What's in California Landfills: Measuring Single-Use Packaging and Plastic Food Service Ware Disposal

2025

Final Findings

Appendix 1 – Detailed Methodology and Data Tables

Table of Contents

Detailed Methodology and Data Tables

This section outlines the study design, methodology, data analysis procedures, and supplementary data tables. Each section provides additional detail on its respective topic, with consideration for the overall scope and objectives of the material characterization study.

Overview of Informational and Data Tables Organized by Phases of the Study

- Appendix 1, Section 1.1, Table A1: displays the material characterization study material sorting list by category. The list includes the material class, type, form, code, sorting rule, examples, and additional required information.
- Appendix 1, Section 1.1, Table A2: provides the sample count for the quality control sort.
- Appendix 1, Section 1.1, Table A3: provides the sample count for additional contractor staff sorts.
- Appendix 1, Section 1.3, Table A4: displays the field sampling schedule.
- Appendix 1, Section 1.4, Table A5: displays the facility selection and sample allocation.
- Appendix 1, Section 2.1, Table A6: estimates the percent composition by weight of material types within classes.
- Appendix 1, Section 2.2, Table A7-A: provides within-sector composition analysis for each material type.
- Appendix 1, Section 2.2, Table A7-B: provides details on materials too rare for within-sector randomization and further analysis.
- Appendix 1, Section 2.2, Table A8: provides statewide disposal estimates for all material types.
- Appendix 1, Section 2.2, Table A9-A: provides weight-to-volume (density) measurements for certain sorting categories containing covered material.
- Appendix 1, Section 2.2, Table A9-B provides details on materials too rare for the weight-to-volume (density) measurements.
- Appendix 1, Section 2.2, Table A10-A: provides proportional estimates of food discarded in original packaging and packaging by sector.
- Appendix 1, Section 2.2, Table A10-B: provides details on proportional estimates of nonfood (good) discarded in original packaging and packaging by sector.
- Appendix 1, Section 2.2, Table A10-C: provides details on proportional estimates of covered material discarded with food inside by sector and class.
- Appendix 1, Section 2.2, Table A10-D: provides details on proportional estimates of covered material discarded with nonfood (good) inside by sector and class.

Section 1: Detailed Methodology

Section 1.1: Sorting Categories List and Sorting Guidance

This section describes the in-field sorting conducted by contractor staff. Additionally, CalRecycle staff provide a descriptive narrative of the sorting guidance given to contractor staff, including special cases encountered during material sortation. A table is also included that illustrates the sorting list, which includes combined Covered Material Categories (CMCs) codes with the CMC list.

Study Material Sorting List

Table A1 is the material sorting list used in this study and is aligned with the covered material categories published December, 31, 2024. It presents the material sorting categories, including sorting rules and examples for each category. Each sorting category identifies a combination of material class, material type, and form. The first column in the table provides a numeric count. The count is not ordered sequentially; instead, it follows the same order as the CMC List. The second column describes the material class (glass, ceramic, metal, paper and fiber, plastic, and wood and other organic materials). The third column describes the material type, and the fourth column describes the form of the covered materials within each category. The fifth column contains a code indicating which covered material categories are included within each sorting category. This code refers to the CMC List published on December 31, 2024, pursuant to the Plastic Pollution Prevention and Packaging Producer Responsibility Act (Senate Bill (SB) 54, Allen, Chapter 75, Statutes of 2022, the Act). All sorting categories with a corresponding code starting with "24_" are specific to covered material. Additionally, in the code column, the alphanumeric material code ends with an "N" and/or a "P" indicating whether the item contains an inseparable plastic component (P) or contains no plastic component (N). An "N/P" indicates that the material form contains two covered materials, one with and one without inseparable plastic components. Entries in the code column with the following text mean:

- "Potential reuse": categories for packaging and food service ware that may be reusable or refillable,
- "Mixture": categories in which a covered material was jointly discarded with other material (e.g., food discarded in original packaging), and
- "n/a": remainder categories for materials other than covered material.

The sixth column presents a sorting rule with a description of the identifiable features of these items. The seventh column provides examples of expected items within each material class, type, and form.

Table A1: Study Material Sorting List

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
1	Glass	Glass	Bottles and Jars	24_G1N/P	Means glass bottles and jars that do not display the CRV indication. Includes whole and broken containers.	Bottles and jars of: Food; Candles; Personal care products; Salad dressing; Sauce
2	Glass	Glass	Other Forms	24_G2N/P	Means glass that does not display the CRV indication and are not in the form of a bottle or jar. Includes whole and broken containers.	Glass ampules; Closed-ended glass tubes
4	Glass	Glass	Small – Two or more sides measuring 2” or less	24_G3N/P	Means any glass less than 2 inches such that it will pass through a screen with a 2-inch mesh.	Broken glass fragments; Perfume sample jars; Small glass containers; Herb jars; Cosmetic jars; Glass droppers; Glass spray bottles; Glass vials
3	Glass	Glass	Potentially Reusable Packaging and Food Service Ware	Potential Reuse	Means packaging and food service ware composed of a durable product intended for multiple uses. Item is washable between uses. Excludes packaging and food service ware items intended for single use but reused incidentally.	Dishes; Refillable bottles; Wrappers; Glass straws; Glass milk jugs

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
5	Glass	Glass	Remainder/ Composite Glass	n/a	Means glass which does not fall into any of the above categories. Includes CRV beverage containers. Includes whole and broken glass.	Flat glass; Automotive glass; Soda bottles; Beer bottles; Fruit juice bottles; Wine cooler bottles; Liquor bottles
6	Ceramic	Ceramic	All Forms	24_C1N/P	Means all forms of ceramic used for plastic single-use food service ware or single-use packaging. Includes whole and broken ceramic.	Bottles and jars of: Food; Candles; Personal care products; Yogurt; Beverages
8	Ceramic	Ceramic	Small – Two or more sides measuring 2” or less	24_C2N/P	Means any ceramic less than 2 inches such that it will pass through a screen with a 2-inch mesh.	Fragments of broken ceramic; Small ceramic containers
7	Ceramic	Ceramic	Potentially Reusable Packaging and Food Service Ware	Potential Reuse	Means packaging and food service ware composed of a durable product intended for multiple uses. Item is washable between uses. Excludes packaging and food service ware items intended for single use but reused incidentally.	Cups; Dishes; Utensils

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
9	Ceramic	Ceramic	Remainder/ Composite Ceramic	n/a	Means ceramic which does not fall into any of the above categories. Includes whole and broken ceramic.	Tera cotta pots; Ceramic tiles; Toilets; Sinks; Tubs
10	Metal	Aluminum	Non-aerosol Containers	24_M1N/P	Means any container that is made mainly of aluminum, with or without lids attached, that does not display the CRV indication. Does not include aerosol containers or architectural paint products.	Meat cans; Food cans; Non-beverage bottles; Cups; Candle/screw top/other tins; Collapsible tubes; Coffee pods
11	Metal	Aluminum	Foil Sheets	24_M2N/P	Means aluminum foil or aluminum item in the form of a sheet or wrap.	Aluminum foil sheets
12	Metal	Aluminum	Foil Molded Containers	24_M3N/P	Means flexible molded container composed of aluminum.	Molded trays; Takeout containers; Food trays; Pie pans
13	Metal	Aluminum	Aerosol Cans	24_M4P	Means rigid aluminum cans with aerosol spray tops. Excludes any container believed to contain any amount of hazardous product.	Aerosol cans for: Personal care products; Food; Cleaning products

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
14	Metal	Aluminum	Other Forms	24_M5N/P	Means any aluminum item, other than aluminum non-aerosol containers, foil sheets, foil-molded containers, or aerosol cans, that is single-use packaging or plastic single-use food service ware.	Lids
15	Metal	Tin/Steel/Bimetal	Non-aerosol Containers	24_M6N/P	Means rigid containers, made mostly of steel, that do not display the CRV indication. These items will stick to a magnet and may be tin-coated.	Soup cans; Coffee cans; Bimetal containers with steel sides and aluminum ends; Canned food containers; Candy tins
16	Metal	Tin/Steel/Bimetal	Aerosol Cans	24_M7P	Means rigid cans with aerosol spray tops, made mostly of steel. Material will stick to a magnet. Includes materials marked with the number 40 and the code FE with the chasing arrows. Excludes any container believed to contain any amount of hazardous product.	Aerosol cans for: Cleaning products; Personal care products; Food

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
17	Metal	Tin/Steel/Bimetal	Other Forms	24_M8N/P	Means single-use packaging and plastic single-use food service ware made of tin/steel/bimetal item that cannot be put in any other category.	Lids; Strapping
18	Metal	Other Non-ferrous	All Other Forms	24_M9N/P	Means any single-use packaging and plastic single-use food service ware made of non-ferrous metal that does not fit into any other category, is not stainless steel, and is not magnetic.	Non-ferrous: Candy box or container; Cookie box or container; Mesh
19	Metal	Other Ferrous	All Other Forms	24_M10N/P	Means any single-use packaging and plastic single-use food service ware that is ferrous metal and does not contain any steel.	Ferrous: Candy box or container; Cookie box or container
21	Metal	Metal	Small – Two or more sides measuring 2” or less	24_M12N/P	Means metal less than 2 inches such that it will pass through a screen with a 2-inch mesh.	Bottle caps; Metal clasps; Mini tins; Sachets; Wrappers

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
20	Metal	Metal	Potentially Reusable Packaging and Food Service Ware	Potential Reuse	Means packaging and food service ware composed of a durable product intended for multiple uses. Item is washable between uses.	Dishes; Utensils
22	Metal	Metal	Remainder/ Composite Metal	n/a	Means metal that cannot be put in any other category. Includes CRV beverage containers.	Soda cans and bottles; Beer cans and bottles; Wine cans; Cocktail beverage cans; Alcoholic seltzer cans; Motors; Major appliances; Insulated wire; Fasteners (such as nails and screws)
23	Paper and Fiber	Kraft Paper	All Forms	24_PF1N/P	Means stiff, sturdy paper derived from wood pulp, usually brown, that is single-use packaging or plastic single-use food service ware.	Packaging paper; Envelopes; Mailers; Shipping filler/cushioning paper; Floral arrangement wrapping paper; Butcher paper; Shipping tubes; Take out boxes

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
24	Paper and Fiber	Molded Fiber	All Forms	24_PF14N/P	Means paper fiber molded to shape designed specifically for single-use packaging or plastic single-use food service ware.	Molded egg cartons; Packaging inserts; Roll cradles; Bowls; Take-out containers; Trays
25	Paper and Fiber	Multi-Material Laminate	Aseptic Cartons	24_PF15P	Means bleached paperboard or paper cartons with a foil liner and plastic coating that do not display the CRV indication.	Cartons for: Juice; Milk; Water; Soup or broth
26	Paper and Fiber	Multi-Material Laminate	Gable-top Cartons	24_PF5P	Means plastic-coated paper-based cartons with a triangular top that do not display the CRV indication.	Cartons for: Milk; Egg substitute; Juice; Creamer
29	Paper and Fiber	Multi-Material Laminate	Other Forms	24_PF7P	Means single-use packaging and plastic single-use food service ware made mostly of paper laminated with plastic and other materials, that do not fit into any other category. This includes paper with a laminated plastic coating.	Food containers; Snack containers; Parchment paper; Poly-coated paper

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
27	Paper and Fiber	OCC	Waxed Cardboard	24_PF8N/P	Means waxed paper laminate, usually composed of three layers, with a center wavy layer sandwiched between the two outer layers.	Produce boxes
28	Paper and Fiber	OCC	Cardboard	24_PF9N/P	Means paper laminate, usually composed of three layers, with a center wavy layer sandwiched between the two outer layers. It can be uncoated or have a (glossy) coating on the inside or outside. Excludes waxed cardboard.	Shipping boxes; Electronic packaging cartons; Sheets used as dividers in boxes; Corrugated wrap; Shipping padding
30	Paper and Fiber	Paperboard	All Forms	24_PF10N/P	Means single-use packaging and plastic single-use food service ware made of paperboard. Excludes cardboard (OCC).	Boxes for: Cereal; Frozen food; Candy/cookie; Jewelry; Cigarettes; Cosmetics; Pasta; Packaging inserts; To-go containers; Food trays

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
31	Paper and Fiber	White Paper	All Forms	24_PF11N/P	Means single-use packaging or plastic single-use food service ware made of white paper.	White shipping envelopes, with or without clear windows; White expandable packing paper
32	Paper and Fiber	Other/Mixed Paper	All Forms	24_PF12N/P	Means single-use packaging and plastic single-use food service ware made of other or mixed Paper and Fiber that does not fit into any other category.	Waxed paper liners; Waxed paper bags; Freezer paper
34	Paper and Fiber	Paper and Fiber	Small – Two or more sides measuring 2” or less	24_PF16N/P	Means any paper less than 2 inches such that it will pass through a screen with a 2-inch mesh.	Small paper cushioning; Sugar packets; Hang tabs; Candy wrappers
33	Paper and Fiber	Other/Mixed Paper	Potentially Reusable Packaging and Food Service Ware	Potential Reuse	Means packaging and food service ware composed of a durable product intended for multiple uses. Item is washable between uses. Excludes packaging and food service ware items intended for single use but reused incidentally.	Durable items for the display, cooling, or transportation of food

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
35	Paper and Fiber	Other/ Mixed Paper	Remainder/Composite Mixed Paper	n/a	Means any paper that cannot be put in any other category. Includes CRV beverage containers.	Self-adhesive notes; Hardcover and paperback books; Greeting cards; Printing or notebook paper; Newspapers; Magazines; Grocery bags; Aseptic or gable-top cartons for wine or liquor
36	Plastic	PET (#1)	Bottles, Jugs, and Jars (Clear/ Natural)	24_P1P	Means clear bottles, jugs, and jars that are marked and identified as PET or PETE (#1) that do not display the CRV indication.	Bottles, jugs and jars for: Food; Household products; Personal care products
37	Plastic	PET (#1)	Bottles, Jugs, and Jars (Pigmented/Color)	24_P2P	Means tinted/pigmented/colored bottles, jugs, and jars that are marked and identified as PET or PETE (#1) that do not display the CRV indication. These may be translucent or opaque.	Bottles, jugs and jars for: Food; Household products; Personal care products

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
38	Plastic	PET (#1)	Other Rigid Containers, Cups, Lids Plates, Trays, Tubs	24_P38P	Means a PET rigid plastic container, cup, lid, plate, tray, or tub that is marked and identified as PET or PETE (#1). Resin can be of any color, pigmented or clear. Includes thermoformed PET containers.	PET clamshell to-go containers; Berry containers; Plastic tubs used for lettuce; Cold cups; Trays; Cold cup lids; Plastic egg cartons; Plastic packaging for cupcakes; Clamshell packaging for hardware
39	Plastic	PET (#1)	Other Rigid Items	24_P39P	Means rigid items, other than bottles, jugs, and jars, cups, lids, plates, trays, tubs, and other containers, that do not fit in any other category that are marked and identified as PET or PETE (#1).	Toy packaging; Custom rigid packaging
40	Plastic	PET (#1)	Flexible and Film Items	24_P5P	Means flexible and film single-use packaging and food service ware items that are marked and identified as PET (#1).	Film for: Food; Tertiary packaging; Ovenable film; Strapping; Mailers

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
41	Plastic	HDPE (#2)	Bottles, Jugs, and Jars (Clear/ Natural)	24_P6P	Means clear/natural bottles, jugs, and jars that are marked and identified as HDPE (#2) that do not display the CRV indication. The plastic is cloudy white, allowing light to pass through it.	Bottles, jugs and jars for: Food; Household products; Personal care products
42	Plastic	HDPE (#2)	Bottles, Jugs, and Jars (Pigmented/Color)	24_P7P	Means tinted/pigmented/colored bottles, jugs, and jars, that are marked and identified as HDPE (#2) that do not display the CRV indication. These may be translucent (of a color other than milky-white) or opaque.	Bottles, jugs and jars for: Food; Household products; Personal care products
43	Plastic	HDPE (#2)	Pails and Buckets	24_P8P	Means pails and buckets over 1-gallon (including 5-gallon buckets) that are marked and identified as HDPE (#2). Does not include pails and buckets for architectural paint.	Buckets for drywall mud; Bulk food buckets

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
44	Plastic	HDPE (#2)	Other Rigid Items	24_P40P	Means rigid items, other than bottles, jugs, jars, pails, and buckets, that are marked and identified as HDPE (#2) and used as single-use packaging or plastic single-use food service ware.	Boxes and tubs for: Food; Household products; Personal care products; Tubes for frozen juice concentrate; 4- or 6-pack carriers for aluminum beverage cans
45	Plastic	HDPE (#2)	Flexible and Film Items	24_P10P	Means flexible and film single-use packaging and plastic single-use food service ware items that are marked and identified as HDPE (#2).	Mailers; Cereal bags; Take-out bags; Rice bags; Detergent bags; Child-resistant pouches
46	Plastic	PVC (#3)	Rigid Items	24_P11P	Means rigid single-use packaging and plastic single-use food service ware items that are marked and identified as PVC (#3) that do not display the CRV indication.	Clamshells; Bottles; Jugs; Jars; Boxes
47	Plastic	PVC (#3)	Flexible and Film	24_P12P	Means flexible and film single-use packaging and plastic single-use food service ware items that are marked and identified as PVC (#3).	Shrink film; Tubing sleeves

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
48	Plastic	LDPE (#4)	Bottles, Jugs, and Jars	24_P13P	Means bottles, jugs, and jars that are marked and identified as LDPE (#4) that do not display the CRV indication.	Bottles, jugs and jars for: Food; Household products; Personal care products
49	Plastic	LDPE (#4)	Other Rigid Items	24_P14P	Means rigid items, other than bottles, jugs, and jars, that are marked and identified as LDPE (#4) and are used for single-use packaging or plastic single-use food service ware	Containers for: Food; Household products; Personal care products; Cups; Lids; Trays; Tubs
50	Plastic	LDPE (#4)	Clear Non-Bag Film	24_P15P	Means clear, film-type items that are marked and identified as LDPE (#4), used in single-use packaging and plastic single-use food-service ware, but not identified as bags.	Stretch film; Industrial film; Bubble wrap; Air pillows
51	Plastic	LDPE (#4)	Other Flexible and Film Items	24_P16P	Means flexible or film single-use packaging and plastic single-use food service ware items marked LDPE (#4).	6-pack soda can/beer can rings; Bread bags; Mesh citrus bags; Food packaging; Candy wrappers; Plastic cutlery packaging

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
52	Plastic	PP (#5)	Bottles, Jugs, and Jars	24_P17P	Means bottles, jugs, and jars that are marked and identified as PP (#5) that do not display CRV indication.	Bottles, jugs and jars for: Food; Household products; Personal care products
53	Plastic	PP (#5)	Other Rigid Containers, Cups, Lids, Plates, Trays, and Tubs	24_P41P	Means rigid containers, cups, lids, trays, and tubs that are marked and identified as PP (#5). Includes thermoformed PP containers and other items that are single-use packaging or plastic single-use food service ware.	Clear cups and lids; Deli containers/tubs; To-go containers (e.g. clamshells); Plates; Bowls; Multiple-compartment trays/plates; Berry baskets
54	Plastic	PP (#5)	Utensils	24_P19P	Means single-use utensils that are marked and identified as PP (#5). Excludes utensils that are clearly designed or labeled for reuse.	Knives; Forks; Spoons; Chopsticks
55	Plastic	PP (#5)	Other Rigid Items	24_P20P	Means rigid single-use packaging and plastic single-use food service ware items that are marked and identified as PP (#5) that do not fit into another category.	Corrugated pads

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
56	Plastic	PP (#5)	Clear Non-Bag Film	24_P21P	Means clear, film-type items that are marked and identified as PP (#5) but not identified as a bag and used for single-use packaging and plastic single-use food service ware.	Adhesive tape; Cellophane-type film; Basket wrap
57	Plastic	PP (#5)	Other Flexible and Film Items	24_P22P	Means flexible or film items that are marked and identified as PP (#5) that are single-use packaging or plastic single-use food service ware. Includes pigmented non-bag film.	Candy or snack bags; Rice bags; Dog and cat dry food bags; Poly strapping
58	Plastic	PS (#6)	Expanded/Foamed Hinged Containers, Plates, Cups, Tubs, Trays, and Other Foamed Containers	24_P23P	Means expanded/foamed items that are marked and identified as PS (#6) that are single-use for plastic food service ware or packaging.	Clamshell to-go containers; To-go soup containers; Bowls; Plates; Cups; Expanded foam egg cartons; Meat trays

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
59	Plastic	PS (#6)	Other Expanded/ Foamed Forms	24_P42P	Means expanded/foamed forms that are marked and identified as polystyrene (#6) items that do not fit into any other category that are single-use packaging or plastic single-use food service ware.	Foam blocks; Polystyrene sheets; Foam rolls; Convoluted foam; Foam netting; Foam tubing; Wine shippers
60	Plastic	PS (#6)	Utensils	24_P27P	Means single-use utensils that are marked and identified as PS (#6). Excludes utensils that are clearly designed or labeled for reuse.	Forks; Knives; Spoons
61	Plastic	PS (#6)	Solid Hinged Containers, Plates, Cups, Tubs, Trays, and Other Solid Forms	24_P43P	Means solid items that are marked and identified as polystyrene (#6) used for single-use plastic food service ware or single-use packaging. Excludes foamed/expanded polystyrene.	Clamshell to-go containers; To-go soup containers; Plates; Cups

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
62	Plastic	PS (#6)	Flexible and Film Items	24_P29P	Means flexible or film single-use plastic food service ware and single-use packaging items that are marked and identified as PS (#6). Excludes foamed polystyrene flexible and film items.	Sheets for shipping or packaging
63	Plastic	Plastics and Polymers Designed for Compostability	Rigid Items	24_P44P	Means a rigid plastic single-use packaging and food service ware item that is designed and marked for compostability.	To-go containers; Cups; Plates; Bowls; Utensils; Egg flats
64	Plastic	Plastics and Polymers Designed for Compostability	Flexible and Film Items	24_P45P	Means a flexible plastic or film single-use packaging and food service ware item that is designed and marked for compostability.	Shipping pouches; Flexible food packaging; Compostable take-out bags
65	Plastic	Multi-Material Laminate	Pouches and Envelopes	24_P46P	Means pouches and envelopes composed of multiple laminated layers of plastic and, potentially, other materials.	Pouches for: Shipping; Food; Beverages; Personal care products; Mailing envelopes

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
66	Plastic	Multi-Material Laminate	Other Forms	24_P33P	Means any multi-material laminate item that does not fit into the other category and is used for single-use packaging and single-use plastic food service ware.	Metalized wrappers
67	Plastic	Other/ Mixed Plastics	Textiles (non-organic/synthetic)	24_P34P	Means all fabric or textile single-use packaging and single-use plastic food service ware items that are made of any type of synthetic fiber or are a mixture of synthetic and non-synthetic fibers. Excludes bags or other items made of textiles that are not single use.	Woven plastic rice bags; Packing material made of scrap fabric; Ribbon used for packaging; Fabric bags
68	Plastic	Other/Mixed Plastics	Rigid Items	24_P35P	Means rigid material that is made of plastic other than resins #1-6, easily identified as compostable, or are otherwise unidentifiable by resin.	Bottles; Jugs; Jars; Food containers; Polyurethane blocks; Synthetic rubber stoppers

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
69	Plastic	Other/Mixed Plastics	Flexible and Film Items	24_P36P	Means flexible or film plastic items that are made of plastics other than resins #1-6, easily identified as compostable, or otherwise unidentifiable by resin.	Plastic wrap; Food pouches; Soap bladders; Polyurethane foam sheets
71	Plastic	Plastic	Small – Two or more sides measuring 2” or less	24_P47P	Means any plastic less than 2 inches such that it will pass through a screen with a 2-inch mesh.	Packing peanuts; Caps and lids; Pizza savers; Condiment packets; Straws; Coffee stirrers; Twist ties; Bread clips/tabs; Synthetic rubber bands
70	Plastic	Plastic	Potentially Reusable Packaging and Food Service Ware	Potential Reuse	Means packaging and food service ware composed of a durable product intended for multiple uses. Item is washable between uses. Excludes packaging and food service ware items intended for single use but reused incidentally.	Dishes; Utensils; Durable melamine; Reusable shipping crates; Plastic pallets

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
72	Plastic	Plastic	Remainder/Composite Plastic	n/a	Means plastic that cannot be put in any other type. Includes CRV beverage containers.	Plastic toys; CRV beverage containers; PVC pipes; Agricultural film; Grocery/produce bags; Trash bags
73	Wood and Other Organic Materials	Wood	All Untreated Forms	24_WO1N/P	Means single-use packaging and single-use plastic food service ware items made of unpainted and untreated wood.	Crates; Wine boxes; Pallets; Tea boxes
74	Wood and Other Organic Materials	Wood	All Treated or Painted Forms	24_WO2N/P	Means wood that has been treated with a chemical preservative, like paint or varnish, to protect it from its environment, including insects, microorganisms, fungi, etc.	Thermoformed or thermoglued wooden food packaging; Wooden cheese boxes
75	Wood and Other Organic Materials	Other/Mixed Organic	Textiles	24_WO3N/P	Means all fabric or textile single-use packaging and single-use plastic food service ware items that are made of any type of non-synthetic fibers, such as cotton, hemp, linen, and jute.	Cloth (cotton) bags that sheets are sold in; Ribbon

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
76	Wood and Other Organic Materials	Other/Mixed Organic	Other Forms	24_WO4N/P	Means single-use packaging and plastic single-use food service ware made of non-synthetic material that does not fall into any other category.	Mushroom packaging; Algal packaging (untreated); Bamboo packaging
79	Wood and Other Organic Materials	Wood and Other Organic	Small – Two or more sides measuring 2” or less	24_WO6N/P	Means any wood or organic-based packaging less than 2 inches such that it will pass through a screen with a 2-inch mesh.	Cork; Wooden lids; Twine
78	Wood and Other Organic Materials	Other/Mixed Organic	Potentially Reusable Packaging and Food Service Ware	Potential Reuse	Means packaging or food service ware composed of a durable product intended for multiple uses. Item is washable between uses. Excludes packaging and food service ware items intended for single use but reused incidentally.	Dishes; Utensils

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
77	Wood and Other Organic Materials	Other/Mixed Organic	Food Discarded in Original Packaging or Food Service Ware	Mixture	Means food intended for human consumption that was discarded in opened or unopened original packaging from the manufacturer, or in single-use food service ware from a food service establishment, such as takeout containers. Does not include beverage containers that display the CRV indication.	Box of lasagna; Packaged meats; Wrapped/boxed sandwiches; Canned foods; Fruit cups; Pudding cups; Frozen meals; Drinks in non-CRV bottles
80	Wood and Other Organic Materials	Other/Mixed Organic	Remainder/Composite Organic	n/a	Means organic material that cannot be put in any other category.	Food discarded without original packaging or food service ware; Yard waste; Hair; Small wood products; Sawdust; Agriculture crop residues; Animal carcasses
81	Miscellaneous	Miscellaneous	Nonfood Discarded in Original Packaging	Mixture	Means any nonfood item that was discarded in opened or unopened original packaging.	Personal care products in bottles; Nail polish in bottles; Pet food in cans; Partially used candles; Boxes of tissues

Count	Class	Type	Form	Combined CMC Code	Sorting Rule	Examples
83	Miscellaneous	Miscellaneous	Mixed Residue	n/a	Means material (including 2-inch-minus materials) that cannot be put in any other type or category. Includes mixed residue and materials smaller than two inches that cannot be further sorted.	Non-organic scraps; Rocks; Grit
82	Miscellaneous	Miscellaneous	Remainder Miscellaneous	n/a	Means materials that do not belong in any other category. Includes Inerts and Others, HHW, E-Waste, Special Waste, and Miscellaneous	Concrete; Masonry; Drywall; Roofing; Carpet; Rock, Sand, Soil; Architectural paint; Batteries; Pharmaceuticals; Tires; Mattresses and foundations; Furniture

Additional Sorting Guidance

In addition to the guidance provided in the sorting list, additional information was provided to contractor staff to ensure proper sorting. The sorting categories were intended to apply to each detachable item of covered material individually (e.g., a cup and a lid would be categorized independently). If detachable items were discarded together and were empty (e.g., a cup with a lid that is empty), they were sorted separately unless doing so was a potential safety hazard. If detachable items were discarded together but contained any liquid, food, or other contents, contractor staff were not expected to detach the items to sort separately.

Dominance

When an item was composed of materials from different classes or types that were not readily separable, such as paper coated with plastic, the contractor staff estimated which material — in both material class and type — contributed most to the overall weight. The item was then sorted into the study's material sorting category that accounted for most of the weight.

Covered Material Discarded with Food or Goods Inside

Covered material that was discarded with the good still inside was sorted into one of two categories. If original single-use packaging (whether opened or unopened) or single-use plastic food service ware was disposed of with food inside, it was sorted into the Food Discarded in Original Packaging or Food Service Ware category. If original single-use packaging (whether opened or unopened) was disposed of with some or all of the good still inside, the item was sorted into the Nonfood Discarded in Original Packaging category.

Special Cases for Sorting

Additional guidance was provided to contractor staff for the groups of material identified and described in this section.

California Redemption Value (CRV)

Contractor staff sorted beverage containers (i.e., containers indicating a CRV) into the remainder material category appropriate to that material class (e.g., Remainder/Composite Glass, Remainder/Composite Metal, Remainder/Composite Paper, or Remainder/Composite Plastic).

Bags

For this type of study, it is not uniformly possible to differentiate specific items between bags that are covered material and bags that are not covered. Consistent sorting rules are necessary to inform decisions of what category to sort each bag into. While necessary, these sorting rules can result in items that are not covered material being sorted into a covered material category and covered material items being sorted into an uncovered category.

Contractor staff sorted bags into a category for covered material if: (1) the bag was clearly labeled with the name of a food service establishment or (2) the bag was made of thin plastic material (less than 2.25 millimeter thick).

Bags typical of those provided at the point of sale by retailers (e.g., grocery bags, plastic film bags bearing the name of the retailer) were not sorted into covered material categories. Contract staff sorted these items into one of the Remainder/Composite categories, as applicable.

Medical

Primary, secondary, and tertiary packaging associated with the following products was sorted into one of the Remainder/Composite categories, as applicable, and not sorted into categories for covered material:

- medical products and products defined as devices or prescription drugs
- drugs used for animal medicines
- animal drugs, biologics, parasiticides, medical devices, or diagnostics used to treat or administered to animals
- infant formula
- medical food
- fortified oral nutritional supplements used for persons who require supplemental or sole-source nutrition

Hazardous

The following packaging, whether primary, secondary, or tertiary, was sorted into one of the Remainder/Composite categories, as applicable, and was not sorted into categories for covered material:

- packaging associated with pesticides
- plastic packaging containers used to contain or ship products classified as dangerous goods or hazardous materials for transport
- packaging used for hazardous or flammable products classified by the Occupational Safety and Health Administration (OSHA)

Small Material Measuring 2 inches or Less on Two or More Sides (Single-Use Packaging and Plastic Food Service Ware)

Each material class has a sorting category specific to covered material for small items. Materials were sifted through a 2-inch screen. Items that did not fall through the screen were hand sorted. When safe, items that passed through the screen but were clearly identifiable as covered material were sorted into categories for small covered material.

Most materials that fell through the 2-inch screen were not further sorted but designated into the Miscellaneous Mixed Residue category. Small or broken covered material items that were sorted into Mixed Residue are not captured in the estimation of covered materials reaching landfills.

Remainder/ Composite Category Quality Control Sort

For selected samples, CalRecycle staff conducted quality control sorting on the Remainder/Composite category of each material class after contractor staff completed their sort. The remainder material categories subjected to the CalRecycle quality control sort can be observed as each line item in the Quality Control (QC) Material Sorting Categories column found in Table A2. Quality Control Sort.

CalRecycle staff hand-sorted material on top of a metal-wired screen with 2-square-inch gaps to allow for small items to fall through. Staff hand-sorted material into many material types, including sorting categories for covered material by material class. The CalRecycle quality control sort captured covered material that was not identified in the sort conducted by contractor staff and served as one mode of quality control. After sorting, the bins were then weighed, photographed, and recorded into the database. The summed weight of the bins was compared to the weight of the material prior to sorting to ensure that all material had been weighed. The sample was accepted if the initial weight and the sum of the weights had a discrepancy of less than 5%.

During data analysis, the covered material weights were integrated back into the respective covered material class data.

Table A2. Quality Control Sort

This table provides a summary of the quality control (QC) sort performed by CalRecycle staff. The first column has the material sorting categories by count enumeration and category name. The second column provides a count of the total number of samples analyzed for the study. The third column provides a count for the total number of samples analyzed and subject to quality control for each row item. The fourth column provides a percentage of total samples that were subject to quality control sorting.

Quality Control (QC) Material Sorting Categories	Total Study Sample Count	Quality Control Sample Count	Percent of Study Samples with QC Sort
5. Remainder/Composite Glass	313	95	30.4%
9. Remainder/Composite Ceramic	313	20	6.4%
22. Remainder/Composite Metal	313	121	38.7%
35. Other/Mixed Paper Remainder/ Composite Mixed Paper	313	123	39.3%
72. Remainder/Composite Plastic	313	127	40.6%
77. Other/Mixed Organic Food Discarded in Original Packaging or Food Service Ware	313	107	34.2%
80. Other/Mixed Organic Remainder/ Composite Organic	313	118	37.7%
82. Remainder Miscellaneous	313	124	39.6%

Table A3. Additional Analyses Performed by Contractor Staff

This table provides a summary of additional analyses performed, by sorting category, after contractor staff sorted the material (see first column). The second column provides a description of the type of additional analyses performed, which was either: (1) Resins — additional analysis by contractor staff to identify plastic resins that were not identifiable in the field; or (2) Depackaging — additional analysis by contractor staff to depackage covered material discarded with food or goods inside. The fourth column provides a count of the total number of items analyzed for each row item.

Contractor Conducted Additional Analysis – sorting categories	Analysis Type	Item Count
68. Other/Mixed Plastics Rigid Items (CM)	Resin	527
69. Other/Mixed Plastics Flexible and Film Items (CM)	Resin	563
77. Other/Mixed Organic Food Discarded in Original Packaging or Food Service Ware	Depackaging	85
81. Nonfood Discarded in Original Packaging	Depackaging	78

Section 1.2: Facility Selection and Sample Allocation

Prior to the start of fieldwork, CalRecycle pre-selected 15 landfill facilities distributed across California to participate in the study from a list of eligible sites (see Request for Proposal, Secondary – DRR24046, for a list of eligible facilities). The list of eligible sites was created and prioritized based on the largest landfills, by volume, that received material from the four waste-generating sectors (sector or sectors). Cascadia reviewed all facility data collected by CalRecycle staff during the initial facility recruitment, confirmed each facility's willingness to participate in the study, and confirmed final logistics. When replacements or adjustments to the initially selected sites were needed (e.g., due to site availability or weather), CalRecycle staff selected additional sites from the list of eligible sites. Sampling proceeded at 14 of the 15 initially selected sites and at two additional eligible sites, for a total of 16 sites. A list of all the sampling sites can be found in the main report, Table 1.

Section 1.3: Field Sampling Schedule

Cascadia conducted the characterization study over two separate field sampling periods. Period one consisted of 15 days of fieldwork at seven different facilities. Period two consisted of 19 days of fieldwork at nine different facilities. Most fieldwork days were conducted Monday through Friday. Over the two sampling periods, contractor staff collected and characterized 313 samples across 34 field days from 16 different landfill facilities located throughout the state. Contractor staff conducted the fieldwork over two to three days at each facility. The sampling calendars with the fieldwork dates and facilities are shown in Table A4.

Table A4. Field Sampling Calendar

Facility Name	Fieldwork Dates, 2025
Sampling Period 1	
Kiefer Landfill	February 24-26
Forward Landfill	February 27-28
Antelope Valley Recycling & Disposal Facility	March 3-4
Simi Valley Landfill & Recycling Center	March 5-6
Olinda Alpha Sanitary Landfill	March 7 & 10
El Sobrante Landfill	March 11 & 12
Badlands Landfill	March 13-14
Sampling Period 2	
Otay Landfill	March 25-26
West Miramar Sanitary Landfill	March 28
Johnson Canyon Sanitary Landfill	March 31-April 1
Monterey Peninsula Landfill	April 2-3
Corinda Los Trancos Landfill (Ox Mtn)	April 4-5 & 7
Altamont Landfill & Resource Recovery	April 8-9
Highway 59 Landfill	April 10-11
Potrero Hills Landfill	April 14-16
Recology Ostrom Road Landfill	April 17-18

Section 1.4: Sample Allocations

Table A5 shows the distribution of samples by facility and sector.

Contractor staff sampled an average of 10 loads per day in sampling period one and 8.5 loads per day in sampling period two. Within the franchised commercial sector, samples were distributed approximately evenly between packer trucks and drop boxes. Similarly, the self-haul sector was distributed approximately evenly between passenger vehicles and other large vehicles.

Table A5. Distribution of Samples per Sector and Sampling Period by Facility

Facility Name	Franchised Commercial	Franchised Residential	Mix	Self-Haul	Total
Kiefer Landfill	12	8	2	8	30
Forward Landfill	9	5	2	4	20
Antelope Valley Recycling & Disposal Facility	7	5	2	4	18
Simi Valley Landfill & Recycling Center	10	5	2	3	20

Facility Name	Franchised Commercial	Franchised Residential	Mix	Self-Haul	Total
Olinda Alpha Sanitary Landfill	7	5	2	3	17
El Sobrante Landfill	11	0	2	6	19
Badlands Landfill	13	8	2	3	26
Field Season 1 Total	*69*	*36*	*14*	*31*	*150*
Otay Landfill	7	4	2	4	17
West Miramar landfill	5	4	0	1	10
Johnson Canyon Sanitary Landfill	3	1	2	2	8
Monterey Peninsula Landfill	7	5	2	4	18
Corinda Los Trancos Landfill	11	5	2	4	22
Altamont Landfill & Resource Recovery	8	6	2	4	20
Highway 59 Landfill	10	6	2	4	22
Potrero Hills Landfill	11	8	2	8	29
Ostrom Road Landfill	9	8	0	0	17
Field Season 2 Total	*71*	*47*	*14*	*31*	*163*
Study Total	**140**	**83**	**28**	**62**	**313**

Section 1.5: Vehicle Surveys

Contractor staff were posted at the facility entrance gate and administered surveys to vehicle drivers. Vehicle survey data were used to estimate the fraction of the overall waste stream contributed by each waste sector at each participating facility and to select the specific vehicles to be sampled.

Contractor staff collected information only from trucks with loads from the waste stream destined for final disposal at the landfill. Contractor staff did not record any loads that were excluded from this study. Contractor staff gathered the following information through the interview process:

- Date of collection
- Name of the sampling site
- Local weather conditions
- Any notes or unusual circumstances
- Sector of waste (franchised commercial, franchised residential, mixed waste, self-haul)
- Jurisdiction (city or unincorporated county area)
- Vehicle type: Packer (rear/front/side loader), Loose Box (roll off), Compact Box (roll off), Self-Haul (SH) Small (car, SUV, pickup), SH Large (box truck, cargo van, truck with trailer, junk hauler), Semi/Transfer Trailer
- For each load, the estimated percentage of single-family, multi-family, non-residential, self-haul, and unknown mixed waste
- For each self-haul load:
    - Type: Residential, Commercial

    - Subtype: Construction & Demolition (C&D), Roofing, Landscaping, Other
    - Type of construction project: New Construction, Remodel, Demo, Roofing, Other
- For each transfer truck, the name of the originating facility
    - Load weight (net weight was determined either through surveying or in coordination with the facility to obtain net weights for the selected loads)

Contractor staff also selected vehicles for sampling using a random, systematic process as vehicles arrived at the facility. For each sector per facility, a vehicle sampling frequency was determined using the following logic:

For each sampling day and each sector, the expected number, "L," of arriving loads was estimated using information provided by the facilities during coordination calls. The number L was then reduced by one-fifth (producing 0.8 * L) to ensure that the targeted number of loads for each sector was selected on each sampling day, even if traffic was lighter than expected.

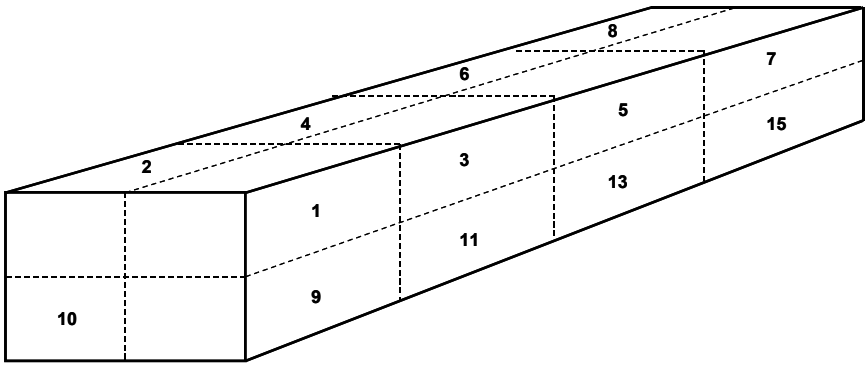
Next, the interval "*n"* was determined by dividing the estimated reduced traffic load (0.8*L) by "*r,"* which represents the number of samples needed for a sector.

If a vehicle was eligible and was the correct n^{th} vehicle, contractor staff placed a *Sample Placard* printed with a unique sample ID number on the vehicle's windshield or dashboard to identify it as a vehicle intended for sampling.

Section 1.6: Sample Collection

Upon arrival in the sampling area, drivers of selected loads were directed to tip their loads. Individual 200-pound sample(s) of waste material were then captured using a random selection protocol designed to select representative samples for each sector. The contractor superimposed an imaginary 16-cell grid (see Figure B1) over the dumped material. A randomly generated number (1-16), pre-printed on the Sample Placard and given to each selected vehicle, identified which cell to extract a sample from. Sample Placards for transfer trailers had three random cells printed on them, one for each of the subsamples used to create the sample.

Figure B1: Diagram of a 16-cell grid superimposed on a dumped load to randomly select a sample.



For transfer trailers, the equipment operator collected one small scoop (between 65 and 70 pounds each) from three different areas of the load and combined the small scoops

on a tarp to create one sample weighing at least 200 pounds. The process was repeated in some cases to create a second sample from the transfer trailer.

If a self-haul load weighed less than 200 pounds, the survey selected additional loads from the same subsector until the total weight collected exceeded 200 pounds. The combined materials were then counted as one sample.

If the vehicle traffic on the day of fieldwork at a facility did not match the information collected by CalRecycle during recruitment, the contractor collected more than one sample per vehicle. For example, if a location reported receiving 10 residential trucks per day, but on the day of fieldwork at that facility they received only two residential loads, the contractor collected multiple samples from each of those two loads to ensure the daily sampling target was achieved.

Section 1.7: Sample Characterization

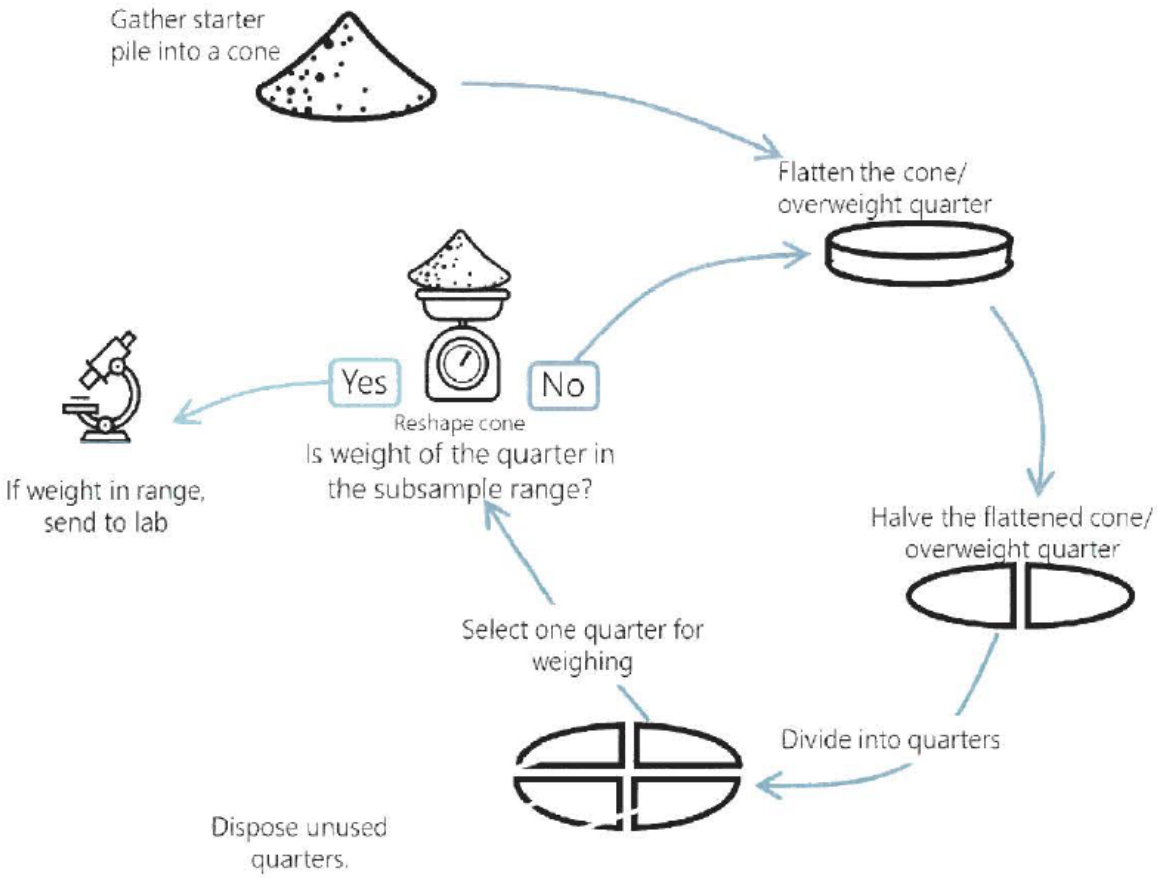
Hand Sorting

All samples were hand-sorted into the 83 material sorting categories using a metal-wired screen with 2-inch-square gaps to allow for small items to fall through. These small items were then categorized under the “mixed residue” sorting category unless small, covered material could safely and practicably be sorted by material class. After each sample was completely sorted, contractor staff weighed the material in each sorting category using a scale accurate to within 0.1 pounds. The sample weight consisted of the sum of the weights of all the sorted components. Contractor staff recorded all weights in decimal pounds.

Characterizing Hard-to-Identify Resins

For characterizing hard-to-identify resins, the sample collection is described in the main report (Section: Additional Analysis Performed by Contractor Staff). For further illustration, the cone and quarter method is illustrated in Figure B2.

Figure B2: Excerpt from Contractor's Sampling Plan - Cone and Quarter Method



Covered Material Weight-to-Volume Conversion Factor

To determine weight-to-volume (density) measurements for covered material categories, contractor staff aggregated sorted categories of covered material. First, contractor staff placed sorted materials from sorting categories containing covered material into separate containers of known volume. Then, contractor staff recorded the height of the material and the net weight of the material. The height of the material and the diameter of the container were used to estimate the volume of the material in the container.

For sampling period one, contractor staff used a 32-gallon barrel for the weight-to-volume (density) measurements. In sampling period two, contractor staff also used a 5-gallon bucket to measure smaller volumes. For smaller volumes or infrequently observed materials, when feasible, contractor staff held these materials over multiple days until more measurable volumes could be obtained. Some categories were very rare resulting in only small volumes of that material being obtained by contractor staff.

Section 2: Data Analysis

This section contains tables representing additional data analysis of collected data.

Section 2.1: CMC Percentage Composition

Table A6: Percentage Composition of Each Covered Material Category Within Material Classes

Data in this table were calculated from the sort material composition to provide the estimated percentage weight of each combined CMC code within each material class. Note that this data was not generated using the frequentist model. The data in this table are used for additional analyses of the Remainder/Composite quality control sort and the depackaging analysis. The column descriptions are:

- Column 1: Material Class: Material class analyzed.
- Column 2: Combined CMC Code: The code of the combined covered material category used in further analyses.
- Column 3: Percentage Weight of CMC in Class: The mean percentage weight of that combined covered material category within the material class, across all samples in the sort.

Material Class	Combined CMC Code	Percentage Weight of CMC in Class
Glass	24_G1N/P	94.9%
Glass	24_G2N/P	1.5%
Glass	24_G3N/P	3.5%
Ceramic	24_C1N/P	13.1%
Ceramic	24_C2N/P	86.9%
Metal	24_M1N/P	3.2%
Metal	24_M2N/P	15.6%
Metal	24_M3N/P	8.2%
Metal	24_M4P	1.6%
Metal	24_M5N/P	4.8%
Metal	24_M6N/P	42.5%
Metal	24_M7P	6.1%
Metal	24_M8N/P	12.4%
Metal	24_M9N/P	1.3%
Metal	24_M10N/P	3.5%
Metal	24_M12N/P	0.7%
Paper and Fiber	24_PF1N/P	6.3%
Paper and Fiber	24_PF14N/P	3.5%
Paper and Fiber	24_PF15P	1.1%
Paper and Fiber	24_PF5P	1.5%
Paper and Fiber	24_PF7P	15.9%
Paper and Fiber	24_PF8N/P	1.1%

Material Class	Combined CMC Code	Percentage Weight of CMC in Class
Paper and Fiber	24_PF9N/P	53.5%
Paper and Fiber	24_PF10N/P	14.2%
Paper and Fiber	24_PF11N/P	0.2%
Paper and Fiber	24_PF12N/P	2.6%
Paper and Fiber	24_PF16N/P	0.1%
Plastic	24_P1P	2.7%
Plastic	24_P2P	0.7%
Plastic	24_P38P	7.1%
Plastic	24_P39P	0.5%
Plastic	24_P5P	0.0%
Plastic	24_P6P	3.5%
Plastic	24_P7P	2.9%
Plastic	24_P8P	2.6%
Plastic	24_P40P	1.8%
Plastic	24_P10P	1.3%
Plastic	24_P11P	0.2%
Plastic	24_P12P	0.1%
Plastic	24_P13P	0.0%
Plastic	24_P14P	0.2%
Plastic	24_P15P	7.2%
Plastic	24_P16P	8.8%
Plastic	24_P17P	0.2%
Plastic	24_P41P	13.9%
Plastic	24_P19P	0.5%
Plastic	24_P20P	1.1%
Plastic	24_P21P	0.2%
Plastic	24_P22P	0.5%
Plastic	24_P23P	2.2%
Plastic	24_P42P	2.4%
Plastic	24_P27P	0.5%
Plastic	24_P43P	2.3%
Plastic	24_P29P	0.1%
Plastic	24_P44P	0.2%
Plastic	24_P45P	0.2%
Plastic	24_P46P	1.6%
Plastic	24_P33P	2.4%
Plastic	24_P34P	0.3%
Plastic	24_P35P	4.4%
Plastic	24_P36P	26.2%
Plastic	24_P47P	1.2%

Material Class	Combined CMC Code	Percentage Weight of CMC in Class
Wood and Other Organic Materials	24_WO1N/P	75.8%
Wood and Other Organic Materials	24_WO2N/P	23.6%
Wood and Other Organic Materials	24_WO3N/P	0.1%
Wood and Other Organic Materials	24_WO4N/P	0.3%
Wood and Other Organic Materials	24_WO6N/P	0.1%

Section 2.2: Additional Statistical Analysis: Composition Estimates

Data and Analysis Assumptions

To establish confidence intervals for estimates of CMC proportions within sectors and statewide, modeling was conducted in the R Statistical Program. First, CMC proportions were calculated within each sample. A CMC proportion is the proportion of total disposed-of material in a given sample, by weight, that the CMC accounts for. This is compositional data, describing the relative frequencies of the multiple components (in this case CMCs and non-CMC remainder categories) that sum to a constant value of 1. These proportions are assumed to follow a Dirichlet distribution, one of the typical distribution models for compositional datasets. In a dataset following the Dirichlet distribution, events can be classified into three or more discrete options, or components (e.g., a sample of disposed-of material can be classified as four different material types), and the occurrence of components is best understood as proportions (e.g., 30% of a sample is composed of material type “X”, by weight) that will sum to a value of 1 (or 100%).

This methodology improves upon previous waste and material characterization studies, which used statistical analyses assuming a normal distribution. While normal distributions are commonly used to represent unknown distributions of random variables, they utilize assumptions that are not optimal when applied to compositional data. Normal distributions disregard that the portion of each component in a sample is affected by all other components, meaning the components covary. In addition, the normal distribution cannot describe bounded data, such as compositional data for which each component has a proportion between zero and one, and the sum of all proportions within a sample must equal one. A Dirichlet distribution specifically models proportions that sum to one, thus improving the model alignment with covariance between components and bounded data.

In addition, the dataset was randomized, followed by frequentist modeling to calculate parameter estimates. This computation quantifies uncertainty in the material composition and robustly analyzes datasets with small sample sizes.

Data Analysis Overview

The dataset was randomized, and modeling was conducted, as follows:

1. Samples were randomized to correct for samples for which one or more CMC was absent (proportion = 0). For each (focal) sample, other samples from the same sector were randomly added to the focal until the new combined sample contained all material types. This process was repeated for each focal sample, which generated a new dataset with the same number of samples as the original. This process was repeated to generate 1,000 of these randomized datasets, for each sector. When randomly adding samples to the focal, the added samples were allowed to come from a different landfill than the focal sample.
2. Modeling was conducted to calculate CMC proportions within each randomized sample. A Frequentist Dirichlet model was then applied to the randomized datasets using the R package “brms” and “DirichletReg” to estimate material type proportions based on the properties of the distribution. Each model returned the maximum likelihood estimate for CMC proportions and the error around those estimates.
3. Confidence intervals were calculated for each CMC proportion within each randomized sample. These calculations use maximum likelihood estimates and errors to simulate 10,000 draws from a multivariate normal distribution, producing 10,000 sets of CMC proportions. The confidence interval is the 95% quantile of these proportions.
4. Estimates were calculated across these models, to generate estimates of CMC proportions within each sector. Estimates were generated by taking the mean of these results, across all models (maximum likelihood estimate; confidence interval; standard deviation of maximum likelihood estimate). Modeling produced estimates of the mean and 95% confidence intervals for each CMC proportion within each sector.
5. Results for each CMC within each sector were scaled and summed to estimate statewide results. The statewide estimates for each CMC were calculated as:

$$D = (C_R \times T_R) + (C_C \times T_C) + (C_M \times T_M) + (C_S \times T_S)$$

- D = statewide estimate of the material category
- C_R = estimate from Residential sector data
- T_R = proportion of study-wide disposal tonnage from Franchised Residential sector
- C_C = estimate from Franchised Commercial sector data
- T_C = proportion of study-wide disposal tonnage from Franchised Commercial sector
- C_M = estimate from Mixed Waste sector data
- T_M = proportion of study-wide disposal tonnage from Mixed Waste sector

- C_S = estimate from Self Haul sector data
- T_S = proportion of study-wide disposal tonnage from Self Haul sector

6. The resulting statewide proportion means (averages) for each CMC were multiplied by the total statewide disposal tonnage to estimate statewide annual disposal for each CMC in tons.

Total statewide annual disposal tonnage for 2024 was retrieved from (RDRS) Report 8: Statewide Totals for Disposal and Disposal-Related Materials (May 2025). The dataset randomization procedure (step 1) requires that each material type (CMC or other) be present within at least two samples in each sector. A single material type failed this threshold for all four sectors: Paper and Fiber - non-CMC - Other/Mixed Paper Potentially Reusable Packaging and Food Service Ware. This material type was absent from all Residential and all Mixed Waste samples. It was present in a single Self-Haul sample at 1.7 lbs. and in a single Franchised Commercial sample at 5 lbs. This is insufficient data for the randomization procedure or to extrapolate to statewide numbers.

Table A7-A: Estimates of Composition by All Material Categories in 2024, by Sector

This table presents composition estimates based on calculations across the sort samples within each sector. This data was generated by applying the frequentist model to sample-scale CMC proportions, as described in Section 2 of this appendix (Statistical Analysis Methods). The first column is the combined CMC code or non-CMC identifier for analysis. Rows with “n/a” in this column are non-CMC sorting categories. The second column identifies the sector for each CMC code. Column three describes the material class, type, and form for the material in that grouping. Column four describes the percentage of samples with the associated material observed. Column five is the estimated mean composition. Column six is lower bound of the 95% confidence interval. Column seven is the upper bound of the 95% confidence interval. Any row with “n/a” for the disposal estimates or confidence interval indicates that the material type was too rare within a given sector to result in an estimate for this analysis. This applies to several material types (see Table A7-B for details on materials too rare for within-sector randomization and further analysis).

*Wood and Other Organic Materials - Wood - All Untreated Forms: Wooden pallets make up a significant portion of this category and likely represent the largest share by weight due to their widespread use in shipping and logistics. Nationally, pallets are often reused and repaired; however, data is not available on the characteristics and circumstances of this reuse. Under the Act, wooden pallets may be considered reuseable, and therefore not covered material, if the requirements of PRC section 42041(af) are met.

For this type of study, it was not possible to differentiate between single-use and reused wooden pallets because that determination requires case-by-case consideration of facts outside the material characterization context. Due to this limitation, all wooden pallets were included in the analysis; given the study only considered wooden pallets that had been disposed of and could not possibly have been destined for additional uses.

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_G1N/P	Franchised Commercial	Glass - Glass - Bottles and Jars	35.7%	0.28%	0.04%	0.73%
24_G2N/P	Franchised Commercial	Glass - Glass - Other Forms	7.1%	0.02%	0.00%	0.19%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_G3N/P	Franchised Commercial	Glass - Glass - Small - Two or more sides measuring 2" or less	15.0%	0.05%	0.00%	0.25%
n/a	Franchised Commercial	Glass - non-CMC - Glass Potentially Reusable Packaging and Food Service Ware	5.0%	0.06%	0.00%	0.31%
n/a	Franchised Commercial	Glass - non-CMC - Remainder/Composite Glass	55.0%	1.05%	0.47%	1.84%
24_C1N/P	Franchised Commercial	Ceramic - Ceramic - All Forms	0.0%	n/a	n/a	n/a
24_C2N/P	Franchised Commercial	Ceramic - Ceramic - Small - Two or more sides measuring 2" or less	2.9%	0.03%	0.00%	0.21%
n/a	Franchised Commercial	Ceramic - non-CMC - Ceramic Potentially Reusable Packaging and Food Service Ware	12.9%	0.12%	0.00%	0.45%
n/a	Franchised Commercial	Ceramic - non-CMC - Remainder/Composite Ceramic	7.9%	0.28%	0.04%	0.73%
24_M1N/P	Franchised Commercial	Metal - Aluminum - Non-aerosol Containers	27.1%	0.05%	0.00%	0.26%
24_M2N/P	Franchised Commercial	Metal - Aluminum - Foil Sheets	60.0%	0.12%	0.00%	0.44%
24_M3N/P	Franchised Commercial	Metal - Aluminum - Foil Molded Containers	38.6%	0.09%	0.00%	0.39%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_M4P	Franchised Commercial	Metal - Aluminum - Aerosol Cans	19.3%	0.03%	0.00%	0.21%
24_M5N/P	Franchised Commercial	Metal - Aluminum - Other Forms	23.6%	0.07%	0.00%	0.33%
24_M6N/P	Franchised Commercial	Metal - Tin/Steel/Bimetal - Non-aerosol Containers	47.1%	0.29%	0.05%	0.75%
24_M7P	Franchised Commercial	Metal - Tin/Steel/Bimetal - Aerosol Cans	30.0%	0.07%	0.00%	0.33%
24_M8N/P	Franchised Commercial	Metal - Tin/Steel/Bimetal - Other Forms	32.1%	0.13%	0.00%	0.46%
24_M9N/P	Franchised Commercial	Metal - Other Nonferrous - All Forms	18.6%	0.04%	0.00%	0.23%
24_M10N/P	Franchised Commercial	Metal - Other Ferrous - All Forms	23.6%	0.06%	0.00%	0.30%
24_M12N/P	Franchised Commercial	Metal - Metal - Small - Two or more sides measuring 2" or less	30.00%	0.04%	0.00%	0.22%
n/a	Franchised Commercial	Metal - non-CMC - Metal Potentially Reusable Packaging and Food Service Ware	8.6%	0.05%	0.00%	0.25%
n/a	Franchised Commercial	Metal - non-CMC - Remainder/Composite Metal	82.1%	3.48%	2.36%	4.80%
24_PF1N/P	Franchised Commercial	Paper and Fiber - Kraft Paper - All Forms	67.1%	0.73%	0.27%	1.41%
24_PF14N/P	Franchised Commercial	Paper and Fiber - Molded Fiber - All Forms	59.3%	0.34%	0.07%	0.83%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_PF15P	Franchised Commercial	Paper and Fiber - Multi-Material Laminate - Aseptic Cartons	52.9%	0.14%	0.01%	0.49%
24_PF5P	Franchised Commercial	Paper and Fiber - Multi-Material Laminate - Gable-top Cartons	51.4%	0.18%	0.01%	0.56%
24_PF7P	Franchised Commercial	Paper and Fiber - Multi-Material Laminate - Other Forms	66.4%	1.15%	0.55%	1.98%
24_PF8N/P	Franchised Commercial	Paper and Fiber - OCC - Waxed Cardboard	38.6%	0.11%	0.00%	0.41%
24_PF9N/P	Franchised Commercial	Paper and Fiber - OCC - Cardboard	80.0%	5.33%	3.93%	6.97%
24_PF10N/P	Franchised Commercial	Paper and Fiber - Paperboard - All Forms	77.9%	1.21%	0.59%	2.07%
24_PF11N/P	Franchised Commercial	Paper and Fiber - White Paper - All Forms	47.1%	0.06%	0.00%	0.29%
24_PF12N/P	Franchised Commercial	Paper and Fiber - Other/Mixed Paper - All Forms	60.7%	0.33%	0.06%	0.82%
24_PF16N/P	Franchised Commercial	Paper and Fiber - Paper and Fiber - Small - Two or more sides measuring 2" or less	42.9%	0.04%	0.00%	0.23%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
n/a	Franchised Commercial	Paper and Fiber - non-CMC - Other/Mixed Paper Potentially Reusable Packaging and Food Service Ware	0.7%	n/a	n/a	n/a
n/a	Franchised Commercial	Paper and Fiber - non-CMC - Other/Mixed Paper Remainder/Composite Mixed Paper	80.0%	7.49%	5.80%	9.36%
24_P1P	Franchised Commercial	Plastic - PET (#1) - Bottles, Jugs, and Jars (Clear/Natural)	56.4%	0.18%	0.01%	0.55%
24_P2P	Franchised Commercial	Plastic - PET (#1) - Bottles, Jugs, and Jars (Pigmented/Color)	43.6%	0.06%	0.00%	0.30%
24_P38P	Franchised Commercial	Plastic - PET (#1) - Other Rigid Containers, Cups, Lids, Plates, Trays, Tubs	65.0%	0.38%	0.09%	0.89%
24_P39P	Franchised Commercial	Plastic - PET (#1) - Other Rigid Items	42.9%	0.07%	0.00%	0.33%
24_P5P	Franchised Commercial	Plastic - PET (#1) - Flexible and Film Items	37.1%	0.03%	0.00%	0.20%
24_P6P	Franchised Commercial	Plastic - HDPE (#2) - Bottles, Jugs, and Jars (Clear/Natural)	56.4%	0.35%	0.07%	0.85%
24_P7P	Franchised Commercial	Plastic - HDPE (#2) - Bottles, Jugs, and Jars (Pigmented/Color)	57.1%	0.21%	0.02%	0.61%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P8P	Franchised Commercial	Plastic - HDPE (#2) - Pails and Buckets	46.4%	0.29%	0.05%	0.75%
24_P40P	Franchised Commercial	Plastic - HDPE (#2) - Other Rigid Items	52.9%	0.11%	0.00%	0.41%
24_P10P	Franchised Commercial	Plastic - HDPE (#2) - Flexible and Film Items	61.4%	0.11%	0.00%	0.42%
24_P11P	Franchised Commercial	Plastic - PVC (#3) - Rigid Items	40.7%	0.04%	0.00%	0.26%
24_P12P	Franchised Commercial	Plastic - PVC (#3) - Flexible and Film Items	41.4%	0.05%	0.00%	0.26%
24_P13P	Franchised Commercial	Plastic - LDPE (#4) - Bottles, Jugs, and Jars	36.4%	0.02%	0.00%	0.18%
24_P14P	Franchised Commercial	Plastic - LDPE (#4) - Other Rigid Items	45.0%	0.04%	0.00%	0.24%
24_P15P	Franchised Commercial	Plastic - LDPE (#4) - Clear Non-Bag Film	66.4%	0.68%	0.24%	1.33%
24_P16P	Franchised Commercial	Plastic - LDPE (#4) - Other Flexible and Film Items	70.7%	0.76%	0.30%	1.43%
24_P17P	Franchised Commercial	Plastic - PP (#5) - Bottles, Jugs, and Jars	39.3%	0.04%	0.00%	0.25%
24_P41P	Franchised Commercial	Plastic - PP (#5) - Other Rigid Containers, Cups, Lids, Plates, Trays, Tubs	71.4%	0.80%	0.31%	1.52%
24_P19P	Franchised Commercial	Plastic - PP (#5) - Utensils	48.6%	0.08%	0.00%	0.36%
24_P20P	Franchised Commercial	Plastic - PP (#5) - Other Rigid Items	43.6%	0.09%	0.00%	0.40%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P21P	Franchised Commercial	Plastic - PP (#5) - Clear Non-Bag Film	43.6%	0.06%	0.00%	0.29%
24_P22P	Franchised Commercial	Plastic - PP (#5) - Other Flexible and Film Items	41.4%	0.05%	0.00%	0.28%
24_P23P	Franchised Commercial	Plastic - PS (#6) - Expanded/Foamed Hinged Containers, Plates, Cups, Tubs, Trays, and Other Foamed Containers	60.7%	0.18%	0.01%	0.55%
24_P42P	Franchised Commercial	Plastic - PS (#6) - Other Expanded/Foamed Forms	60.0%	0.15%	0.01%	0.50%
24_P27P	Franchised Commercial	Plastic - PS (#6) - Utensils	50.0%	0.08%	0.00%	0.36%
24_P43P	Franchised Commercial	Plastic - PS (#6) - Solid Hinged Containers, Plates, Cups, Tubs, Trays, and Other Solid Forms	65.0%	0.19%	0.01%	0.59%
24_P29P	Franchised Commercial	Plastic - PS (#6) - Flexible and Film Items	38.6%	0.03%	0.00%	0.21%
24_P44P	Franchised Commercial	Plastic - Plastics and Polymers Designed for Compostability - Rigid Items	42.1%	0.06%	0.00%	0.29%
24_P45P	Franchised Commercial	Plastic - Plastics and Polymers Designed for Compostability - Flexible and Film Items	37.1%	0.04%	0.00%	0.23%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P46P	Franchised Commercial	Plastic - Multi-Material Laminate - Pouches and Envelopes	57.9%	0.11%	0.00%	0.41%
24_P33P	Franchised Commercial	Plastic - Multi-Material Laminate - Other Forms	68.6%	0.15%	0.01%	0.50%
24_P34P	Franchised Commercial	Plastic - Other/Mixed Plastics – Textiles	41.4%	0.06%	0.00%	0.30%
24_P35P	Franchised Commercial	Plastic - Other/Mixed Plastics - Rigid Items	70.0%	0.31%	0.05%	0.77%
24_P36P	Franchised Commercial	Plastic - Other/Mixed Plastics - Flexible and Film Items	80.7%	1.90%	1.10%	2.93%
24_P47P	Franchised Commercial	Plastic - Plastic - Small - Two or more sides measuring 2" or less	65.0%	0.13%	0.00%	0.47%
n/a	Franchised Commercial	Plastic - non-CMC - Plastic Potentially Reusable Packaging and Food Service Ware	13.6%	0.12%	0.00%	0.43%
n/a	Franchised Commercial	Plastic - non-CMC - Remainder/Composite Plastic	87.9%	7.14%	5.50%	8.99%
24_WO1N/P	Franchised Commercial	Wood and Other Organic Materials - Wood - All Untreated Forms*	21.4%	3.71%	2.54%	5.09%
24_WO2N/P	Franchised Commercial	Wood and Other Organic Materials - Wood - All Treated or Painted Forms	12.1%	0.41%	0.10%	0.93%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_WO3N/P	Franchised Commercial	Wood and Other Organic Materials - Other/Mixed Organic - Textiles	9.3%	0.02%	0.00%	0.18%
24_WO4N/P	Franchised Commercial	Wood and Other Organic Materials - Other/Mixed Organic - Other Forms	8.6%	0.02%	0.00%	0.17%
24_WO6N/P	Franchised Commercial	Wood and Other Organic Materials - Wood and Other Organic Materials - Small - Two or more sides measuring 2" or less	12.9%	0.03%	0.00%	0.19%
n/a	Franchised Commercial	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Potentially Reusable Packaging and Food Service Ware	1.4%	0.04%	0.00%	0.24%
n/a	Franchised Commercial	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Food Discarded in Original Packaging or Food Service Ware	67.9%	3.96%	2.74%	5.37%
n/a	Franchised Commercial	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Remainder/Composite Organic	81.4%	17.26%	14.75%	19.88%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
n/a	Franchised Commercial	Mixed - non-CMC - Mixed Residue	75.0%	2.43%	1.49%	3.59%
n/a	Franchised Commercial	Mixed - non-CMC - Nonfood Discarded in Original Packaging	53.6%	1.15%	0.54%	1.98%
n/a	Franchised Commercial	Mixed - non-CMC - Remainder Miscellaneous	92.9%	32.29%	29.15%	35.49%
24_G1N/P	Franchised Residential	Glass - Glass - Bottles and Jars	91.6%	0.74%	0.51%	1.02%
24_G2N/P	Franchised Residential	Glass - Glass - Other Forms	34.9%	0.02%	0.00%	0.09%
24_G3N/P	Franchised Residential	Glass - Glass - Small - Two or more sides measuring 2" or less	50.6%	0.04%	0.00%	0.12%
n/a	Franchised Residential	Glass - non-CMC - Glass Potentially Reusable Packaging and Food Service Ware	20.5%	0.08%	0.02%	0.19%
n/a	Franchised Residential	Glass - non-CMC - Remainder/Composite Glass	91.6%	1.59%	1.23%	1.98%
24_C1N/P	Franchised Residential	Ceramic - Ceramic - All Forms	3.6%	0.02%	0.00%	0.09%
24_C2N/P	Franchised Residential	Ceramic - Ceramic - Small - Two or more sides measuring 2" or less	6.0%	0.02%	0.00%	0.07%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
n/a	Franchised Residential	Ceramic - non-CMC - Ceramic Potentially Reusable Packaging and Food Service Ware	33.7%	0.10%	0.03%	0.21%
n/a	Franchised Residential	Ceramic - non-CMC - Remainder/Composite Ceramic	18.1%	0.07%	0.01%	0.16%
24_M1N/P	Franchised Residential	Metal - Aluminum - Non-aerosol Container	86.7%	0.06%	0.01%	0.16%
24_M2N/P	Franchised Residential	Metal - Aluminum - Foil Sheets	98.8%	0.24%	0.12%	0.41%
24_M3N/P	Franchised Residential	Metal - Aluminum - Foil Molded Containers	85.5%	0.13%	0.04%	0.26%
24_M4P	Franchised Residential	Metal - Aluminum - Aerosol Cans	60.2%	0.04%	0.00%	0.12%
24_M5N/P	Franchised Residential	Metal - Aluminum - Other Forms	61.4%	0.03%	0.00%	0.09%
24_M6N/P	Franchised Residential	Metal - Tin/Steel/Bimetal - Non-aerosol Container	96.4%	0.56%	0.35%	0.80%
24_M7P	Franchised Residential	Metal - Tin/Steel/Bimetal - Aerosol Cans	69.9%	0.09%	0.02%	0.20%
24_M8N/P	Franchised Residential	Metal - Tin/Steel/Bimetal - Other Forms	75.9%	0.08%	0.02%	0.19%
24_M9N/P	Franchised Residential	Metal - Other Nonferrous - All Forms	42.2%	0.01%	0.00%	0.06%
24_M10N/P	Franchised Residential	Metal - Other Ferrous - All Forms	48.2%	0.03%	0.00%	0.10%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_M12N/P	Franchised Residential	Metal - Metal - Small - Two or more sides measuring 2" or less	69.9%	0.02%	0.00%	0.08%
n/a	Franchised Residential	Metal - non-CMC - Metal Potentially Reusable Packaging and Food Service Ware	31.3%	0.04%	0.00%	0.12%
n/a	Franchised Residential	Metal - non-CMC - Remainder/Composite Metal	98.8%	2.55%	2.09%	3.04%
24_PF1N/P	Franchised Residential	Paper and Fiber - Kraft Paper - All Forms	100.0%	0.40%	0.23%	0.61%
24_PF14N/P	Franchised Residential	Paper and Fiber - Molded Fiber - All Forms	96.4%	0.39%	0.23%	0.60%
24_PF15P	Franchised Residential	Paper and Fiber - Multi-Material Laminate - Aseptic Cartons	100.0%	0.16%	0.06%	0.30%
24_PF5P	Franchised Residential	Paper and Fiber - Multi-Material Laminate - Gable-top Cartons	92.8%	0.16%	0.06%	0.30%
24_PF7P	Franchised Residential	Paper and Fiber - Multi-Material Laminate - Other Forms	98.8%	2.47%	2.03%	2.95%
24_PF8N/P	Franchised Residential	Paper and Fiber - OCC - Waxed Cardboard	63.9%	0.03%	0.00%	0.11%
24_PF9N/P	Franchised Residential	Paper and Fiber - OCC - Cardboard	100.0%	2.01%	1.61%	2.45%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_PF10N/P	Franchised Residential	Paper and Fiber - Paperboard - All Forms	100.0%	2.03%	1.62%	2.47%
24_PF11N/P	Franchised Residential	Paper and Fiber - White Paper - All Forms	77.1%	0.03%	0.00%	0.10%
24_PF12N/P	Franchised Residential	Paper and Fiber - Other/Mixed Paper - All Forms	100.0%	0.27%	0.13%	0.44%
24_PF16N/P	Franchised Residential	Paper and Fiber - Paper and Fiber - Small - Two or more sides measuring 2" or less	73.5%	0.02%	0.00%	0.08%
n/a	Franchised Residential	Paper and Fiber - non-CMC - Other/Mixed Paper Potentially Reusable Packaging and Food Service Ware	0.0%	n/a	n/a	n/a
n/a	Franchised Residential	Paper and Fiber - non-CMC - Other/Mixed Paper Remainder/Composite Mixed Paper	98.8%	11.27%	10.33%	12.23%
24_P1P	Franchised Residential	Plastic - PET (#1) - Bottles, Jugs, and Jars (Clear/Natural)	96.4%	0.35%	0.19%	0.55%
24_P2P	Franchised Residential	Plastic - PET (#1) - Bottles, Jugs, and Jars (Pigmented/Color)	88.0%	0.11%	0.04%	0.24%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P38P	Franchised Residential	Plastic - PET (#1) - Other Rigid Containers, Cups, Lids, Plates, Trays, Tubs	100.0%	0.83%	0.58%	1.12%
24_P39P	Franchised Residential	Plastic - PET (#1) - Other Rigid Items	79.5%	0.05%	0.01%	0.14%
24_P5P	Franchised Residential	Plastic - PET (#1) - Flexible and Film Items	62.7%	0.01%	0.00%	0.04%
24_P6P	Franchised Residential	Plastic - HDPE (#2) - Bottles, Jugs, and Jars (Clear/Natural)	96.4%	0.22%	0.10%	0.38%
24_P7P	Franchised Residential	Plastic - HDPE (#2) - Bottles, Jugs, and Jars (Pigmented/Color)	100.0%	0.32%	0.17%	0.51%
24_P8P	Franchised Residential	Plastic - HDPE (#2) - Pails and Buckets	65.1%	0.08%	0.02%	0.18%
24_P40P	Franchised Residential	Plastic - HDPE (#2) - Other Rigid Items	85.5%	0.17%	0.07%	0.31%
24_P10P	Franchised Residential	Plastic - HDPE (#2) - Flexible and Film Items	98.8%	0.17%	0.07%	0.31%
24_P11P	Franchised Residential	Plastic - PVC (#3) - Rigid Items	73.5%	0.03%	0.00%	0.09%
24_P12P	Franchised Residential	Plastic - PVC (#3) - Flexible and Film Items	73.5%	0.02%	0.00%	0.07%
24_P13P	Franchised Residential	Plastic - LDPE (#4) - Bottles, Jugs, and Jars	63.9%	0.01%	0.00%	0.05%
24_P14P	Franchised Residential	Plastic - LDPE (#4) - Other Rigid Items	81.9%	0.03%	0.00%	0.10%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P15P	Franchised Residential	Plastic - LDPE (#4) - Clear Non-Bag Film	95.2%	0.14%	0.05%	0.27%
24_P16P	Franchised Residential	Plastic - LDPE (#4) - Other Flexible and Film Items	98.8%	0.31%	0.17%	0.50%
24_P17P	Franchised Residential	Plastic - PP (#5) - Bottles, Jugs, and Jars	69.9%	0.03%	0.00%	0.09%
24_P41P	Franchised Residential	Plastic - PP (#5) - Other Rigid Containers, Cups, Lids, Plates, Trays, Tubs	100.0%	1.44%	1.10%	1.82%
24_P19P	Franchised Residential	Plastic - PP (#5) - Utensils	79.5%	0.04%	0.00%	0.12%
24_P20P	Franchised Residential	Plastic - PP (#5) - Other Rigid Items	78.3%	0.05%	0.01%	0.13%
24_P21P	Franchised Residential	Plastic - PP (#5) - Clear Non-Bag Film	62.7%	0.01%	0.00%	0.05%
24_P22P	Franchised Residential	Plastic - PP (#5) - Other Flexible and Film Items	83.1%	0.05%	0.01%	0.14%
24_P23P	Franchised Residential	Plastic - PS (#6) - Expanded/Foamed Hinged Containers, Plates, Cups, Tubs, Trays, and Other Foamed Containers	97.6%	0.21%	0.09%	0.36%
24_P42P	Franchised Residential	Plastic - PS (#6) - Other Expanded/Foamed Forms	90.4%	0.09%	0.03%	0.20%
24_P27P	Franchised Residential	Plastic - PS (#6) - Utensils	80.7%	0.05%	0.01%	0.14%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P43P	Franchised Residential	Plastic - PS (#6) - Solid Hinged Containers, Plates, Cups, Tubs, Trays, and Other Solid Forms	98.8%	0.23%	0.11%	0.39%
24_P29P	Franchised Residential	Plastic - PS (#6) - Flexible and Film Items	63.9%	0.01%	0.00%	0.05%
24_P44P	Franchised Residential	Plastic - Plastics and Polymers Designed for Compostability - Rigid Items	69.9%	0.02%	0.00%	0.08%
24_P45P	Franchised Residential	Plastic - Plastics and Polymers Designed for Compostability - Flexible and Film Items	67.5%	0.04%	0.00%	0.11%
24_P46P	Franchised Residential	Plastic - Multi-Material Laminate - Pouches and Envelopes	98.8%	0.24%	0.11%	0.40%
24_P33P	Franchised Residential	Plastic - Multi-Material Laminate - Other Forms	100.0%	0.34%	0.19%	0.54%
24_P34P	Franchised Residential	Plastic - Other/Mixed Plastics - Textiles	69.9%	0.03%	0.00%	0.10%
24_P35P	Franchised Residential	Plastic - Other/Mixed Plastics - Rigid Items	100.0%	0.44%	0.26%	0.66%
24_P36P	Franchised Residential	Plastic - Other/Mixed Plastics - Flexible and Film Items	98.8%	1.88%	1.50%	2.32%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P47P	Franchised Residential	Plastic - Plastic - Small - Two or more sides measuring 2" or less	98.8%	0.12%	0.04%	0.24%
n/a	Franchised Residential	Plastic - non-CMC - Plastic Potentially Reusable Packaging and Food Service Ware	26.5%	0.04%	0.00%	0.12%
n/a	Franchised Residential	Plastic - non-CMC - Remainder/Composite Plastic	100.0%	6.41%	5.69%	7.17%
24_WO1N/P	Franchised Residential	Wood and Other Organic Materials - Wood - All Untreated Forms*	20.5%	0.01%	0.00%	0.06%
24_WO2N/P	Franchised Residential	Wood and Other Organic Materials - Wood - All Treated or Painted Forms	20.5%	0.02%	0.00%	0.08%
24_WO3N/P	Franchised Residential	Wood and Other Organic Materials - Other/Mixed Organic - Textiles	20.5%	0.01%	0.00%	0.04%
24_WO4N/P	Franchised Residential	Wood and Other Organic Materials - Other/Mixed Organic - Other Forms	20.5%	0.00%	0.00%	0.04%
24_WO6N/P	Franchised Residential	Wood and Other Organic Materials - Wood and Other Organic Materials - Small - Two or more sides measuring 2" or less	30.1%	0.01%	0.00%	0.06%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
n/a	Franchised Residential	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Potentially Reusable Packaging and Food Service Ware	3.6%	0.02%	0.00%	0.07%
n/a	Franchised Residential	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Food Discarded in Original Packaging or Food Service Ware	98.8%	8.07%	7.26%	8.89%
n/a	Franchised Residential	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Remainder/Composite Organic	100.0%	21.14%	19.92%	22.37%
n/a	Franchised Residential	Mixed - non-CMC - Mixed Residue	98.8%	5.11%	4.47%	5.79%
n/a	Franchised Residential	Mixed - non-CMC - Nonfood Discarded in Original Packaging	94.0%	0.81%	0.56%	1.10%
n/a	Franchised Residential	Mixed - non-CMC - Remainder Miscellaneous	98.8%	24.43%	23.16%	25.74%
24_G1N/P	Mixed	Glass - Glass - Bottles and Jars	53.6%	0.32%	0.05%	0.86%
24_G2N/P	Mixed	Glass - Glass - Other Forms	25.0%	0.03%	0.00%	0.21%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_G3N/P	Mixed	Glass - Glass - Small - Two or more sides measuring 2" or less	28.6%	0.04%	0.00%	0.25%
n/a	Mixed	Glass - non-CMC - Glass Potentially Reusable Packaging and Food Service Ware	14.3%	0.06%	0.00%	0.33%
n/a	Mixed	Glass - non-CMC - Remainder/Composite Glass	82.1%	0.84%	0.30%	1.62%
24_C1N/P	Mixed	Ceramic - Ceramic - All Forms	3.6%	n/a	n/a	n/a
24_C2N/P	Mixed	Ceramic - Ceramic - Small - Two or more sides measuring 2" or less	3.6%	n/a	n/a	n/a
n/a	Mixed	Ceramic - non-CMC - Ceramic Potentially Reusable Packaging and Food Service Ware	28.6%	0.08%	0.00%	0.37%
n/a	Mixed	Ceramic - non-CMC - Remainder/Composite Ceramic	42.9%	0.35%	0.06%	0.90%
24_M1N/P	Mixed	Metal - Aluminum - Non-aerosol Container	57.1%	0.08%	0.00%	0.36%
24_M2N/P	Mixed	Metal - Aluminum - Foil Sheets	89.3%	0.20%	0.01%	0.64%
24_M3N/P	Mixed	Metal - Aluminum - Foil Molded Containers	67.9%	0.07%	0.00%	0.35%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_M4P	Mixed	Metal - Aluminum - Aerosol Cans	60.7%	0.07%	0.00%	0.35%
24_M5N/P	Mixed	Metal - Aluminum - Other Forms	60.7%	0.07%	0.00%	0.37%
24_M6N/P	Mixed	Metal - Tin/Steel/Bimetal - Non-aerosol Containers	82.1%	0.38%	0.07%	0.95%
24_M7P	Mixed	Metal - Tin/Steel/Bimetal - Aerosol Can	60.7%	0.12%	0.00%	0.47%
24_M8N/P	Mixed	Metal - Tin/Steel/Bimetal - Other Forms	60.7%	0.12%	0.00%	0.48%
24_M9N/P	Mixed	Metal - Other Nonferrous - All Forms	50.0%	0.03%	0.00%	0.23%
24_M10N/P	Mixed	Metal - Other Ferrous - All Forms	50.0%	0.04%	0.00%	0.26%
24_M12N/P	Mixed	Metal - Metal - Small - Two or more sides measuring 2" or less	64.3%	0.04%	0.00%	0.24%
n/a	Mixed	Metal - non-CMC - Metal Potentially Reusable Packaging and Food Service Ware	10.7%	0.04%	0.00%	0.26%
n/a	Mixed	Metal - non-CMC - Remainder/Composite Metal	92.9%	2.47%	1.45%	3.74%
24_PF1N/P	Mixed	Paper and Fiber - Kraft Paper - All Forms	96.4%	0.94%	0.37%	1.75%
24_PF14N/P	Mixed	Paper and Fiber - Molded Fiber - All Forms	85.7%	0.53%	0.14%	1.17%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_PF15P	Mixed	Paper and Fiber - Multi-Material Laminate - Aseptic Cartons	89.3%	0.16%	0.01%	0.56%
24_PF5P	Mixed	Paper and Fiber - Multi-Material Laminate - Gable-top Cartons	92.9%	0.28%	0.03%	0.78%
24_PF7P	Mixed	Paper and Fiber - Multi-Material Laminate - Other Forms	96.4%	1.50%	0.75%	2.51%
24_PF8N/P	Mixed	Paper and Fiber - OCC - Waxed Cardboard	85.7%	0.48%	0.11%	1.11%
24_PF9N/P	Mixed	Paper and Fiber - OCC - Cardboard	100.0%	5.81%	4.19%	7.64%
24_PF10N/P	Mixed	Paper and Fiber - Paperboard - All Forms	96.4%	1.25%	0.58%	2.20%
24_PF11N/P	Mixed	Paper and Fiber - White Paper - All Forms	85.7%	0.04%	0.00%	0.28%
24_PF12N/P	Mixed	Paper and Fiber - Other/Mixed Paper - All Forms	92.9%	0.31%	0.05%	0.83%
24_PF16N/P	Mixed	Paper and Fiber - Paper and Fiber - Small - Two or more sides measuring 2" or less	85.7%	0.04%	0.00%	0.24%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
n/a	Mixed	Paper and Fiber - non-CMC - Other/Mixed Paper Potentially Reusable Packaging and Food Service Ware	0.0%	n/a	n/a	n/a
n/a	Mixed	Paper and Fiber - non-CMC - Other/Mixed Paper Remainder/Composite Mixed Paper	100.0%	7.03%	5.26%	9.01%
24_P1P	Mixed	Plastic - PET (#1) - Bottles, Jugs, and Jars (Clear/Natural)	96.4%	0.21%	0.01%	0.65%
24_P2P	Mixed	Plastic - PET (#1) - Bottles, Jugs, and Jars (Pigmented/Color)	92.9%	0.14%	0.00%	0.53%
24_P38P	Mixed	Plastic - PET (#1) - Other Rigid Containers, Cups, Lids, Plates, Trays, Tubs	100.0%	0.60%	0.17%	1.30%
24_P39P	Mixed	Plastic - PET (#1) - Other Rigid Items	89.3%	0.07%	0.00%	0.33%
24_P5P	Mixed	Plastic - PET (#1) - Flexible and Film Items	89.3%	0.03%	0.00%	0.21%
24_P6P	Mixed	Plastic - HDPE (#2) - Bottles, Jugs, and Jars (Clear/Natural)	92.9%	0.25%	0.03%	0.75%
24_P7P	Mixed	Plastic - HDPE (#2) - Bottles, Jugs, and Jars (Pigmented/Color)	92.9%	0.27%	0.03%	0.77%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P8P	Mixed	Plastic - HDPE (#2) - Pails and Buckets	89.3%	0.12%	0.00%	0.46%
24_P40P	Mixed	Plastic - HDPE (#2) - Other Rigid Items	89.3%	0.14%	0.00%	0.52%
24_P10P	Mixed	Plastic - HDPE (#2) - Flexible and Film Items	96.4%	0.13%	0.00%	0.51%
24_P11P	Mixed	Plastic - PVC (#3) - Rigid Items	89.3%	0.04%	0.00%	0.26%
24_P12P	Mixed	Plastic - PVC (#3) - Flexible and Film Items	89.3%	0.06%	0.00%	0.31%
24_P13P	Mixed	Plastic - LDPE (#4) - Bottles, Jugs, and Jars	89.3%	0.02%	0.00%	0.20%
24_P14P	Mixed	Plastic - LDPE (#4) - Other Rigid Items	92.9%	0.06%	0.00%	0.32%
24_P15P	Mixed	Plastic - LDPE (#4) - Clear Non-Bag Film	96.4%	0.90%	0.35%	1.73%
24_P16P	Mixed	Plastic - LDPE (#4) - Other Flexible and Film Items	96.4%	0.95%	0.38%	1.79%
24_P17P	Mixed	Plastic - PP (#5) - Bottles, Jugs, and Jars	89.3%	0.04%	0.00%	0.26%
24_P41P	Mixed	Plastic - PP (#5) - Other Rigid Containers, Cups, Lids, Plates, Trays, Tubs	96.4%	1.05%	0.44%	1.92%
24_P19P	Mixed	Plastic - PP (#5) - Utensils	89.3%	0.08%	0.00%	0.38%
24_P20P	Mixed	Plastic - PP (#5) - Other Rigid Items	89.3%	0.27%	0.03%	0.75%
24_P21P	Mixed	Plastic - PP (#5) - Clear Non-Bag Film	89.3%	0.04%	0.00%	0.25%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P22P	Mixed	Plastic - PP (#5) - Other Flexible and Film Items	89.3%	0.11%	0.00%	0.46%
24_P23P	Mixed	Plastic - PS (#6) - Expanded/Foamed Hinged Containers, Plates, Cups, Tubs, Trays, and Other Foamed Containers	96.4%	0.16%	0.01%	0.55%
24_P42P	Mixed	Plastic - PS (#6) - Other Expanded/Foamed Forms	92.9%	0.18%	0.01%	0.59%
24_P27P	Mixed	Plastic - PS (#6) - Utensils	89.3%	0.07%	0.00%	0.34%
24_P43P	Mixed	Plastic - PS (#6) - Solid Hinged Containers, Plates, Cups, Tubs, Trays, and Other Solid Forms	92.9%	0.20%	0.01%	0.64%
24_P29P	Mixed	Plastic - PS (#6) - Flexible and Film Items	89.3%	0.03%	0.00%	0.23%
24_P44P	Mixed	Plastic - Plastics and Polymers Designed for Compostability - Rigid Items	92.9%	0.09%	0.00%	0.40%
24_P45P	Mixed	Plastic - Plastics and Polymers Designed for Compostability - Flexible and Film Items	92.9%	0.04%	0.00%	0.26%
24_P46P	Mixed	Plastic - Multi-Material Laminate - Pouches and Envelopes	92.9%	0.17%	0.01%	0.58%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P33P	Mixed	Plastic - Multi-Material Laminate - Other Forms	96.4%	0.18%	0.01%	0.61%
24_P34P	Mixed	Plastic - Other/Mixed Plastics - Textiles	89.3%	0.08%	0.00%	0.38%
24_P35P	Mixed	Plastic - Other/Mixed Plastics - Rigid Items	96.4%	0.29%	0.04%	0.80%
24_P36P	Mixed	Plastic - Other/Mixed Plastics - Flexible and Film Items	100.0%	1.74%	0.92%	2.82%
24_P47P	Mixed	Plastic - Plastic - Small - Two or more sides measuring 2" or less	92.9%	0.13%	0.00%	0.50%
n/a	Mixed	Plastic - non-CMC - Plastic Potentially Reusable Packaging and Food Service Ware	17.9%	0.13%	0.00%	0.50%
n/a	Mixed	Plastic - non-CMC - Remainder/Composite Plastic	100.0%	7.18%	5.38%	9.21%
24_WO1N/P	Mixed	Wood and Other Organic Materials - Wood - All Untreated Forms*	28.6%	1.29%	0.60%	2.26%
24_WO2N/P	Mixed	Wood and Other Organic Materials - Wood - All Treated or Painted Forms	7.1%	0.03%	0.00%	0.20%
24_WO3N/P	Mixed	Wood and Other Organic Materials - Other/Mixed Organic - Textiles	10.7%	0.02%	0.00%	0.16%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_WO4N/P	Mixed	Wood and Other Organic Materials - Other/Mixed Organic - Other Forms	7.1%	0.01%	0.00%	0.14%
24_WO6N/P	Mixed	Wood and Other Organic Materials - Wood and Other Organic Materials - Small - Two or more sides measuring 2" or less	14.3%	0.03%	0.00%	0.23%
n/a	Mixed	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Potentially Reusable Packaging and Food Service Ware	0.0%	n/a	n/a	n/a
n/a	Mixed	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Food Discarded in Original Packaging or Food Service Ware	92.9%	4.79%	3.36%	6.47%
n/a	Mixed	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Remainder/Composite Organic	96.4%	11.79%	9.50%	14.23%
n/a	Mixed	Mixed - non-CMC - Mixed Residue	96.4%	6.99%	5.22%	8.99%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
n/a	Mixed	Mixed - non-CMC - Nonfood Discarded in Original Packaging	78.6%	1.04%	0.43%	1.89%
n/a	Mixed	Mixed - non-CMC - Remainder Miscellaneous	100.0%	33.94%	30.49%	37.43%
24_G1N/P	Self-haul	Glass - Glass - Bottles and Jars	1.6%	n/a	n/a	n/a
24_G2N/P	Self-haul	Glass - Glass - Other Forms	0.0%	n/a	n/a	n/a
24_G3N/P	Self-haul	Glass - Glass - Small - Two or more sides measuring 2" or less	1.6%	n/a	n/a	n/a
n/a	Self-haul	Glass - non-CMC - Glass Potentially Reusable Packaging and Food Service Ware	0.0%	n/a	n/a	n/a
n/a	Self-haul	Glass - non-CMC - Remainder/Composite Glass	14.5%	0.11%	0.00%	0.53%
24_C1N/P	Self-haul	Ceramic - Ceramic - All Forms	0.0%	n/a	n/a	n/a
24_C2N/P	Self-haul	Ceramic - Ceramic - Small - Two or more sides measuring 2" or less	1.6%	n/a	n/a	n/a
n/a	Self-haul	Ceramic - non-CMC - Ceramic Potentially Reusable Packaging and Food Service Ware	1.6%	n/a	n/a	n/a

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
n/a	Self-haul	Ceramic - non-CMC - Remainder/Composite Ceramic	14.5%	2.08%	1.05%	3.43%
24_M1N/P	Self-haul	Metal - Aluminum - Non-aerosol Container	3.2%	0.03%	0.00%	0.24%
24_M2N/P	Self-haul	Metal - Aluminum - Foil Sheets	9.7%	0.04%	0.00%	0.30%
24_M3N/P	Self-haul	Metal - Aluminum - Foil Molded Containers	3.20%	0.04%	0.00%	0.30%
24_M4P	Self-haul	Metal - Aluminum - Aerosol Can	3.%	0.02%	0.00%	0.21%
24_M5N/P	Self-haul	Metal - Aluminum - Other Forms	3.2%	0.03%	0.00%	0.24%
24_M6N/P	Self-haul	Metal - Tin/Steel/Bimetal - Non-aerosol container	8.1%	0.05%	0.00%	0.35%
24_M7P	Self-haul	Metal - Tin/Steel/Bimetal - Aerosol Can	4.8%	0.06%	0.00%	0.36%
24_M8N/P	Self-haul	Metal - Tin/Steel/Bimetal - Other Forms	6.5%	0.04%	0.00%	0.28%
24_M9N/P	Self-haul	Metal - Other Nonferrous - All Forms	3.2%	0.02%	0.00%	0.21%
24_M10N/P	Self-haul	Metal - Other Ferrous - All Forms	4.8%	0.06%	0.00%	0.37%
24_M12N/P	Self-haul	Metal - Metal - Small - Two or more sides measuring 2" or less	6.5%	0.03%	0.00%	0.26%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
n/a	Self-haul	Metal - non-CMC - Metal Potentially Reusable Packaging and Food Service Ware	3.2%	0.07%	0.00%	0.39%
n/a	Self-haul	Metal - non-CMC - Remainder/Composite Metal	58.1%	5.35%	3.59%	7.43%
24_PF1N/P	Self-haul	Paper and Fiber - Kraft Paper - All Forms	25.8%	0.13%	0.00%	0.56%
24_PF14N/P	Self-haul	Paper and Fiber - Molded Fiber - All Forms	17.7%	0.06%	0.00%	0.37%
24_PF15P	Self-haul	Paper and Fiber - Multi-Material Laminate - Aseptic Cartons	12.9%	0.04%	0.00%	0.28%
24_PF5P	Self-haul	Paper and Fiber - Multi-Material Laminate - Gable-top Cartons	11.3%	0.03%	0.00%	0.25%
24_PF7P	Self-haul	Paper and Fiber - Multi-Material Laminate - Other Forms	25.8%	0.10%	0.00%	0.50%
24_PF8N/P	Self-haul	Paper and Fiber - OCC - Waxed Cardboard	11.3%	0.03%	0.00%	0.25%
24_PF9N/P	Self-haul	Paper and Fiber - OCC - Cardboard	54.8%	4.91%	3.23%	6.90%
24_PF10N/P	Self-haul	Paper and Fiber - Paperboard - All Forms	37.1%	0.16%	0.00%	0.65%
24_PF11N/P	Self-haul	Paper and Fiber - White Paper - All Forms	17.7%	0.04%	0.00%	0.27%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_PF12N/P	Self-haul	Paper and Fiber - Other/Mixed Paper - All Forms	17.7%	0.04%	0.00%	0.29%
24_PF16N/P	Self-haul	Paper and Fiber - Paper and Fiber - Small - Two or more sides measuring 2" or less	11.3%	0.03%	0.00%	0.24%
n/a	Self-haul	Paper and Fiber - non-CMC - Other/Mixed Paper Potentially Reusable Packaging and Food Service Ware	1.6%	n/a	n/a	n/a
n/a	Self-haul	Paper and Fiber - non-CMC - Other/Mixed Paper Remainder/Composite Mixed Paper	40.3%	1.19%	0.45%	2.28%
24_P1P	Self-haul	Plastic - PET (#1) - Bottles, Jugs, and Jars (Clear/Natural)	17.7%	0.07%	0.00%	0.39%
24_P2P	Self-haul	Plastic - PET (#1) - Bottles, Jugs, and Jars (Pigmented/Color)	12.9%	0.03%	0.00%	0.23%
24_P38P	Self-haul	Plastic - PET (#1) - Other Rigid Containers, Cups, Lids, Plates, Trays, Tubs	21.0%	0.05%	0.00%	0.35%
24_P39P	Self-haul	Plastic - PET (#1) - Other Rigid Items	12.9%	0.03%	0.00%	0.27%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P5P	Self-haul	Plastic - PET (#1) - Flexible and Film Items	12.9%	0.02%	0.00%	0.17%
24_P6P	Self-haul	Plastic - HDPE (#2) - Bottles, Jugs, and Jars (Clear/Natural)	12.9%	0.03%	0.00%	0.27%
24_P7P	Self-haul	Plastic - HDPE (#2) - Bottles, Jugs, and Jars (Pigmented/Color)	19.4%	0.06%	0.00%	0.38%
24_P8P	Self-haul	Plastic - HDPE (#2) - Pails and Buckets	22.6%	0.12%	0.00%	0.54%
24_P40P	Self-haul	Plastic - HDPE (#2) - Other Rigid Items	17.7%	0.06%	0.00%	0.36%
24_P10P	Self-haul	Plastic - HDPE (#2) - Flexible and Film Items	19.4%	0.05%	0.00%	0.34%
24_P11P	Self-haul	Plastic - PVC (#3) - Rigid Items	17.7%	0.06%	0.00%	0.38%
24_P12P	Self-haul	Plastic - PVC (#3) - Flexible and Film Items	12.9%	0.02%	0.00%	0.20%
24_P13P	Self-haul	Plastic - LDPE (#4) - Bottles, Jugs, and Jars	12.9%	0.02%	0.00%	0.19%
24_P14P	Self-haul	Plastic - LDPE (#4) - Other Rigid Items	12.9%	0.03%	0.00%	0.27%
24_P15P	Self-haul	Plastic - LDPE (#4) - Clear Non-Bag Film	24.2%	0.11%	0.00%	0.50%
24_P16P	Self-haul	Plastic - LDPE (#4) - Other Flexible and Film Items	30.6%	0.13%	0.00%	0.58%
24_P17P	Self-haul	Plastic - PP (#5) - Bottles, Jugs, and Jars	12.9%	0.02%	0.00%	0.20%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P41P	Self-haul	Plastic - PP (#5) - Other Rigid Containers, Cups, Lids, Plates, Trays, Tubs	25.8%	0.10%	0.00%	0.52%
24_P19P	Self-haul	Plastic - PP (#5) - Utensils	12.9%	0.03%	0.00%	0.28%
24_P20P	Self-haul	Plastic - PP (#5) - Other Rigid Items	14.5%	0.04%	0.00%	0.30%
24_P21P	Self-haul	Plastic - PP (#5) - Clear Non-Bag Film	12.9%	0.03%	0.00%	0.24%
24_P22P	Self-haul	Plastic - PP (#5) - Other Flexible and Film Items	12.9%	0.03%	0.00%	0.22%
24_P23P	Self-haul	Plastic - PS (#6) - Expanded/Foamed Hinged Containers, Plates, Cups, Tubs, Trays, and Other Foamed Containers	16.1%	0.05%	0.00%	0.31%
24_P42P	Self-haul	Plastic - PS (#6) - Other Expanded/Foamed Forms	25.8%	0.26%	0.02%	0.84%
24_P27P	Self-haul	Plastic - PS (#6) - Utensils	16.1%	0.05%	0.00%	0.31%
24_P43P	Self-haul	Plastic - PS (#6) - Solid Hinged Containers, Plates, Cups, Tubs, Trays, and Other Solid Forms	24.2%	0.07%	0.00%	0.42%
24_P29P	Self-haul	Plastic - PS (#6) - Flexible and Film Items	14.5%	0.02%	0.00%	0.22%
24_P44P	Self-haul	Plastic - Plastics and Polymers Designed for Compostability - Rigid Items	12.9%	0.02%	0.00%	0.20%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_P45P	Self-haul	Plastic - Plastics and Polymers Designed for Compostability - Flexible and Film Items	14.5%	0.03%	0.00%	0.24%
24_P46P	Self-haul	Plastic - Multi-Material Laminate - Pouches and Envelopes	16.1%	0.04%	0.00%	0.27%
24_P33P	Self-haul	Plastic - Multi-Material Laminate - Other Forms	27.4%	0.05%	0.00%	0.33%
24_P34P	Self-haul	Plastic - Other/Mixed Plastics - Textiles	12.9%	0.04%	0.00%	0.30%
24_P35P	Self-haul	Plastic - Other/Mixed Plastics - Rigid Items	30.6%	0.12%	0.00%	0.55%
24_P36P	Self-haul	Plastic - Other/Mixed Plastics - Flexible and Film Items	35.5%	0.16%	0.00%	0.63%
24_P47P	Self-haul	Plastic - Plastic - Small - Two or more sides measuring 2" or less	22.6%	0.05%	0.00%	0.34%
n/a	Self-haul	Plastic - non-CMC - Plastic Potentially Reusable Packaging and Food Service Ware	1.6%	n/a	n/a	n/a
n/a	Self-haul	Plastic - non-CMC - Remainder/Composite Plastic	53.2%	1.44%	0.60%	2.63%

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
24_WO1N/P	Self-haul	Wood and Other Organic Materials - Wood - All Untreated Forms*	3.2%	1.12%	0.40%	2.18%
24_WO2N/P	Self-haul	Wood and Other Organic Materials - Wood - All Treated or Painted Forms	1.6%	0.85%	0.26%	1.78%
24_WO3N/P	Self-haul	Wood and Other Organic Materials - Other/Mixed Organic - Textiles	1.6%	n/a	n/a	n/a
24_WO4N/P	Self-haul	Wood and Other Organic Materials - Other/Mixed Organic - Other Forms	0.0%	n/a	n/a	n/a
24_WO6N/P	Self-haul	Wood and Other Organic Materials - Wood and Other Organic Materials - Small - Two or more sides measuring 2" or less	1.6%	n/a	n/a	n/a
n/a	Self-haul	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Potentially Reusable Packaging and Food Service Ware	1.6%	n/a	n/a	n/a

Combined CMC Code	Sector	Material Class, Type, Form	Percent of Samples with Material Observed	Mean Percent Composition (by weight)	95% Confidence Interval Lower Bound (2.5%) Percent Composition (by weight)	95% Confidence Interval Upper Bound (97.5%) Percent Composition (by weight)
n/a	Self-haul	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Food Discarded in Original Packaging or Food Service Ware	14.5%	0.11%	0.00%	0.53%
n/a	Self-haul	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Remainder/Composite Organic	48.4%	10.22%	7.75%	12.92%
n/a	Self-haul	Mixed - non-CMC - Mixed Residue	43.5%	1.94%	0.95%	3.28%
n/a	Self-haul	Mixed - non-CMC - Nonfood Discarded in Original Packaging	21.0%	1.60%	0.72%	2.84%
n/a	Self-haul	Mixed - non-CMC - Remainder Miscellaneous	85.5%	65.82%	61.71%	69.82%

Table A7-B: Rare Material Categories Not Analyzed for Composition Estimates

This table presents details of the materials too rare for within-sector randomization, and thus estimates were not provided for these materials in Table A7-A or further analysis steps. Materials were either not observed or rarely observed during the study. The first column is the combined CMC code or non-CMC identifier for analysis. Rows with “n/a” in this column are non-CMC categories. The second column identifies the sector of interest. Column three describes the material class, type, and form for the material in that grouping. Column four describes the number of samples with the identified material observed and column five has the total weight of the associated material observed reported in pounds. Rows with “n/a” in the fifth column do not have a weight recorded.

CMC Combined Code	Sector	Material Class, Type, Form	Number of Samples with Material Observed	Total Weight of Material Observed (lbs.)
24_C1N/P	Franchised Commercial	Ceramic - Ceramic - All Forms	0	n/a
n/a	Franchised Commercial	Paper and Fiber - non-CMC - Other/Mixed Paper Potentially Reusable Packaging and Food Service Ware	1	5
n/a	Franchised Residential	Paper and Fiber - non-CMC - Other/Mixed Paper Potentially Reusable Packaging and Food Service Ware	0	n/a
24_C1N/P	Mixed	Ceramic - Ceramic - All Forms	1	0.3
24_C2N/P	Mixed	Ceramic - Ceramic - Small - Two or more sides measuring 2" or less	1	0.44
n/a	Mixed	Paper and Fiber - non-CMC - Other/Mixed Paper Potentially Reusable Packaging and Food Service Ware	0	n/a
n/a	Mixed	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Potentially Reusable Packaging and Food Service Ware	0	n/a
24_C1N/P	Self-haul	Ceramic - Ceramic - All Forms	0	n/a
24_C2N/P	Self-haul	Ceramic - Ceramic - Small - Two or more sides measuring 2" or less	1	21.12

CMC Combined Code	Sector	Material Class, Type, Form	Number of Samples with Material Observed	Total Weight of Material Observed (lbs.)
n/a	Self-haul	Ceramic - non-CMC - Ceramic Potentially Reusable Packaging and Food Service Ware	1	1.15
24_G1N/P	Self-haul	Glass - Glass – Bottles and Jars	1	0.52
24_G2N/P	Self-haul	Glass - Glass - Other Forms	0	n/a
24_G3N/P	Self-haul	Glass - Glass - Small - Two or more sides measuring 2" or less	1	0.04
n/a	Self-haul	Glass - non-CMC - Glass Potentially Reusable Packaging and Food Service Ware	0	n/a
n/a	Self-haul	Paper and Fiber - non-CMC - Other/Mixed Paper Potentially Reusable Packaging and Food Service Ware	1	1.7
n/a	Self-haul	Plastic - non-CMC - Plastic Potentially Reusable Packaging and Food Service Ware	1	2.85
24_WO3N/P	Self-haul	Wood and Other Organic Materials - Other/Mixed Organic - Textiles	1	0.85
24_WO4N/P	Self-haul	Wood and Other Organic Materials - Other/Mixed Organic - Other Forms	0	n/a
24_WO6N/P	Self-haul	Wood and Other Organic Materials - Wood and Other Organic Materials - Small - Two or more sides measuring 2" or less	1	0.84
n/a	Self-haul	Wood and Other Organic Materials – non-CMC – Other/ Mixed Organic Potentially Reusable Packaging and Food Service Ware	1	0.02

Table A8: Estimates of Statewide Disposal of All Material Categories in 2024

This table is an expansion of Table 6 in the main report, with disposal estimates for non-CMC items included. Non-CMC items include sorting categories to capture potentially reusable packaging and food service ware and a single sorting

category per material class that includes all remainder material. These results are calculated as a sector-weighted summary of Table A7, which was generated by applying the frequentist model to sample-scale CMC proportions, as described in Section 2 of this appendix (Statistical Analysis Methods). Each row of the table contains data for each sorting category for covered material. The first two columns identify the sorting category by combined CMC code, and combined material class, type, and form. Any item with “n/a” in the Combined CMC Code column is a non-CMC material type characterized within the study. The third column is the annual average (mean) statewide disposal estimate in tons. The fourth column is the estimated annual average (mean) percentage of total statewide disposal that each sorting category accounts for. The fifth column is the 95% confidence interval (2.5% - 97.5%) for the percentage of total statewide disposal. All sorting categories with a corresponding code starting with “24_” are categories specific to covered material. Additionally, in the code column, the alphanumeric material code ends with an “N” and/or a “P” indicating whether the item contains an inseparable plastic component (P) or contains no plastic component (N). An “N/P” indicates that the material form contains two covered materials, one with and one without inseparable plastic components. Any row with “n/a” for the disposal estimates or confidence interval indicates that the material type was too rare to produce estimates. This applies to a single material type, Paper and Fiber - non-CMC - Other/Mixed Paper Potentially Reusable Packaging and Food Service Ware (see Section 2.2, Statistical Analysis Methods).

*Wood and Other Organic Materials - Wood - All Untreated Forms”, wooden pallets make up a significant share by weight within this material class. See Appendix 1, Table A7-A for additional details.

Combined CMC Code	Material Class, Type, Form	Average (mean) Annual Statewide Disposal (tons)	Percentage of Total Statewide Disposal	95% Confidence Interval for Percentage of Total Statewide Disposal
24_G1N/P	Glass - Glass - Bottles and Jars	130,502	0.33%	0.10% - 0.75%
24_G2N/P	Glass - Glass - Other Forms	9,249	0.02%	0.00% - 0.17%
24_G3N/P	Glass - Glass - Small - Two or more sides measuring 2" or less	14,398	0.04%	0.00% - 0.21%
n/a	Glass - non-CMC - Glass Potentially Reusable Packaging and Food Service Ware	23,441	0.06%	0.00% - 0.27%
n/a	Glass - non-CMC - Remainder/Composite Glass	362,868	0.91%	0.43% - 1.60%

Combined CMC Code	Material Class, Type, Form	Average (mean) Annual Statewide Disposal (tons)	Percentage of Total Statewide Disposal	95% Confidence Interval for Percentage of Total Statewide Disposal
24_C1N/P	Ceramic - Ceramic - All Forms	1,172	0.00%	0.00% - 0.01%
24_C2N/P	Ceramic - Ceramic - Small - Two or more sides measuring 2" or less	4,391	0.01%	0.00% - 0.07%
n/a	Ceramic - non-CMC - Ceramic Potentially Reusable Packaging and Food Service Ware	33,292	0.08%	0.00% - 0.33%
n/a	Ceramic - non-CMC - Remainder/Composite Ceramic	195,156	0.49%	0.16% - 1.05%
24_M1N/P	Metal - Aluminum - Non-aerosol Containers	24,454	0.06%	0.00% - 0.29%
24_M2N/P	Metal - Aluminum - Foil Sheets	66,305	0.17%	0.02% - 0.52%
24_M3N/P	Metal - Aluminum - Foil Molded Containers	32,213	0.08%	0.01% - 0.34%
24_M4P	Metal - Aluminum - Aerosol Can	19,392	0.05%	0.00% - 0.27%
24_M5N/P	Metal - Aluminum - Other Forms	24,533	0.06%	0.00% - 0.31%
24_M6N/P	Metal - Tin/Steel/Bimetal - Non-aerosol Containers	137,393	0.34%	0.09% - 0.81%
24_M7P	Metal - Tin/Steel/Bimetal - Aerosol Can	38,929	0.10%	0.00% - 0.39%
24_M8N/P	Metal - Tin/Steel/Bimetal - Other Forms	44,148	0.11%	0.00% - 0.42%
24_M9N/P	Metal - Other Nonferrous - All Forms	11,762	0.03%	0.00% - 0.21%
24_M10N/P	Metal - Other Ferrous - All Forms	19,579	0.05%	0.00% - 0.27%
24_M12N/P	Metal - Metal - Small - Two or more sides measuring 2" or less	13,557	0.03%	0.00% - 0.22%

Combined CMC Code	Material Class, Type, Form	Average (mean) Annual Statewide Disposal (tons)	Percentage of Total Statewide Disposal	95% Confidence Interval for Percentage of Total Statewide Disposal
n/a	Metal - non-CMC - Metal Potentially Reusable Packaging and Food Service Ware	18,771	0.05%	0.00% - 0.26%
n/a	Metal - non-CMC - Remainder/Composite Metal	1,228,343	3.07%	2.01% - 4.35%
24_PF1N/P	Paper and Fiber - Kraft Paper - All Forms	289,887	0.72%	0.28% - 1.38%
24_PF14N/P	Paper and Fiber - Molded Fiber - All Forms	163,462	0.41%	0.12% - 0.92%
24_PF15P	Paper and Fiber - Multi-Material Laminate - Aseptic Cartons	57,344	0.14%	0.01% - 0.48%
24_PF5P	Paper and Fiber - Multi-Material Laminate - Gable-top Cartons	84,452	0.21%	0.03% - 0.60%
24_PF7P	Paper and Fiber - Multi-Material Laminate - Other Forms	549,429	1.37%	0.77% - 2.20%
24_PF8N/P	Paper and Fiber - OCC - Waxed Cardboard	109,451	0.27%	0.06% - 0.70%
24_PF9N/P	Paper and Fiber - OCC - Cardboard	2,042,929	5.10%	3.69% - 6.73%
24_PF10N/P	Paper and Fiber - Paperboard - All Forms	487,428	1.22%	0.65% - 2.03%
24_PF11N/P	Paper and Fiber - White Paper - All Forms	18,512	0.05%	0.00% - 0.26%
24_PF12N/P	Paper and Fiber - Other/Mixed Paper - All Forms	112,428	0.28%	0.06% - 0.72%
24_PF16N/P	Paper and Fiber - Paper and Fiber - Small - Two or more sides measuring 2" or less	14,054	0.04%	0.00% - 0.22%

Combined CMC Code	Material Class, Type, Form	Average (mean) Annual Statewide Disposal (tons)	Percentage of Total Statewide Disposal	95% Confidence Interval for Percentage of Total Statewide Disposal
n/a	Paper and Fiber - non-CMC - Other/Mixed Paper Potentially Reusable Packaging and Food Service Ware	n/a	n/a	n/a
n/a	Paper and Fiber - non-CMC - Other/Mixed Paper Remainder/Composite Mixed Paper	2,814,974	7.03%	5.50% - 8.75%
24_P1P	Plastic - PET (#1) - Bottles, Jugs, and Jars (Clear/Natural)	80,445	0.20%	0.03% - 0.58%
24_P2P	Plastic - PET (#1) - Bottles, Jugs, and Jars (Pigmented/Color)	42,204	0.11%	0.01% - 0.40%
24_P38P	Plastic - PET (#1) - Other Rigid Containers, Cups, Lids, Plates, Trays, Tubs	204,712	0.51%	0.18% - 1.06%
24_P39P	Plastic - PET (#1) - Other Rigid Items	24,929	0.06%	0.00% - 0.30%
24_P5P	Plastic - PET (#1) - Flexible and Film Items	9,568	0.02%	0.00% - 0.18%
24_P6P	Plastic - HDPE (#2) - Bottles, Jugs, and Jars (Clear/Natural)	99,816	0.25%	0.04% - 0.67%
24_P7P	Plastic - HDPE (#2) - Bottles, Jugs, and Jars (Pigmented/Color)	94,893	0.24%	0.04% - 0.65%
24_P8P	Plastic - HDPE (#2) - Pails and Buckets	62,945	0.16%	0.02% - 0.51%
24_P40P	Plastic - HDPE (#2) - Other Rigid Items	50,724	0.13%	0.01% - 0.45%
24_P10P	Plastic - HDPE (#2) - Flexible and Film Items	48,778	0.12%	0.01% - 0.44%

Combined CMC Code	Material Class, Type, Form	Average (mean) Annual Statewide Disposal (tons)	Percentage of Total Statewide Disposal	95% Confidence Interval for Percentage of Total Statewide Disposal
24_P11P	Plastic - PVC (#3) - Rigid Items	16,679	0.04%	0.00% - 0.25%
24_P12P	Plastic - PVC (#3) - Flexible and Film Items	18,125	0.05%	0.00% - 0.25%
24_P13P	Plastic - LDPE (#4) - Bottles, Jugs, and Jars	8,850	0.02%	0.00% - 0.18%
24_P14P	Plastic - LDPE (#4) - Other Rigid Items	19,351	0.05%	0.00% - 0.26%
24_P15P	Plastic - LDPE (#4) - Clear Non-Bag Film	263,481	0.66%	0.24% - 1.30%
24_P16P	Plastic - LDPE (#4) - Other Flexible and Film Items	290,978	0.73%	0.29% - 1.40%
24_P17P	Plastic - PP (#5) - Bottles, Jugs, and Jars	14,411	0.04%	0.00% - 0.23%
24_P41P	Plastic - PP (#5) - Other Rigid Containers, Cups, Lids, Plates, Trays, Tubs	371,670	0.93%	0.44% - 1.65%
24_P19P	Plastic - PP (#5) - Utensils	28,091	0.07%	0.00% - 0.33%
24_P20P	Plastic - PP (#5) - Other Rigid Items	67,550	0.17%	0.02% - 0.53%
24_P21P	Plastic - PP (#5) - Clear Non-Bag Film	15,639	0.04%	0.00% - 0.24%
24_P22P	Plastic - PP (#5) - Other Flexible and Film Items	31,560	0.08%	0.00% - 0.34%
24_P23P	Plastic - PS (#6) - Expanded/Foamed Hinged Containers, Plates, Cups, Tubs, Trays, and Other Foamed Containers	62,525	0.16%	0.02% - 0.50%

Combined CMC Code	Material Class, Type, Form	Average (mean) Annual Statewide Disposal (tons)	Percentage of Total Statewide Disposal	95% Confidence Interval for Percentage of Total Statewide Disposal
24_P42P	Plastic - PS (#6) - Other Expanded/Foamed Forms	68,405	0.17%	0.01% - 0.55%
24_P27P	Plastic - PS (#6) - Utensils	27,176	0.07%	0.00% - 0.32%
24_P43P	Plastic - PS (#6) - Solid Hinged Containers, Plates, Cups, Tubs, Trays, and Other Solid Forms	75,115	0.19%	0.02% - 0.57%
24_P29P	Plastic - PS (#6) - Flexible and Film Items	11,189	0.03%	0.00% - 0.20%
24_P44P	Plastic - Plastics and Polymers Designed for Compostability - Rigid Items	25,519	0.06%	0.00% - 0.31%
24_P45P	Plastic - Plastics and Polymers Designed for Compostability - Flexible and Film Items	15,247	0.04%	0.00% - 0.23%
24_P46P	Plastic - Multi-Material Laminate - Pouches and Envelopes	58,962	0.15%	0.02% - 0.48%
24_P33P	Plastic - Multi-Material Laminate - Other Forms	72,604	0.18%	0.03% - 0.54%
24_P34P	Plastic - Other/Mixed Plastics - Textiles	25,786	0.06%	0.00% - 0.32%
24_P35P	Plastic - Other/Mixed Plastics - Rigid Items	117,993	0.29%	0.07% - 0.75%
24_P36P	Plastic - Other/Mixed Plastics - Flexible and Film Items	650,085	1.62%	0.94% - 2.54%
24_P47P	Plastic - Plastic - Small - Two or more sides measuring 2" or less	47,791	0.12%	0.01% - 0.44%
n/a	Plastic - non-CMC - Plastic Potentially Reusable Packaging and Food Service Ware	40,943	0.10%	0.00% - 0.38%

Combined CMC Code	Material Class, Type, Form	Average (mean) Annual Statewide Disposal (tons)	Percentage of Total Statewide Disposal	95% Confidence Interval for Percentage of Total Statewide Disposal
n/a	Plastic - non-CMC - Remainder/Composite Plastic	2,575,361	6.43%	4.92% - 8.16%
24_WO1N/P	Wood and Other Organic Materials - Wood - All Untreated Forms*	703,062	1.76%	1.02% - 2.73%
24_WO2N/P	Wood and Other Organic Materials - Wood - All Treated or Painted Forms	87,378	0.22%	0.05% - 0.56%
24_WO3N/P	Wood and Other Organic Materials - Other/Mixed Organic - Textiles	6,386	0.02%	0.00% - 0.13%
24_WO4N/P	Wood and Other Organic Materials - Other/Mixed Organic - Other Forms	5,369	0.01%	0.00% - 0.12%
24_WO6N/P	Wood and Other Organic Materials - Wood and Other Organic Materials - Small - Two or more sides measuring 2" or less	9,804	0.02%	0.00% - 0.17%
n/a	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Potentially Reusable Packaging and Food Service Ware	4,820	0.01%	0.00% - 0.07%
n/a	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Food Discarded in Original Packaging or Food Service Ware	1,785,392	4.46%	3.31% - 5.82%

Combined CMC Code	Material Class, Type, Form	Average (mean) Annual Statewide Disposal (tons)	Percentage of Total Statewide Disposal	95% Confidence Interval for Percentage of Total Statewide Disposal
n/a	Wood and Other Organic Materials - non-CMC - Other/Mixed Organic Remainder/Composite Organic	5,701,535	14.24%	12.01% - 16.61%
n/a	Mixed - non-CMC - Mixed Residue	1,993,708	4.98%	3.66% - 6.52%
n/a	Mixed - non-CMC - Nonfood Discarded in Original Packaging	441,331	1.10%	0.51% - 1.92%
n/a	Mixed - non-CMC - Remainder Miscellaneous	14,358,564	35.86%	32.69% - 39.06%

Table A9-A: Weight-to-Volume (Density) Measurements for Sorting Categories Containing Covered Material in 2024

This table shows the calculated density values for certain categories containing covered material. See Table A9-B for details on CMCs rarely observed and excluded. The first column is the CMC code. The second through fourth columns list the covered material class, type, and form. The fifth column shows the calculated density in pounds per cubic yard.

Combined CMC Code	Class	Type	Form	Density (lbs./cy)
24_G1N/P	Glass	Glass	Bottles and Jars	583.10
24_M1N/P	Metal	Aluminum	Non-aerosol Containers	116.01
24_M2N/P	Metal	Aluminum	Foil Sheets	147.36
24_M3N/P	Metal	Aluminum	Foil Molded Containers	47.88
24_M6N/P	Metal	Tin/Steel/Bimetal	Non-aerosol Containers	165.02
24_M7P	Metal	Tin/Steel/Bimetal	Aerosol Cans	133.50
24_M8N/P	Metal	Tin/Steel/Bimetal	Other Forms	190.47
24_M10N/P	Metal	Other Ferrous	All Other Forms	115.87
24_M12N/P	Metal	Metal	Small – Two or more sides measuring 2” or less	371.82
24_PF1N/P	Paper and Fiber	Kraft Paper	All Forms	62.05

Combined CMC Code	Class	Type	Form	Density (lbs./cy)
24_PF14N/P	Paper and Fiber	Molded Fiber	All Forms	73.27
24_PF15P	Paper and Fiber	Multi-Material Laminate	Aseptic Cartons	87.30
24_PF5P	Paper and Fiber	Multi-Material Laminate	Gable-top Cartons	74.91
24_PF7P	Paper and Fiber	Multi-Material Laminate	Other Forms	99.52
24_PF8N/P	Paper and Fiber	OCC	Waxed Cardboard	93.09
24_PF9N/P	Paper and Fiber	OCC	Cardboard	87.64
24_PF10N/P	Paper and Fiber	Paperboard	All Forms	91.64
24_PF11N/P	Paper and Fiber	White Paper	All Forms	41.52
24_PF12N/P	Paper and Fiber	Other/Mixed Paper	All Forms	52.57
24_PF16N/P	Paper and Fiber	Paper/ Fiber	Small – Two or more sides measuring 2” or less	158.41
24_P1P	Plastic	PET (#1)	Bottles, Jugs, and Jars (Clear/Natural)	105.29
24_P2P	Plastic	PET (#1)	Bottles, Jugs, and Jars (Pigmented/Color)	96.40
24_P38P	Plastic	PET (#1)	Other Rigid Containers, Cups, Lids Plates, Trays, Tubs	49.32
24_P39P	Plastic	PET (#1)	Other Rigid Items	28.48
24_P6P	Plastic	HDPE (#2)	Bottles, Jugs, and Jars (Clear/Natural)	44.37
24_P7P	Plastic	HDPE (#2)	Bottles, Jugs, and Jars (Pigmented/Color)	64.77
24_P8P	Plastic	HDPE (#2)	Pails and Buckets	84.90
24_P40P	Plastic	HDPE (#2)	Other Rigid Items	68.89
24_P10P	Plastic	HDPE (#2)	Flexible and Film Items	20.96
24_P11P	Plastic	PVC (#3)	Rigid Items	53.94
24_P12P	Plastic	PVC (#3)	Flexible and Film	42.52
24_P13P	Plastic	LDPE (#4)	Bottles, Jugs, and Jars	72.71

Combined CMC Code	Class	Type	Form	Density (lbs./cy)
24_P14P	Plastic	LDPE (#4)	Other Rigid Items	153.54
24_P15P	Plastic	LDPE (#4)	Clear Non-Bag Film	46.34
24_P16P	Plastic	LDPE (#4)	Other Flexible and Film Items	26.33
24_P17P	Plastic	PP (#5)	Bottles, Jugs, and Jars	106.18
24_P41P	Plastic	PP (#5)	Other Rigid Containers, Cups, Lids, Plates, Trays, and Tubs	47.51
24_P19P	Plastic	PP (#5)	Utensils	201.41
24_P22P	Plastic	PP (#5)	Other Flexible and Film Items	15.77
24_P23P	Plastic	PS (#6)	Expanded/Foamed Hinged Containers, Plates, Cups, Tubs, Trays, and Other Foamed Containers	23.39
24_P42P	Plastic	PS (#6)	Other Expanded/Foamed Forms	22.04
24_P27P	Plastic	PS (#6)	Utensils	164.62
24_P43P	Plastic	PS (#6)	Solid Hinged Containers, Plates, Cups, Tubs, Trays, and Other Solid Forms	60.63
24_P44P	Plastic	Plastics and Polymers Designed for Compostability	Rigid Items	76.16
24_P46P	Plastic	Multi-Material Laminate	Pouches and Envelopes	32.53
24_P33P	Plastic	Multi-Material Laminate	Other Forms	31.63
24_P35P	Plastic	Other/ Mixed Plastics	Rigid Items	65.31
24_P36P	Plastic	Other/ Mixed Plastics	Flexible and Film Items	71.61
24_P47P	Plastic	Plastic	Small – Two or more sides measuring 2” or less	119.35

Combined CMC Code	Class	Type	Form	Density (lbs./cy)
24_WO1N/P	Wood and Other Organic Materials	Wood	All Untreated Forms	835.10
24_WO6N/P	Wood and Other Organic Materials	Wood and Other Organic	Small – Two or more sides measuring 2” or less	125.03

Table A9-B: Rare Material Categories Not Analyzed for Weight-to-Volume Measurements

This table shows details of sorting categories containing CMCs that were encountered too infrequently for weight-to-volume (density) measurements and thus were not included in Table A9-A. The first column is the CMC code. The second through fourth columns list the covered material class, type, and form. The fifth column shows the count of the number of samples observed.

Combined CMC Code	Class	Type	Form	Item Count
24_G2N/P	Glass	Glass	Other Forms	2
24_G3N/P	Glass	Glass	Small – Two or more sides measuring 2” or less	2
24_C1N/P	Ceramic	Ceramic	All Forms	0
24_C2N/P	Ceramic	Ceramic	Small – Two or more sides measuring 2” or less	1
24_M4P	Metal	Aluminum	Aerosol Cans	2
24_M5N/P	Metal	Aluminum	Other Forms	2
24_M9N/P	Metal	Other Non-Ferrous	All Other Forms	1
24_P5P	Plastic	PET (#1)	Flexible and Film Items	2
24_P20P	Plastic	PP (#5)	Other Rigid Items	2
24_P21P	Plastic	PP (#5)	Clear Non-Bag Film	2
24_P29P	Plastic	PS (#6)	Flexible and Film Items	1
24_P45P	Plastic	Plastics and Polymers Designed for Compostability	Flexible and Film Items	2
24_P34P	Plastic	Other/ Mixed Plastics	Textiles (non-organic/synthetic)	2
24_WO2N/P	Wood and Other Organic Materials	Wood	All Treated or Painted Forms	2
24_WO3N/P	Wood and Other Organic Materials	Other/Mixed Organic	Textiles	2
24_WO4N/P	Wood and Other Organic Materials	Other/Mixed Organic	Other Forms	0

Table A10-A: Estimates of Food Discarded in Covered Material by Sector

This table shows, by sector, the average composition of depackaged food discarded in original packaging composed of covered material. See Table A10-C for details on estimates of covered material discarded with food inside by sector and class. The first column in Table A-10A shows the sector from which the sample was collected. The second column shows the component weighed (food inside or covered material). The third column shows the average (mean) percentage of the sample composition by weight. The fourth column shows the number of samples depackaged from each sector. Contractor staff analyzed a total of 85 samples for food discarded in covered material.

Sector	Sample Composition (Food inside or Covered Material)	Average Proportion of Sample Composition (mean %)	Number of Samples Analyzed
Franchised Commercial	Food inside	87.7%	24
	Covered material	12.3%	
Franchised Residential	Food inside	87.0%	24
	Covered material	13.0%	
Mixed	Food inside	88.4%	31
	Covered material	11.6%	
Self-Haul	Food inside	82.3%	3
	Covered material	17.7%	

Table A10-B: Estimates of Nonfood (Good) Discarded in Covered Material by Sector

This table shows, by sector, the average composition of depackaged nonfood (good) discarded in original packaging composed of covered material. See Table A10-D for details on estimates of covered material discarded with nonfood (good) inside by sector and class. The first column in Table A10-B shows the sector from which the sample was collected. The second column shows the component weighed (nonfood (good) inside or covered material). The third column shows the average (mean) percentage of the sample composition by weight. The fourth column shows the number of samples depackaged from each sector. Contractor staff analyzed a total of 78 samples for nonfood (good) discarded in covered material.

Sector	Sample Composition (Nonfood [good] inside or Covered Material)	Average Proportion of Sample Composition (mean %)	Number of Samples Analyzed
Franchised Commercial	Nonfood (good) inside	71.8%	17
	Covered material	28.2%	
Franchised Residential	Nonfood (good) inside	71.6%	21
	Covered material	28.4%	
Mixed	Nonfood (good) inside	60.2%	29
	Covered material	39.8%	
Self-Haul	Nonfood (good) inside	85.3%	8
	Covered material	14.7%	

Table A10-C: Estimates of Covered Material Discarded with Food Inside by Sector and Class

This table shows, by sector and class, the average proportional composition of depackaged food discarded in original packaging composed of covered material. The first column shows the sector from which the sample was collected. The second column shows the material class weighed. The third column shows the average (mean) percentage of the covered material class by weight. The fourth column shows the number of samples depackaged from each sector. Contractor staff analyzed a total of 85 samples for food discarded in covered material.

Sector	Class	Average Proportion of Packaging Composition, by Class (mean %)	Number of Samples Analyzed
Franchised Commercial	Glass	3.2%	24
Franchised Commercial	Metal	5.4%	24
Franchised Commercial	Organic	0.0%	24
Franchised Commercial	Paper	28.2%	24
Franchised Commercial	Plastic	0.6%	24
Franchised Residential	Glass	19.9%	31
Franchised Residential	Metal	8.7%	31
Franchised Residential	Organic	0.1%	31
Franchised Residential	Paper	16.4%	31
Franchised Residential	Plastic	55.0%	31
Mixed	Glass	9.7%	24
Mixed	Metal	2.2%	24
Mixed	Organic	0.0%	24
Mixed	Paper	22.6%	24
Mixed	Plastic	65.4%	24
Self-Haul	Glass	0.0%	3
Self-Haul	Metal	0.0%	3
Self-Haul	Organic	0.0%	3
Self-Haul	Paper	0.0%	3
Self-Haul	Plastic	100%	3

Table A10-D: Estimates of Covered Material Discarded with Nonfood (Good) Inside by Sector and Class

This table shows, by sector and class, the average proportional composition of depackaged nonfood (good) discarded in original packaging composed of covered material. The first column shows the sector from which the sample was collected, and the second column shows the material class weighed. The third column shows the average (mean) percentage of the covered material class, by weight. The fourth column shows the number of samples depackaged from each sector. Contractor staff analyzed a total of 78 samples for nonfood (good) discarded in covered material.

Sector	Class	Average Proportion of Packaging Composition, by Class (mean %)	Number of Samples Analyzed
Franchised Commercial	Ceramic	0.0%	17
Franchised Commercial	Glass	15.2%	17
Franchised Commercial	Metal	1.2%	17
Franchised Commercial	Organic	0.0%	17
Franchised Commercial	Paper	25.6%	17
Franchised Commercial	Plastic	58.0%	17
Franchised Residential	Ceramic	8.8%	29
Franchised Residential	Glass	15.5%	29
Franchised Residential	Metal	4.0%	29
Franchised Residential	Organic	0.0%	29
Franchised Residential	Paper	12.9%	29
Franchised Residential	Plastic	65.1%	29
Mixed	Ceramic	0.0%	21
Mixed	Glass	16.7%	21
Mixed	Metal	9.7%	21
Mixed	Organic	0.0%	21
Mixed	Paper	16.6%	21
Mixed	Plastic	57.0%	21
Self-Haul	Ceramic	0.0%	8
Self-Haul	Glass	0.0%	8
Self-Haul	Metal	0.0%	8
Self-Haul	Organic	0.0%	8
Self-Haul	Paper	14.2%	8
Self-Haul	Plastic	85.8%	8