Thinking beyond the box

Stewardship Ontario

# Curbside Material Composition Study: Full Study Conducted in 2012/2013

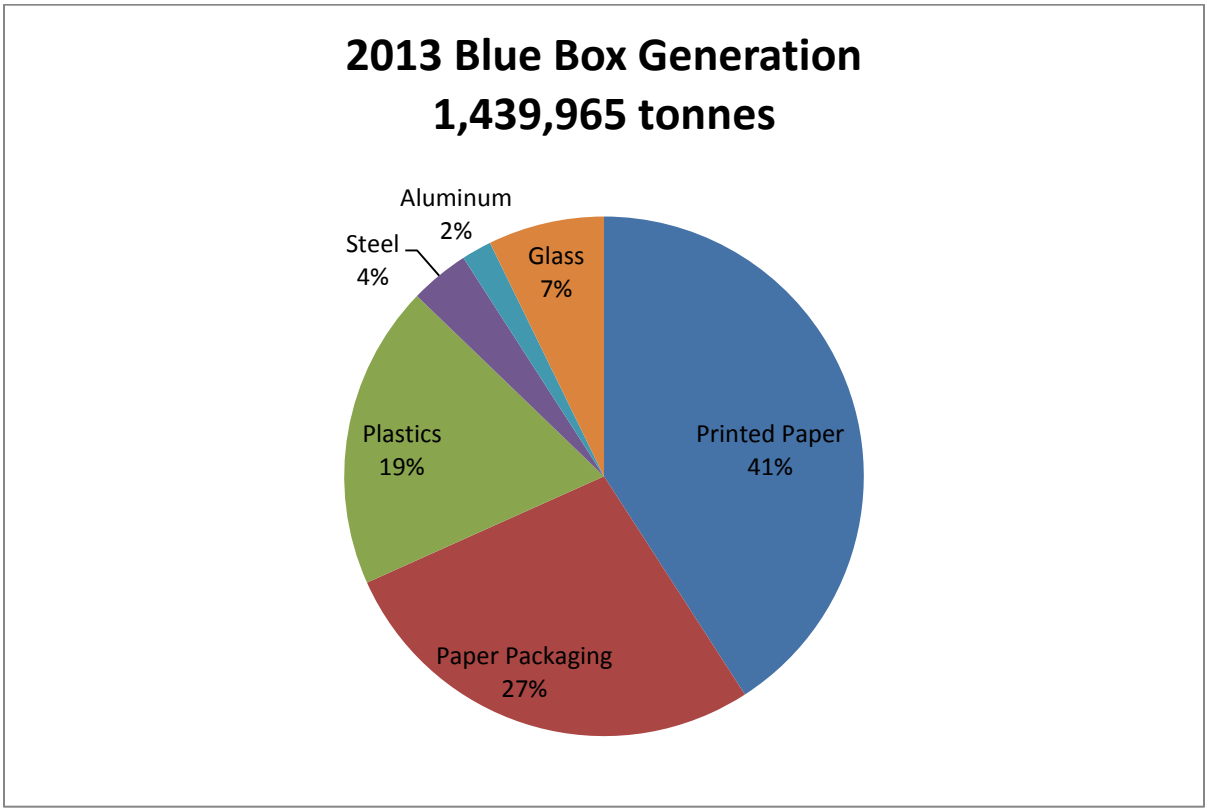
## Background

Since the beginning of the Blue Box Program, Stewardship Ontario has undertaken studies of blue box materials generated from Ontario households. The studies measure the amount of Blue Box material Ontario residents put out for recycling and in the garbage in all types of households (e.g. single-family households and apartments) across the province.

The purpose of these studies is to determine how much of each blue box material is in the municipal waste stream, including in the blue box and the garbage, and the amount of each material generated for recycling, which determines the recovery rate of each material category.

## Why carry out curbside material composition studies?

The curbside material composition study is an input to Stewardship Ontario's determination of waste generation rates by material type and is ultimately used to inform blue box waste generation in the province. The results of these studies are typically supplemented with steward reported supplied data trends. Once the data is compiled and analyzed, the generation rates can be compared to prior years to help better understand waste generation trends. The generation rates form the denominator used to calculate material recovery rates of blue box materials and therefore are a key component to setting blue box fee rates.


2013 Blue Box Generation
1,439,965 tonnes
Aluminum 2%
Steel 4%
Glass 7%
Plastics 19%
Printed Paper 41%
Paper Packaging 27%

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## Summary:

### Data from Studies undertaken over four seasons in 2012/2013:

Stewardship Ontario undertook a major field study of the curbside waste and recycling collected from residential homes in Ontario. The study took place over a twelve month period starting in the summer of 2012 through the spring of 2013. The purpose of the study was to examine the make-up of materials found in the waste stream i.e. garbage, as well as recycling boxes and bins.

The curbside material composition study looked at:

- How much recyclable waste ends up in garbage rather than the blue box
- How much garbage, and non-recyclable materials are contaminating the blue box

Having four seasons of data provides comprehensive information on the composition of waste generated over a year. This analysis helps identify what waste is incorrectly being placed in the recycling stream and what recyclables are incorrectly going into the garbage stream.

Stewardship Ontario engaged a waste study crew from an external consulting firm to collect, sort and weigh the waste from a sample of 100 single family residences across the province.

The municipalities where curbside material composition studies were conducted included:

- Muskoka
- Orillia
- Simcoe
- London
- Peterborough City
- Peterborough County
- Toronto

For a list of the material categories sorted please see Appendix 1. *Please note that the graphs below show only top 10 materials + non PPP + other PPP (all the other materials not in top 10).*

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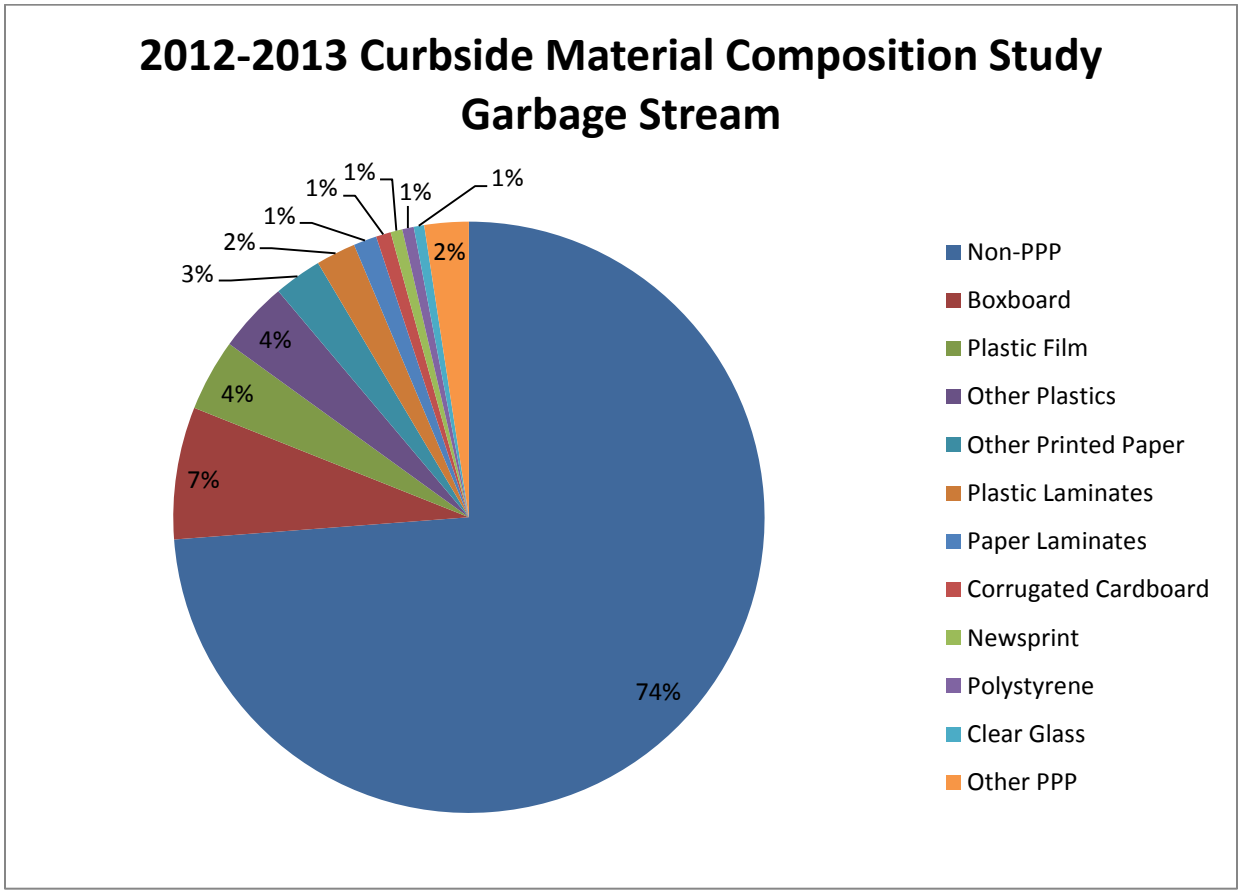
# Key Findings

## Garbage contents

When examining the composition of the garbage from residential homes across the province, taking all seasons into account, boxboard, plastic film, other plastics and other printed paper made up the majority of recyclable items that are incorrectly being placed in the garbage when they should be disposed of in the blue box.

Overall, the typical make-up of the garbage stream is 74 per cent non-recyclable, or waste, that belongs in the garbage, and 26 per cent* recyclables that should have been placed in the blue box for recycling.

What these figures tell us is that Ontarians are still disposing of items that can be recycled in the blue box in their garbage receptacles. The main item here being plastics, representing over 40 per cent of the blue box materials found in garbage. Although still high in 2013 this is consistent with last year's study and down compared to the curbside material composition study carried out in 2005-2007. The *Plastics Is In* campaign was launched with municipalities to educate residents about all the different types of plastics that can be recycled in their blue boxes with the aim of reducing the volume of recyclable plastics placed in the garbage stream.



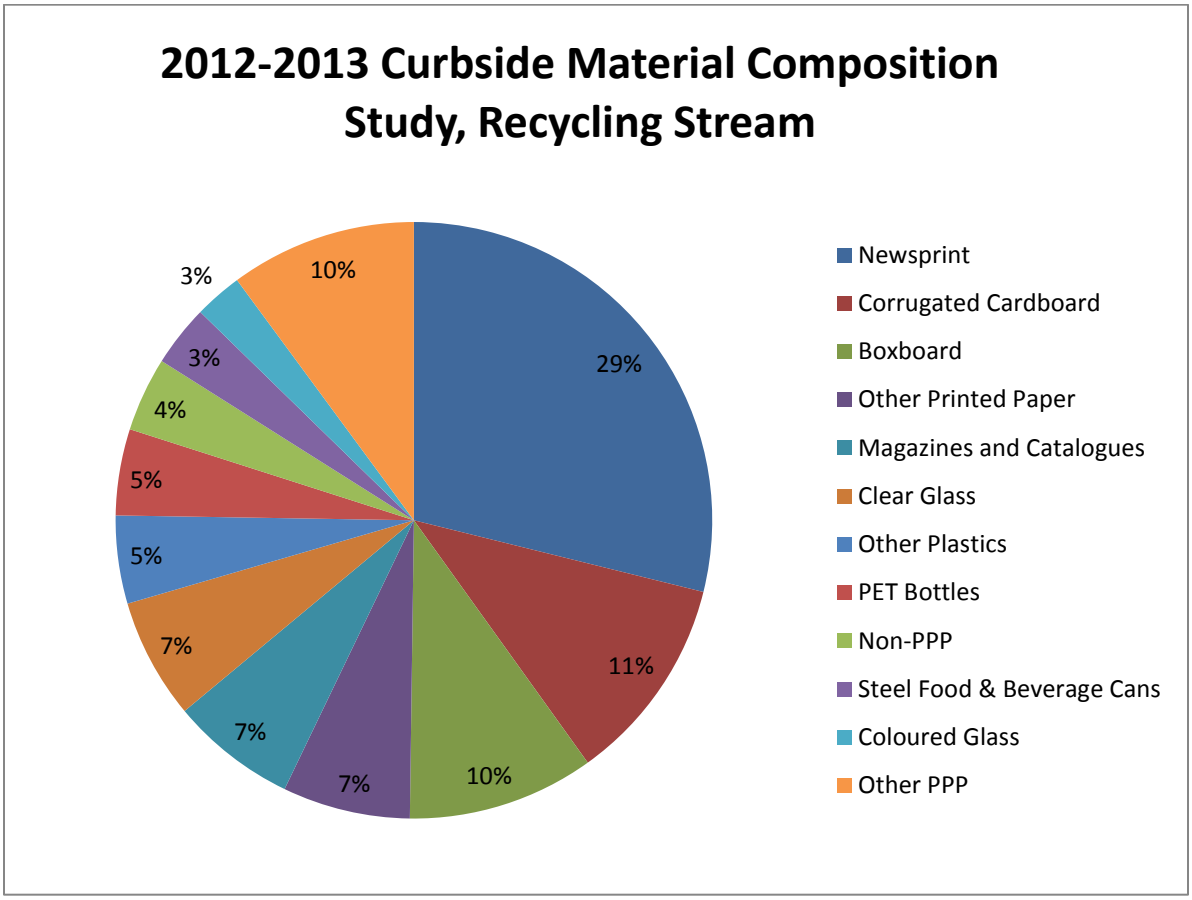

*The values in this chart have been rounded.

## Blue Box Contents

The good news is that the curbside material composition studies indicate that residents are quite diligent about what they put in the blue box for recycling. The figures combined across the seven municipalities studied showed that 96 per cent of materials placed in the Blue Box were indeed recyclables, with only four per cent of contents being non-blue box materials that should have been placed in the garbage. (These figures could be slightly less favourable for those municipalities that do not accept plastic laminates and/or plastic film in their recycling programs).

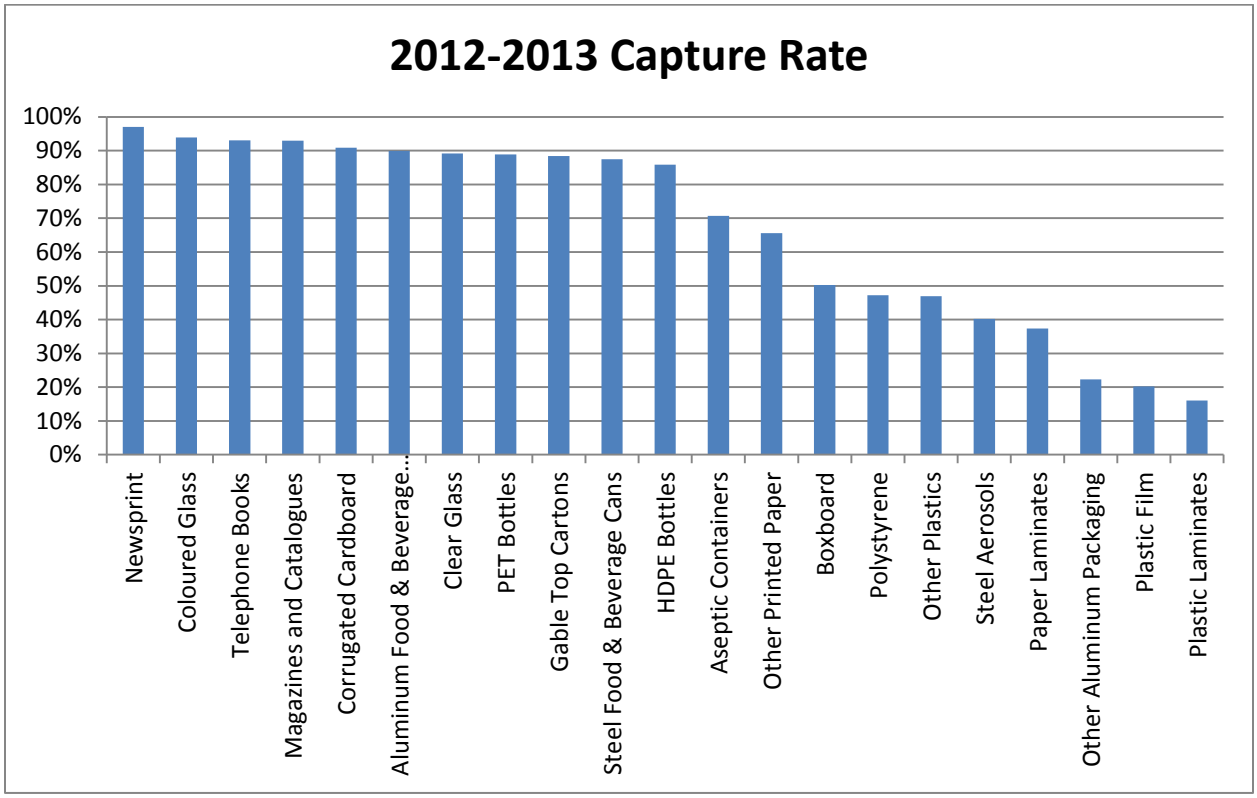
As in previous curbside material composition studies, the most popular materials put in the blue box for recycling include:

- Newsprint – 29 per cent
- Corrugated cardboard – 11 per cent
- Boxboard – ten per cent
- Other Printed Paper and Packaging (Other PPP) – 10 per cent
- Magazines & Catalogues, Clear Glass and Other Printed Paper – all at seven per cent.




### Capture Rate:

Below is an overview of the capture rate for the data period 2012-13. Not surprisingly, this chart reflects the proportion of recyclables that residents are placing in their recycling bins with the higher capture rates correlating with the highest volume materials in the recycling stream.




## Conclusion

The curbside material composition study demonstrates that residents in Ontario are careful about putting the right materials in their blue boxes for recycling. However, with some more guidance and education, more recyclables which are currently ending up in the garbage, could be diverted to recycling. Overall, the study findings are positive and demonstrate a widespread effort to do the right thing when it comes to recycling, and a healthy appetite on behalf of Ontarians for recycling in general.

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**Appendix 1: Material Categories**

| Material Category | Description / Examples |
|---|---|
| **PAPER** | |
| Newsprint - Dailies and weeklies | Daily and weekly newspapers published by the Canadian Newspaper Association (CNA) and the Ontario Community Newspapers Association (OCNA); Globe and Mail, Toronto Star, Hamilton Spectator, community newspapers. Consult Stewardship Ontario's list of OCNA/CNA publications. No inserts, flyers and magazines from newspapers. |
| Other Newsprint - Other | Non OCNA/CNA publications (e.g. TV guides, Auto Trader, Real Estate News) plus inserts and flyers from OCNA/CNA newspapers. Consult Stewardship Ontario's list of OCNA/CNA publications. Includes glossy flyers and advertising distributed with newspapers. |
| Magazines and Catalogues | Glossy magazines, catalogues, calendars, annual reports (must be bound, i.e. stapled or glued). |
| Directories / Telephone books | Telephone books and other directories such as the Yellow Pages |
| Mixed Fine Paper | Fine household papers, writing paper, office paper, copy paper, bills and statements, ad mail, etc. Includes glossy flyers and advertising that are not distributed with newspapers. |
| Books | Hard and soft covered books |
| Other Printed Materials | Gift wrap, construction paper, photographs, etc. This is a default paper category and as such should not contain a large amount material. |
| **PAPER PACKAGING** | |
| Gable Top Containers - milk and milk substitute | Polycoat containers with a gable shaped top; milk and milk substitutes like soy, almond and rice milk |
| Gable Top Containers - other beverages | Polycoat containers with a gable shaped top; predominantly juices |
| Gable Top Containers - non beverage | polycoat containers with a gable shaped top - some foods, sugar, molasses etc. |
| Aseptic Containers - milk and milk substitute | Polycoat fibre and foil containers (e.g. Tetra Pak) for soy, almond and rice milk |

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| Aseptic Containers - other beverages (non-alcoholic) | Polycoat fibre and foil containers (e.g. Tetra Pak) for juice boxes, water |
| Aseptic Containers - alcoholic beverage containers | Polycoat fibre and foil containers (e.g. Tetra Pak) for wine and other spirits |
| Aseptic Containers -non beverage | Polycoat fibre and foil containers (e.g. Tetra Pak) for soup, sauces etc. |
| Hot drink polycoat cups | Hot beverage containers, typically with polycoat on inside only, including coffee cups, soup cups/bowls, chili cups etc. (excludes fountain drink cups) |
| Cold drink polycoat cups | Cold beverage cups, typically with polycoat on both sides including for fountain drinks, take-out ice cream cups |
| Spiral wound containers | Polycoat or paper containers with steel bottoms include chip containers, frozen concentrate juices, pre-packaged cookie dough etc. May also have foil and or plastic on ends |
| Ice cream containers | Polycoated paper ice cream containers, typically with a lid, excluding boxboard folded ice cream boxes |
| Other bleached long polycoat fibre | Food containers with white fibre and a rolled or folded rim, includes Michelina's frozen food, KFC tubs |
| Other paper laminate categories | 1. Paper with aluminum foil; 2. Paper with plastic; 2. Multi-layered paper - Includes microwave popcorn bags, some cookie bags, gift wrap, dog food bags, paper granola bar wrappers etc. |
| Corrugated Cardboard | Electronic product boxes such as television and computer boxes, pizza boxes, kraft wrapping paper for mailing packages, kraft bags such as brown grocery bags, prescription bags, paper take-out bags used for mushrooms or food delivery, kraft bags for food such as flour, sugar, potatoes or oatmeal, kraft produce and bulk, store bags used for mushrooms, boxes used to direct mail for residential consumers |
| Boxboard / cores (tubes) | Paperboard such as cereal boxes and shoe boxes, Moulded pulp paper packaging such egg cartons and formed coffee take-out trays, Stiff paperboard used to mount plastic blister packs used (e.g., for products such as toys and batteries), the roll inside of toilet paper, paper towel, tin foil and plastic wrap |
| Tissue/Toweling | Tissues, napkins, paper towels (includes wet/damp items) |
| **PLASTICS** | |

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| #1 PET Bottles - excluding alcoholic beverage containers | Soft drink/water bottles, salad dressing bottles, peanut butter jars |
| #1 PET Bottles > 5 Litres | Water Bottles |
| #1 PET Bottles - alcoholic beverage containers | Bottles used to container alcoholic spirits and beverages |
| #1 PET - clear thermoform packaging | bakery trays, egg cartons, veggie trays, molded protective packaging |
| #1 PET - other thermoform (coloured) | coloured PET microwave trays etc. |
| #2 HDPE Bottles and Jugs | Laundry detergent, bleach, vinegar, milk jugs, personal care products such as shampoos, conditioners and body wash, antifreeze containers, cleaning supplies |
| #2 HDPE Bottles and Jugs > 5 litres | Laundry detergent, bleach, cleaning supplies |
| #2 HDPE Other | Single use trays from items such as Lunchables and plant pots |
| #3 PVC | Tubs, condiment containers |
| LDPE/HDPE Film - Carry-Out Bags | Plastic shopping bags with or without images or text |
| LDPE/HDPE Film - Other from food | Fresh and frozen vegetable bags, milk bags and pouches, bread bags etc. |
| LDPE/HDPE Film - Other - Non-food | Over-wrap from toilet paper and paper towel, dry cleaning bags, over-wrap from pop cases and water cases |
| LDPE/HDPE Film - Products (not packaging) | garbage bags, kitchen catchers, zip lock bags, leaf bags |
| Plastic Laminates | chip bags, granola bar wrapper, stand-up pouches |
| #4 LDPE - Rigid | some condiment bottles, plant pots etc. |
| #5 PP - bottles, tubs and jugs | including plant pots and trays |
| #6 PS - Expanded polystyrene - white foam packaging | white packaging foam from televisions etc. |
| #6 PS - Expanded polystyrene - other (food service etc.) | expanded foam trays, clamshells, coffee cups etc. |
| #6 PS - Non-expanded - other | including plant pots and trays, coffee cup lids |
| Other Rigid Plastic Packaging | Plastic packaging not captured elsewhere (regardless if it has a recycling # or not). Examples might include blister packaging, unmarked trays, unmarked single-serve yogurt tubs, deodorant sticks, toothpaste tubes, mesh bags, 6-packs rings, strapping etc. |
| Large HDPE & PP Pails & Lids | Greater than 5 litres and less than 25 litres |
| Other Plastics - non-packaging/ durable | Rubbermaid tubs, toys etc. |

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| **METALS** | |
| Aluminum- food and Beverage Containers (excluding alcohol containers) | Single-serve juice/soft drink cans, pet food cans, food cans (e.g., sardine cans) |
| Aluminum - alcoholic beverage containers | Wine bottles, spirit bottles, single-serve cooler bottles, beer bottles |
| Aluminum - foil and trays | Foil wrap, pie plates, yogurt/ sour cream seals, frozen food trays (e.g., lasagne food trays) |
| Aluminum - aerosol containers | Mousse spray cans, air freshener spray cans, deodorant spray cans, hairspray cans, food spray cans for cheese or whipped cream |
| Other Aluminum - non-Blue Box | Aluminum siding, baking trays etc. |
| Steel - food and beverage cans | Food cans (e.g., soup), large juice cans for apple juice, lids and closures on packaging |
| Steel - aerosol containers | All non- MHSW. Air freshener spray cans, deodorant spray cans, hairspray cans, wax and polish spray cans, lubricating oil spray cans, spray can foam, cleaners in a spray can |
| Other steel - Non-Blue Box | propane tanks, baking trays, frying pans etc. |
| **GLASS** | |
| Clear Glass - food and beverage (excluding alcohol containers) | Food containers such as pickle jars, salsa jars and diary tubs, cosmetic containers for creams, beverage bottles |
| Clear Glass - alcoholic beverage containers | Wine bottles, spirit bottles, single-serve cooler bottles, beer bottles |
| Coloured Glass - food and beverage (excluding alcoholic beverage containers) | Olive oil bottles, balsamic vinegar |
| Coloured Glass - alcoholic beverage containers | Wine bottles, spirit bottles, single-serve cooler bottles, beer bottles |
| Other Glass - non-Blue Box | Dishes, ceramics, window glass |
| **MUNICIPAL HAZARDOUS AND SPECIAL WASTE** | |
| Lubricating Oil Containers | |
| Paint & Stain containers | |
| Aerosols - Paint | |
| Aerosols - Solvents | |
| Aerosols - Pesticides | |
| Aerosols - Other | |

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|---|---|
| Antifreeze containers | |
| Pesticide containers | |
| Fertilizer containers | |
| Propane tanks and compressed gas cylinders | All propane tanks and cylinders used for helium etc. |
| Batteries | All batteries |
| Solvent containers | |
| **OTHER MATERIALS** | |
| Other Waste | Materials not classified elsewhere, wooden fruit basket, vacuum bags, wax candles, furnace filters, etc. |

* Link to the OCNA and CNA membership lists:

http://www.ocna.org/member_search

http://www.newspaperscanada.ca/about-newspapers/find-canadian-newspaper