

go zero 

Informational leaflet

Recycling process

Material treatment

www.gozerorecycle.com

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*For the sake of brevity, the use of the masculine gender in this document has been adopted and is not intended to be discriminatory. (French only)

**As our methods and procedures are constantly evolving, the process described in this document is subject to change without notice. Any potential modifications will be made with the aim of maximizing the saving of time, energy, and resources, as well as the quality and purity of the outputs.

Contact

Contact us for any questions, comments, or quote requests.

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Introduction

We founded Go Zero Recycle in 2021 with the aim of recycling products that couldn't be recycled by standard municipal recycling, starting with personal protective equipment, use of which had by then increased exponentially. We were delighted to find that many of the organizations and users affected by this environmental issue were also willing to take concrete action with us, and we grew rapidly thanks to their participation.

This success has led us to expand our processes and develop innovative techniques to recycle many other non-recyclable products that we use every day at home, at school, in the office, in hospitals, at the dentist's and everywhere else.

The Go Zero team is committed to establishing simple and effective circular recycling solutions, federating competent partners in the recycling field and ensuring high-level traceability. These objectives are reflected in our values:

- **Innovation** - creating and implementing innovative recycling techniques and processes that take charge of the entire material and reintroduce it into the circular economy.
- **Efficiency** - implement practical, logical operations and processes that guarantee immediate success to maximize positive impacts.
- **Transparency** - strive for best practice in traceability and transparency and share it with all.
- **Collaboration** - encourage mutual support, openness, communication and commitment among our various partners, and capitalize on each other's expertise.
- **Sustainable development** - fostering the preservation and development of communities, and integrating sustainable development into environmental, social and economic perspectives.

Let's recycle anything*

Go Zero can recycle products that others won't, because our business model is different. Some recyclers only accept products that produce a simple material with a high resale value. At Go Zero, we take back all products, and it's the user, sponsor or buyer who pays the processing costs.

We specialize in complex multi-material products and work directly with manufacturers to provide them with the 100% recycled raw material they need to make useful, circular recyclable products, avoiding as many stakeholders as possible.

*OK, maybe not "anything" anything, but we can work together to develop recycling programs for most of the products forgotten by the traditional recycling system. We will also guarantee that the material is handled honestly so you can be sure that it doesn't end up buried or incinerated.

At Go Zero, everything can be recycled, we just have to work hard for the good of the environment and our communities.

Services

Go Zero offers several recycling services and products such as our recycling boxes, our manufacturer-sponsored recycling programs and our dedicated recycling solutions for institutions, businesses and industries.

Go Zero recycling boxes make it easy for you to collect and recycle many types of products and materials. You can choose a box to recycle a specific product, or a box in which you can collect several different types of product: personal protective equipment, office items, school supplies, household items, building materials, medical supplies, etc. The following steps describe the Go Zero process, from box ordering to product processing.

Sponsored recycling programs are free programs offered by manufacturers, retailers or organizations with ecological values, who pay the recycling fees to allow access to a larger number of users.

Dedicated recycling solutions are a simple way for ICIs (Institutional, commercial and industrial) to become zero-waste organizations. This service enables large volumes to be recycled with scheduled collections and simplified monthly billing. Certifications enable participants to achieve their environmental objectives.

Setup

First and foremost, customers need to assess their recycling needs and take into account the space they have available to implement the Go Zero program in their organization, office, school or home. The Go Zero team is always available to help customers identify the solution that best suits their needs.

For sponsored programs and dedicated recycling solutions, please contact us for a full evaluation.

For recycling boxes, customers can easily place their order online in a few simple steps:

1. Select the box type corresponding to the items to be recycled.
2. Select the box format that suits the space and needs identified.
3. Select a transport option for initial box delivery.
4. Select a shipping option to return the full box to Go Zero.
5. Add the required number of boxes to the shopping cart, then complete the order.

Customized solutions are available for institutions. We can also email purchase orders and offer payment terms, if required.

Go Zero listens to its customers and provides them with the tools they need to promote recycling in their chosen location, raising awareness by promoting simplicity, transparency, inclusion and trust.

We process orders within 1-2 working days, after which our carbon-neutral carrier delivers the order promptly.

Upon receipt of the boxes, the customer can easily assemble them by viewing a short explanatory video available in the "Resources" section of our website.

Note: All our box formats must be protected from the weather. The 4L format is a thin paper-cardboard envelope, the 25L, 100L and 150L formats are made of cardboard, and the 1000L format is a semi-rigid plastic pallet bag. The latter must be placed on a standard wooden pallet not supplied at the time of delivery.



Collection

Our bilingual boxes are equipped with colorful signs that make it easy to identify at a glance which items can be placed inside. For boxes that can accommodate several different items, a more exhaustive list of accepted items can be consulted on the product page of the Go Zero website.

To maximize the use of the box, it's best to place it in a strategic location, where users can easily see and use it. Customers can use our signage to identify where the box is located.

It's important to leave all labels on the box, as we use them to identify them when they are returned, and to diligently provide the customer with recycling information once processing is complete. Below is an example of the four sides of a Go Zero box, with label placement (for 25L, 100L and 150L sizes).



Return and reception

When the box is full, the customer closes the bag inside, then reseals the box. To reseal the opening in the center of the lid, simply tape the sides of the opening together. The ultimate goal is to ensure that the box is securely closed for transport to the Go Zero factory.

None of the products accepted in the boxes are considered hazardous. There is therefore no problem for carriers or for the person designated by the customer to return the boxes to the drop-off point.

It is strictly forbidden to deposit the following items in our Go Zero boxes: asbestos, hazardous chemicals, explosives, household hazardous waste, biological material, medication, syringes, etc.

Two return options are available: Prepaid return and Free drop-off.

Prepaid return: This option takes the hassle out of shipping. By selecting this option at the time of purchase, a prepaid UPS Carbon Neutral return label will be affixed to the box prior to delivery and can be used when the box is full. All the customer has to do is contact UPS to schedule a pickup at their address and according to their availability.

Free drop-off: This option allows the customer to drop off the box at one of the designated Go Zero locations, or use the carrier of their choice to deliver it. Please note that drop-off locations will only accept Go Zero boxes.

When the boxes arrive at our sorting stations, we weigh them and separate them into different sections according to the type of items in the boxes. The date of receipt is also marked on each box as it arrives. The boxes are then stored until they are sorted.

The traceability label on the box allows us to know where it comes from and to better identify its contents. It is a necessary part of our box traceability and certification process, as it provides the customer with a recycling certificate showing the weight of material recycled and diverted from landfill.

If the customer does not automatically receive his traceability certificate, or has mislaid it, he can visit our website to request his certificate. Our RealCycle page allows you to check the status of each box. To do so, customers must enter their order number or the number of the box they are looking for. This information can be found on the traceability label.

Order Number	Realcycle ID
GZ####	S*****

Sorting

The sorting stage is crucial in ensuring that the raw material resulting from the process is of the highest possible quality. In partnership with social economy enterprises whose mission is to integrate people with certain limitations, we open the boxes, separate the materials into over fifty different components, and carry out a number of related tasks prior to processing the material.

The contents of the boxes are then sorted according to material and sent to the respective processing plants. There's no waste - everything we receive is 100% recycled. We make sure that multi-material products are sufficiently processed to be sent to the right channel. To do this, we also take charge of certain dismantling stages to separate materials as far as possible in our different sections (plastic, metal, paper/cardboard, glass, etc.).

Once the materials have been separated, we densify them to transport them efficiently and with the least possible logistical impact to the processing plants.

For certain products from the healthcare sector, a disinfection stage precedes sorting to ensure the safety of our employees.

Treatment

Plastic recycling phases

Shredding

Sorted products are crushed, shredded and reduced to small fragments using high-capacity shredders equipped with rotating blades. This shredding process produces a more uniform size of material, which simplifies the subsequent stages of conveying, washing, drying, optical sorting, densification or extrusion.

Washing

After being reduced to pieces, the material is placed in industrial washers, where paddles agitate the water to keep the material completely submerged. In this way, any impurities such as pieces of metal or glass settle to the bottom of the washer. Plastics and paper are sorted by flotation. We monitor the quality of the water filtration used in this closed-loop process.

Drying

Materials from the washers are conveyed to centrifuges, which not only dry them, but also remove any impurities that may have escaped the initial washing process.

Optical sorting

After drying, the material is subjected to optical sorting. A network of conveyors, optical scanners and air jets sort the different materials one last time according to color and composition.

Granulation

The fully sorted material is granulated to precise size specifications before being stored to await specific requests from the manufacturers who take back the recycled material from Go Zero.

Homogenization

Once we receive specifications from a manufacturer, the granules are mechanically blended with additives until they reach homogeneity of color, texture and size, making them ready for the extrusion process.

Extrusion

The central part of the extruder consists of a long barrel. Thanks to the heat generated by the friction of its internal axis, this barrel plasticizes all the particles previously created into a uniform paste. At this stage, the materials are melted by the heat.

Filtering

The plastic, already having the required texture and fluidity, undergoes a further filtration stage. This filtration involves the use of a system of very fine-meshed sieves that capture any impurities that may have adhered to the material during the previous stages of the process, such as cardboard dust, fabric dust or other incompatible materials.

Final pellet

The material is ejected from the extruder in the form of monofilaments or wires, which cool on contact with the water in the tank. These threads then pass through a die, where a rotating blade cuts them. This production stage produces the appropriate granules or pellets, ready for re-use.

Treatment of various materials

Paper / Cardboard

Office paper / Newspapers / Flat cardboard / Corrugated cardboard / Milk and juice cartons

For these materials, Go Zero performs stripping and sorting according to five categories (corrugated cardboard, flat cardboard, newsprint, office paper, plasticized and aluminized paper), then bales and sends the sorted materials to the local pulp and paper mill. Our teams ensure that the paper and cardboard bales are compacted as much as possible to save as much space as possible and avoid unnecessary truck traffic.

The converter receives the bales, then shreds them, conditioning the material into new pulp which is then used to create new products: toilet paper, packaging products, corrugated board, recycled paper, etc.

Plastic

#1 PET / #2 HDPE / #3 PVC / #4 LDPE / #5 PP / #6 PS / #7 mixed aluminized / #7 mixed flexible / #7 mixed rigid

The majority of the products we receive are made of all types of plastic. Go Zero first shreds products containing plastic to separate the material as needed. Then we demetalize, wash and dry the plastic to remove all impurities and dirt.

Once the plastic has been isolated from the rest, we extrude, filter and granulate it. The material is then sold to local manufacturers of products made from recycled and recyclable materials.

Glass

Brown glass / Green glass / Clear glass / Mixed glass

Go Zero carries out the following glass processing stages: crushing, demetalization, washing, drying, granulation and sale of the material. An expert processor then melts and molds the glass to create packaging of equivalent quality, including bottles, jars, flasks and more.

Metal

Aluminum / Iron / Cans / Tins

When it comes to metal, Go Zero shreds the products to isolate the materials, then densifies and resells the sorted material directly to local foundries, which reintroduce it into their melting and ingot-molding processes.

Textile

Organic synthetics / Protein blends / Cellulosic blends / Petrochemical synthetics

Recently, Go Zero began recycling textiles. The shredding, washing, drying, defibration and needling (geotextile) stages are now handled directly in our facilities. We then resell the processed material to local textile manufacturers.

Construction/Renovation/Demolition

This product category is made up of several materials:

- Wood: during sorting, products made from wood are divided into different grades corresponding to ratings Q1, Q2 and Q3. The material is then ground, demetalized, baled and reused by local manufacturers.
- Gypsum: after a grinding stage, the paper is extracted from the gypsum boards and recycled. Gypsum is reused as an additive in the manufacture of fertilizers.
- Aggregates: concrete, stone, brick, asphalt and paving debris are sorted, crushed and reused by local companies as an alternative to natural aggregates.
- Roofing shingles: once crushed, bitumen is reintroduced into the asphalt manufacturing process.

Hazardous household waste

Lithium batteries / Alkaline batteries / Lead batteries / Fluorescent bulb / LED bulb / HID bulb / Aerosols

Household hazardous waste is collected and sorted by Go Zero, then sent to authorized specialized local partners who process it according to the standards in force for each product.

Inhalers

Inhaler materials are separated. Propellant gases are extracted and captured: cans are pierced, contents filtered, gases captured and residues neutralized. No part of the inhalers is incinerated, with the exception of the contents (medication/powder), which are destroyed by a specialist company. Metal and plastic parts are recycled. Propellant gases are very harmful to the environment, so they are carefully collected and recycled wherever possible.

E-waste

Televisions / Computers / Phones / Cameras / Accessories

For this type of multi-material item, Go Zero initially dismantles and shreds the appliances to separate the materials. These are then redirected to the corresponding plastic, metal or glass channels. Electronic boards contain rare metals. They are duly treated to extract them.

Reusable

With a strong, committed and active community, Go Zero is always able to find a useful second life for reusable items, considering recycling only as a last resort. We donate reusable items to local community organizations and self-help centers.

Plant

Vegetable matter, such as branches, leaves and raw wood, is sorted and shredded. This material is then transformed into shavings for agricultural bedding or compost.

Organic

Organic residues such as table scraps are composted locally by dedicated external organizations.

Household appliances

Following the sorting and stripping stages, household appliances containing gases harmful to the environment are treated by a partner. The materials are separated according to the different processing channels; plastic, metal, glass, electronics.

PLA

So-called biodegradable or compostable plastics made from polymers derived from polylactic acid are treated differently. This material must be treated in a biodigester which provides optimal conditions. Go Zero and a partner produce a material which can then be mixed with organic compost.

Refundable

Several products are refundable. When sorting products, Go Zero isolates refundable products in order to redirect them to established subsidiaries.

Certification

Go Zero is committed to leading in an exemplary manner; The success of recycling and social and environmental initiatives relies on transparency, efficiency and truth. This is why we guarantee the traceability of recycling boxes, from their receipt to the complete processing of the materials they contain.

To do this, we created the RealCycle tool which allows you to follow each step of the recycling process at the end of which the customer automatically receives a recycling certificate by email. This certificate certifies that a specific customer, at a specific location, during a defined period, has recycled a certain type of material. The certificate confirms the weight of the material recycled and diverted from landfill and serves to document the environmental approach of our customers and to certify their zero-waste efforts. We thus certify the quantity of material diverted from landfill and reintroduced into the circular economy.



We are developing a more comprehensive and efficient version of RealCycle which, ultimately, will provide several other interesting information on the materials received and a dynamic map allowing you to visualize at which stage of the process the box is.

Facilities

Go Zero has several warehouses and material processing centers. It is important to note that we always strive to have the least harmful impact on the environment. For this reason, we always make sure to have a truck full of recycling material or boxes before sending it to any of our facilities. Thus, it is possible that boxes placed at a less busy drop-off point take longer to be processed or that a type of material received in smaller quantities spends more time in the same place before being transformed. Our main goal is to save GHG and carbon emissions as much as possible.

Here is the list of our main installations, and the steps carried out there:

- CAN, QC, Magog – Sorting center, collection point, administration
- CAN, QC, Farnham – Rigid plastics processing
- CAN, QC, Drummondville – Processing of flexible plastics
- CAN, QC, St-Élie – Textile treatment
- CAN, QC, Brigham – Metals processing
- CAN, QC, Montréal – Transshipment center
- CAN, QC, Toronto – Transshipment center
- CAN, QC, Calgary – Transshipment center
- CAN, QC, Vancouver – Transshipment center
- USA, WI, Stoughton - Transshipment center
- USA, FL, Pompano Beach - Transshipment center