Community Recycling Program Acceptance

Taxonomy Overview

National Recycling Database

September 2024

The Recycling
Partnership

Introduction

The Recycling Partnership (The Partnership) has developed a comprehensive national database of local recycling programs across the United States. The National Recycling Database (Database) indicates what materials are accepted for recycling by more than 9,000 programs, covering all communities that have over 2,500 households.

The Database serves two purposes. First, it characterizes the acceptability of packaging types and individual items in community programs. Second, the Database helps inform the recycling industry (e.g., policymakers, waste management experts, material producers, nonprofits, retailers, and brands) about the acceptance rates of specific package types and materials across communities.

The terminology used to describe packaging varies across resident educational materials and industry. To track acceptance rates for materials reliably and comprehensively, it is necessary to standardize the use and application of packaging terms.

To address this need, The Partnership has developed the Community Recycling Program Acceptance Taxonomy (Acceptance Taxonomy). The Acceptance Taxonomy comprises packaging terms drawn from numerous industry and government sources. This document describes the research methodology, development, and application of recycling categories to track acceptance in the Database.

Research and Sources

In the absence of a national standard, The Partnership has leveraged sources from across the industry and directly from community guidelines. Where appropriate, we have standardized the categories across resin or material type.

One of the primary studies that has categorized packaging and its acceptability across the United States has been conducted by the Sustainable Packaging Coalition (SPC). The SPC completed their *Centralized Study on Availability of Recycling* in 2015 and updated the research in 2021.[i] These studies covered a wide variety of plastic, metal, glass, and paper packaging. The Database's Acceptance Taxonomy uses categories similar to those presented in the SPC methodology or creates more detailed categories, as presented in Table 3.

A second study leveraged is the American Forest and Paper Association (AF&PA)'s 2021 *Recycling Access Study*,[ii] which focused on paper packaging and printed paper. Standardization was created where overlaps existed between the SPC and AF&PA's categories.

A third key source includes the annual reports published by the Association of Plastic Recyclers (APR) on the recycling rates for plastic bottles and non-bottle rigid plastic. These reports were consulted for terminology and to ensure compatibility.

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[i]Adam Gendell, Beth Coddington, et al. 2020-21 SPC *Centralized Study on Availability of Recycling*. Sustainable Packaging Coalition, GreenBlue, 2021, sustainablepackaging.org/wp-content/uploads/2022/03/UPDATED-2020-21-Centralized-Study-on-Availability-of-Recycling-SPC-3-2022.pdf. Accessible as of 16 Sept. 2024.

[ii]2021 AF&PA Access to Recycling Study | American Forest and Paper Association." *Afandpa.org*, 2021, www.afandpa.org/statistics-resources/2021-afpa-access-recycling-study. Accessible as of 16 Sept. 2024.

Other sources leveraged include:

- Association of Plastic Recyclers (APR) – model bale specifications[iii]

- U.S. Environmental Protection Agency (EPA) – 2018 Solid Waste Facts and Figures report[iv]

- Foodservice Packaging Institute (FPI) – Market Reports[v]

- Flexible Packaging Institute (FPA) – Market Reports

- Can Manufacturers Institute (CMI) – Sustainability Reports[vi]

- Glass Packaging Institute (GPI) – Sustainability Reports[vii]

- Community Guidelines (CG) – Individual community websites

Acceptance Taxonomy

The Acceptance Taxonomy is composed of two main categories, each of which was developed leveraging comprehensive and distinct sources.

- **Material Guideline Categories:** Broad categories of materials commonly acknowledged in community acceptance lists, such as plastic bottles and metal cans.

- **Recycling Categories:** The Recycling Categories are the core data element of the Database. Subcategories of Material Guideline Categories commonly acknowledged in community acceptance lists that include both packaging and products. The Database stores recycling categories that are either accepted in local recycling programs (curbside and drop-off) or are considered contaminants. For example, recycling categories such as corrugated cardboard and aluminum cans are stored with a yes (accepted) or no (contaminant) for each community and program.

Taxonomies are reviewed at a minimum annually and as needed for new initiatives. As packaging and recycling categories evolve and further information becomes available, these categories will be updated.

[iii]*The Association of Plastic Recyclers | Model Bale Specifications*. The Association of Plastic Recyclers. https://plasticsrecycling.org/model-bale-specifications. Accessible as of 16 Sept. 2024.

[iv]US EPA,OLEM,ORCR,RCSD. (2018, September 20). *Facts and Figures about Materials, Waste and Recycling | US EPA*. US EPA. https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling. Accessible as of 16 Sept. 2024.

[v]*Market Research Resources* (2019, January 19) Food Service Packaging Institute. https://fpi.org/resources/market-research-resources/ Accessible as of 16 Sept. 2024.

[vi]*Steel Container Design Guide for Recyclability* (2022, September) Can Manufacturers Institute. https://www.cancentral.com/wp-content/uploads/2023/01/Can-Recycling-Guide-V15-1.pdf Accessible as of 16 Sept. 2024.

[vii]*Glass Recycling: A Quick Study*. Glass Packaging Institute. https://www.gpi.org/sites/default/files/content-files/Lists%20and%20Resources/Glass%20Recycling%20Guidebook.pdf Accessible as of 16 Sept. 2024.

Material Guideline Categories

Community recycling programs generally give broad guidance to residents on what materials they accept and what they do not accept. Material Guideline Categories are the most commonly used terms in communications to residents.

Table 1: *Material Guidelines and the Associated Recycling Categories*

Material Guideline Category	Example Keywords	Recycling Categories
Plastic Bottles (Jugs & Jars)	Soda bottles, narrow necked bottles, must have screw top, laundry detergent bottles	PET Bottles/Jugs & Jars HDPE Bottles/Jugs & Jars LDPE Bottles/Jugs & Jars PP Bottles/Jugs & Jars
Plastic 1 & 2 Bottles (Jugs & Jars)	Same as plastic bottles but limited to Plastic 1 & 2 or PET & HDPE only	PET Bottles/Jugs & Jars HDPE Bottles/Jugs & Jars
Plastic 1 & 2 Bottles & Containers	All Plastics 1 & 2, Any Plastic with 1 or 2, Only PET & HDPE	Plastic 1 & 2 Bottles & Jars + Clamshells, Cups, Tubs, Trays, and Lids for PET, HDPE
Plastic Bottles & Containers	Clamshells, tubs, cups, margarine tubs, yogurt cups, plastic containers, all household containers	Plastic Bottles + Clamshells, Cups, Tubs, Trays, and Lids for PET, HDPE, LDPE, and PP
Plastic Tubs	Tubs, margarine tubs, yogurt containers	Tubs and Cups for PET, HDPE, LDPE and PP
Plastic Clamshells	Plastic clamshells, plastic to-go containers, salad containers	PET Thermoforms and PP Clamshells and Trays
Plastics 1–7	All household plastics, all plastics, but must NOT reference plastic containers or bottles. Only for communities with VERY broad guidelines	Plastic Bottles & Containers plus individual categories explicitly mentioned
Bulky Rigid Plastics	Bulky rigid plastics, plastic lawn furniture, laundry baskets, plastic buckets, large household plastics	HDPE Bulky Rigid Plastics PP Bulky Rigid Plastics
Mixed Paper	Mixed paper, or multiple individual items	Magazines, Mail, Molded Fiber Nonfood packaging, Newspaper, Office Paper, Paperback Books, Paperboard, Phone Books
Cardboard	Cardboard, boxes, corrugated boxes	Cardboard, Pizza Boxes, Paper Bags
Metal Cans	Food and beverage cans, metal cans, aluminum, and steel cans	Aluminum Cans Steel/Tin/Bimetal cans
Glass Bottles & Jars	Glass food and beverage containers, glass bottles, and jars	Glass Bottles & Jars

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Some websites, especially in small or rural communities, will have even more general guidelines and list only metal, plastic, glass, and paper. In those cases, the Material Guideline Categories shown in Table 2 are assumed, with a preference for a conservative approach to what is noted as accepted.

Table 2: *General Categories, Material Guideline Categories, and the Associated Recycling Categories*

General Category	Material Guideline Categories	Recycling Categories
Plastic	Plastic Bottles	PET Bottles/Jugs & Jars HDPE Bottles/Jugs & Jars LDPE Bottles/Jugs & Jars PP Bottles/Jugs & Jars
Paper	Mixed Paper Cardboard	Magazines, Mail, Office Paper, Newspaper, Paperback Books, Paperboard, Cardboard, Pizza Boxes, Paper Bags
Metal	Metal Cans	Aluminun Cans Steel/Tin/Bimetal cans
Glass	Glass Bottles & Jars	Glass Bottles & Jars

Recycling Categories

The Recycling Categories are the core data element of the Database. Recycling Categories are subcategories of Material Guideline Categories commonly acknowledged in community acceptance lists that include both packaging and products. The Recycling Categories need to be detailed enough so that specific packages can be tied to a single Recycling Category and its acceptance in a local program can be determined.

Table 3: *Recycling Categories and Industry References*

Recycling Category	Industry References
PET bottles/jugs & jars	SPC, APR, EPA, CG
PET thermoforms	SPC, APR, EPA, FPI, CG
PET cups	SPC, APR, EPA, FPI, CG
PET lids	SPC, APR, EPA, FPI, CG
HDPE bottles/jugs & jars	SPC, APR, EPA, CG
HDPE tubs	SPC, APR, EPA, FPI, CG
HDPE cups	SPC, APR, EPA, FPI, CG
HDPE trays	SPC, APR, EPA, FPI, CG
HDPE lids	SPC, APR, EPA, FPI, CG
HDPE tubes	SPC, APR
HDPE bulky rigid plastics	SPC, APR, EPA, CG
PVC packaging	SPC, APR, EPA
LDPE bottles/jugs & jars	SPC, APR, EPA

Recycling Category	Industry References
LDPE tubs/cups	SPC, APR, EPA
LDPE lids	SPC, APR, EPA
PP bottles/jugs & jars	SPC, APR, EPA
PP clamshells	SPC, APR, EPA
PP tubs	SPC, APR, EPA, CG
PP cups	SPC, APR, EPA
PP trays	SPC, APR, EPA, CG
PP lids	SPC, APR, EPA
PP bulky rigid plastics	SPC, APR
PP pods	SPC
PP tubes	SPC, APR
PS foodservice packaging	SPC, APR, EPA, FPI, CG
PS lids	SPC, APR, EPA, FPI, CG
EPS foodservice packaging	SPC, APR, EPA, FPI, CG
EPS packaging	SPC, APR, EPA, CG
Other plastic packaging	SPC, APR, EPA
Plastic buckets (≥ 3 gal)	SPC, APR, EPA, CG
Nursery (plant) packaging	APR, CG
Monomaterial PE bags and film	SPC, APR
Multimaterial flexible packaging	APR, FPA
Aluminum cans	SPC, EPA, CMI, CG
Aluminum aerosol containers	SPC, EPA, CMI, CG
Aluminum foil	SPC, EPA, CG
Aluminum trays	SPC, EPA, CG
Glass bottles & jars	SPC, EPA, GPI, CG
Aseptic/gable-top cartons	SPC, AF&PA, EPA, CG
Steel/tin/bimetal cans	SPC, EPA, CMI, CG
Steel aerosol containers	SPC, EPA, CMI, CG
Spiral wound containers	SPC, AF&PA
Paper hot cups	SPC, AF&PA, CG
Molded fiber foodservice packaging	SPC, AF&PA
Molded fiber nonfood packaging and trays	SPC, AF&PA
Paper ice cream containers	SPC, AF&PA
Polycoated paperboard	SPC, AF&PA, CG
Corrugated cardboard	AF&PA, EPA, CG
Magazines	AF&PA, EPA, CG
Mail, office paper	AF&PA, EPA, CG
Newspaper	AF&PA, EPA, CG
Paper bags	AF&PA, EPA, CG
Paperback books	EPA, CG
Paperboard	AF&PA, EPA, CG
Pizza boxes	AF&PA, EPA, CG
Shredded paper	CG
Nonmetalized wrapping paper	EPA, CG

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Determining Acceptance of a Recycling Category

It is common to classify acceptance or exclusion of a Recycling Category as explicit or implicit. Explicit refers to specific language from the recycling program that references the Recycling Category. Implicit terminology means that the program has more general language describing broader categories of packaging and printed paper, and the specific Recycling Category is not referenced.

Below, Recycling Categories have been divided into three groups: "Group 1: Above 60% Explicit Acceptance," "Group 2: 10%–60% Explicit Acceptance," and "Group 3: Below 10% Explicit Acceptance." Please be reminded that "explicit" means the recycling categories are referred to clearly in residential program communications.

All packages that fall within Group 1 will be given implicit acceptance inclusion because they exceed the U.S. Federal Trade Commission Green Guides' 60% threshold for residential program acceptance. Packages that fall within Group 2 must be evaluated for implicit inclusion. Packages that fall within Group 3 need further industry research to be implicitly included in a broader material category.

Trade associations and companies are encouraged to provide supplemental research for the community acceptance of their material formats. Sound data will be reviewed and may be added to the relevant communities in the National Recycling Database.

Group 1: Above 60% Explicit Acceptance:

These recycling categories are accepted for more than 60% of the households in the United States. For each Recycling Category in Group 1, the listed Acceptance Rate is a combination of both explicit and implicit residential program acceptance of the Recycling Category.

- Aluminum cans
- Corrugated cardboard
- Glass bottles & jars
- High density polyethylene (HDPE) bottles/jugs & jars
- Magazines
- Mail, office paper
- Newspaper
- Paperboard
- Polyethylene terephthalate (PET) bottles/jugs & jars
- Steel/tin/bimetal cans

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Group 2: 10%–60% Explicit Acceptance:

This group contains packaging that has between 10% and 60% explicit acceptance. Each Recycling Category in Group 2 has been evaluated to see whether it should be included implicitly in a broader category. Packages are generally included in a broader category if communities commonly group them together, unless there are known barriers to Materials Recovery Facility (MRF) acceptance or end-market prohibitions. Package categories in this group that include implicit acceptance in the acceptance rate are indicated with an asterisk.

- Aluminum aerosol containers
- Aluminum foil
- Aluminum trays
- Aseptic/gable top cartons
- HDPE bulky rigid plastics
- HDPE cups *
- HDPE lids *
- HDPE trays *
- HDPE tubs *
- Low density polyethylene (LDPE) bottles/jugs & jars *
- LDPE lids *
- Molded fiber nonfood packaging and trays *
- Nursery (plant) packaging
- Paper bags *
- Paper hot cups
- Paperback books *
- PET thermoforms *
- PET cups *
- PET lids *
- Pizza boxes *
- Plastic buckets (≥ 3 gallons)
- Polycoated paperboard
- Polypropylene (PP) bottles/jugs & jars *
- PP bulky rigid plastics
- PP clamshells *
- PP cups *
- PP lids *
- PP trays *
- PP tubs *
- Shredded paper
- Steel aerosol containers
- Nonmetalized wrapping paper *

Group 3: Below 10% Explicit Acceptance:

Packaging in this group has less than 10% explicit acceptance. For each package category in Group 3, the listed Acceptance Rate is only the explicit community acceptance of the package category. Additional research is required for the packages listed here to be considered for inclusion as implicit in a broader category.

- Expanded polystyrene (EPS) packaging
- EPS food service packaging
- HDPE tubes
- Molded paper food service packaging
- Monomaterial polyethylene (PE) bags and film
- Multimaterial flexible packaging
- Other plastic (#7) packaging
- Paper ice cream containers
- PP pods
- PP tubes
- Polystyrene (PS) lids
- PS foodservice packaging
- Polyvinyl chloride (PVC) packaging
- Spiral wound containers (includes containers with or without metal bottoms)

One item that causes confusion among residents is pizza boxes. As noted above, pizza boxes fall into Group 2 and will be marked as accepted with cardboard unless the community specifically excludes pizza boxes. If the community guidelines specify "no greasy pizza boxes" or "no oily pizza boxes," pizza boxes will be identified as acceptable.