other resins.