



What Can I Recycle?

Through advances in recycling technology, you have more options than ever. And it's a good thing because we need to conserve as much of our resources as possible.



METALS



PAPER/CARDBOARD



GLASS



PLASTICS



BATTERIES/BULBS



ELECTRONICS



METALS

Do you think of your empty soda cans and food cans as a natural resource? They are. Americans currently discard about 2.7 million tons of aluminum each year. Of that, about 50 percent is recycled. Apart from the economic impact, the environmental savings of recycling metal are enormous. Recycling steel and tin cans, for example, saves 74% of the energy used to produce them.

Aluminum Cans

- On average, Americans drink one beverage from an aluminum can every day. But we recycle just over 49% of the cans we use.
- Since the cans are 100% recyclable, we could drastically reduce the energy needed to produce brand new cans simply by recycling our empties.
- An aluminum is able to be returned to the shelf, as a new can, as quickly as 60 days after it's put into your recycling container.
- Coast-to-coast, there are about 10,000 locations that buy aluminum, making it easy for Americans to redeem their used beverage cans for cash. In fact, recycling aluminum cans is a \$1 billion/year industry in this country.
- Recycling one aluminum can save enough energy to run a television for three hours.

A Day in the Life of a Recycled Can

1. Customer takes can to a recycling center or puts it into a recycling bin.
2. The can is transported to a processing facility.
3. A giant magnet lifts out cans that are made of metals such as steel. Since aluminum cans aren't magnetic, they drop down to a conveyor belt and are gathered.
4. The aluminum is shredded, washed and turned into aluminum chips.
5. The chips are melted in a large furnace.

6. The melted aluminum is poured into molds called "ingots."
7. The ingots are taken to a factory where they're melted into rolls of thin, flat sheets.
8. From the sheets, manufacturers make new products, including new beverage cans, pie pans, license plate frames, and aluminum foil.
9. Beverage companies fill the cans and deliver them to grocery stores for customers to purchase.
10. Customers take used cans to a recycling center and the process starts all over again.

Aluminum Foil and Bakeware

- During World War II, Americans saved aluminum foil and even peeled off the silver wrapping from chewing gum wrappers to contribute to the war effort.
- Today, we recycle the foil to conserve energy and protect the environment - two other patriotic causes.
- There are thousands of products made from aluminum. From food wrap to disposable cookware, to the disposable burner bibs you use to keep your stovetop clean, the list goes on and on.
- Aluminum can be recycled almost infinitely. The process involves simply re-melting the metal, a process far less costly and energy-intensive than mining the minerals necessary to create new aluminum.
- For example, Americans discarded 460,000 tons of foil in 2010.
- However, Americans are far more likely to recycle aluminum soda cans than aluminum foil.

Household Hints

Unlike aluminum cans, foil may have food particles attached, making it harder for recycling facilities to accept. But foil is easy to wipe clean. So reuse it as much as you can, and clean it off before putting it in the recycling bin. Consider buying 100% recycled aluminum foil. You'll be supporting a process that uses five percent less energy than the traditional aluminum foil manufacturing process.

Steel Cans and Tin Cans (soup cans, veggie cans, coffee cans, etc.)

- Most people call them "tin cans," but the containers your green beans come in are mostly made of steel.
- The term "tin" comes from the fact that these cans have a micro-thin coating of tin inside, to protect the flavor and prevent the can from corroding.
- How can you tell a steel or tin can from an aluminum one? See if a magnet attaches to it. Steel is magnetic, and aluminum is not.
- Steel cans make up about 90% of the U.S. food can market.
- Americans use about 100 million steel cans every day. That's 36.5 billion cans a year.
- About 71% of steel cans are recycled, making them one of the most recycled packaging products in America.
- In addition, steel cans typically contain at least 25% recycled steel, but many are made almost entirely of recycled steel.
- Where does this recycled steel come from? Mainly from scrap metal.
- Recycling steel saves at least 75% of the energy it would take to create steel from raw materials. That's enough energy to power 18 million homes.
- During the recycling process, steel cans (in bales or loose) are fed into the furnaces of a steel mill or foundry. They may be mixed with new steel.
- Some of the new "mini" steel mills manufacture their products from 100% recycled steel.

Steel, tin, and the California Gold Rush.

When you think of the California Gold Rush of the mid-1800s, your first thought may not be of canned goods. But it was the need to supply the gold miners with fruit, meat, and vegetables that gave rise to the demand for canned foods. By the start of the Civil War, around 30 million cans were being produced annually in the United States.



PAPER / CARDBOARD

Most of us use a paper product every day. That's because paper products make up about 71 million tons (or 29 percent) of the municipal waste stream, according to the Environmental Protection Agency (EPA). The good news is that more and more Americans are recycling paper. In fact, upwards of 63 percent (45 million tons) is recycled annually. When you break that number down by population, roughly 334 pounds of paper is recycled for every person in the United States.

Corrugated Cardboard

- Currently, about 70 percent of cardboard-boxes shipped commercially are recovered for recycling.
- Many of the boxes are themselves made of recycled materials or lumber industry byproducts like sawdust and wood chips.
- When recycled, cardboard is used to make chipboard like cereal boxes, paperboard, paper towels, tissues and printing or writing paper. It's also made into more corrugated cardboard.

How It's Recycled:

1. The cardboard is re-pulped and the fibers are separated and bleached. This is a chemical process involving hydrogen peroxide, sodium silicate, and sodium hydroxide.
2. The fibers are screened and cleaned to eliminate contaminants.
3. The fibers are washed to remove leftover ink.
4. Fibers are pressed and rolled into paper.
5. The rolls of paper are then converted into boxes or made into new products.

Magazines

Magazines are made from paper that's been buffed and coated to achieve a glossy appearance. Next, the paper is covered with a white clay that makes color photographs look more brilliant. The shiny appearance does not contaminate the paper at all. About 45 percent of sub-content-3 are being recycled today.

- About 45 percent of magazines are being recycled today.
- Recycled magazines are used to make newspaper, tissues, writing paper and paperboard.
- Recycling just one ton of paper saves enough energy to power the average American home for six months, so don't be afraid to recycle your old magazines. It's the right thing to do.

A Common Misconception

Some consumers think glossy paper can't be recycled. That may have been true in the early days of recycling, but no longer. With today's recycling technology, nearly all community recycling programs accept glossy magazines and catalogs for recycling.

Office Paper

- Just over 45% of office paper is recovered for recycling today.
- High-grade papers, such as white computer paper, bond, and letterhead, can be turned back into office paper if it's kept separate from other waste paper. It can also be used to produce tissue paper, paperboard, stationery, magazines and other paper products.
- Lower-grade papers, such as newsprint, colored paper, file stock and ground wood papers, are made into cardboard, tissues, newspaper and toilet paper.

Office Tip

If your company generates a large amount of waste paper, consider talking to your local recycling company about whether or not you should sort high-grade papers from lower-grade.

Newspapers

- More than 73% of all newspapers in the United States are collected and recycled.
- The average newspaper today is made of a high amount of recycled fiber. Twenty years ago, newsprint contained only about 10% recycled fiber.
- Recycled newspapers can be made into cereal boxes, egg cartons, pencil barrels, grocery bags, tissue paper and many other products, including new newspapers.
- Newspaper is a fine insulator. Using recycled newspapers to produce cellulose insulation is widespread.

Newspapers, Wilderness Restoration and Roadside Planting

Every year natural disasters destroy countless acres of wilderness. The United States Forest Service uses "hydro-mulching," also called "hydro-seeding," to help restore damaged areas. It's a planting process that's been practiced in the United States since the 1950s - and it all starts with newspapers.

Recycled newspapers are made into a fiber mulch and mixed with grass seed, fertilizer, green dye, and water to create a "slurry" that can be pumped over broad areas by pressure sprayers, airplanes or helicopters. This process is called "hydro-mulching." It stabilizes roadside dirt for erosion control and is used to reseed grass over broad areas. Highway departments also use it to beautify roadsides by planting wildflower, tree, and shrub seeds.

Paperboard

- Once used mainly for products such as breakfast cereal boxes, paperboard is now being used for many other kinds of packaging.
- Recycled paperboard is made from 100 percent recovered fiber, which may include newspaper, magazines, corrugated boxboard, paperboard folding cartons, and telephone books.
- One side of the recycled paperboard is usually gray in color.
- Like glossy magazines, recycled paperboard often includes a coating to improve its printing surface and provide protection from fingerprints. It's still perfectly recyclable.
- There are more than 80 recycled-paper mills in North America.

Recycle Clean Paperboard

Be sure the paperboard you have is clean and free of food waste. Then recycle it.

Paper Cardboard Dairy and Juice Cartons

- Also called "gable-top cartons", these are the non-plastic milk and juice cartons you see in the refrigerated section of the supermarket.
- Known in the industry as "poly-coated paperboard containers," the cartons are made of about 80% high-quality paper fiber, a renewable resource, and 20% polyethylene, a type of plastic that keeps the paper from getting wet.
- America consumes enormous quantities of milk and juice, requiring tremendous outlays of energy to produce, ship and landfill the cartons. Only a fraction of these are recycled.
- Waste Management, Tropicana Products, Dean Foods and select carton manufacturers have launched a program in which residents can recycle these containers in regular recycling bins at no additional charge. This program began in Florida and has been expanded to communities across the country.

After Pick-Up, What Happens?

Poly-coated paperboard containers undergo a process known as "hydro-pulping." Bales of containers are first reduced to pulp, which separates the polyethylene from the paper fiber.

The fiber is used to make other paper products such as tissue and paper towels.

The polyethylene is used in furniture, to generate energy, or reduced even further into paraffin, which "blends" the cartons so the non-paper and paper layers separate. The recovered paper fibers can be recycled into items such as tissue and paper towels.

Sometimes dairy and juice cartons are recycled as "mixed paper," a process that does not use hydro-pulping but instead follows the regular paper-making process.

Unsolicited Direct Mail

- You may think of it as "junk mail," or you may welcome the flyers, catalogs, and coupons that appear in your mailbox. Either way, it's important to recycle them.
- "Mixed paper" is the term used to define the many kinds of paper products that can be collected and recycled from our daily mail.
- While Americans are recycling more paper each year, our recycle rate for direct mail remains low.
- According to the U.S. Environmental Protection Agency, direct mail accounts for 2.4 percent (by weight) of the total municipal solid waste generated in this country each year.
- According to the U.S. Postal Service 2005 Household Diary Study, 85% of U.S. households usually read some or all of the advertising mail they receive. Many advertisers are now placing a "Recycle Please" reminder on the direct mail pieces they create.

Phone Books

- Every year, new phone books and business directories arrive at your door. Are you careful to recycle your old ones?
- The pages in a phone book are 100% recyclable and are often used to make new phone books.
- There are enough phone books created each year to measure 106,700 miles when lined up end to end. This means they would circle around the earth about 4.28 times!

- By recycling just 500 books, we could save between 17 and 31 trees, 7,000 gallons of water, 463 gallons of oil, 587 pounds of air pollution, 3.06 cubic yards of landfill space and 4,077 kilowatt hours of energy according to the American Forest & Paper Association.
 - In many places, you can simply drop the phone book into your recycling bin and leave it curbside for pickup. Call your municipality for more information.
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GLASS

Most glass bottles and jars produced in the United States now contain at least 27% recycled glass - which also saves on energy to produce glass made from new materials. Some glass cannot be made into other products, or doing so is not economically feasible. If your local recycler doesn't participate in glass recycling, it's due to the market for that glass being very small or non-existent. However, if glass recycling is available, it's important to keep in mind as you recycle that even small amounts of some materials mixed in can contaminate entire loads. Find out more about the types of glass and how they are recycled below.

CLEAR (FLINT) GLASS

- About 61% of glass containers produced in this country are clear.
- Clear glass is made of a combination of silica (sand), soda ash, and limestone.
- Marketing professionals often prefer clear glass containers because they make the product inside visible.
- However, clear glass may cause some products to degrade because of light exposure. That's why about 39% of the glass produced is colored.
- Clear glass is sometimes used for beverages. More often, it's used to package solids or thick liquids, such as pasta sauce, that may not be sensitive to light.

BROWN (AMBER) GLASS

- About 31% of glass containers produced in this country are brown in color.
- To produce brown glass, the manufacturer adds nickel, sulfur and carbon to molten glass.
- The "brown" in the glass cannot be removed. Thus, brown bottles can be used only to make other brown bottles.
- Brown glass protects the container's contents from direct sunlight, thus preserving freshness and flavor.
- It is the most common color used for beer bottles.

GREEN (EMERALD) GLASS

- About 7% of glass containers produced in this country are green in color.
- To produce green glass, the manufacturer adds iron, chromium or copper to molten glass.

- Green glass comes in a variety of shades. The "green" cannot be removed. Thus, green bottles can be used only to make other green bottles.
- Green glass helps keep sunlight and temperature from affecting the contents, which explains why it is often used in the manufacture of wine bottles.

MORE ABOUT RECYCLING GLASS

Some curbside programs and recycling centers take only certain colors of glass. That's because manufacturers who buy the glass have to maintain the integrity of the color when producing new glass.

How Is Glass Recycled?

- The glass is taken to a manufacturing or recycling plant where it is broken up into smaller pieces known as "cullet."
- The cullet is crushed, sorted, cleaned, and prepared to be mixed with other raw materials.
- When glass is produced from virgin materials, it requires high temperatures to melt and combine all the ingredients. Since cullet melts at a lower temperature, the more of it you add to a batch of raw materials, the less energy needed to melt it.
- Ceramics such as coffee cups and plates present a problem in the glass-making process because they can weaken the glass. Even a small amount of ceramics can contaminate a whole batch of glass and cost the glassmaker millions of dollars.

WHAT NOT TO RECYCLE

Not all glass can be recycled. The following items should not be placed into your recycling bin:

1. Any glass contaminated with stones, dirt, and food waste
2. Ceramics, such as dishware, ovenware, and decorative items.
3. Heat-resistant glass, such as Pyrex.
4. Mixed colors of broken glass.
5. Mirror or window glass.
6. Metal or plastic caps and lids.
7. Crystal.
8. Light bulbs: Find out how to recycle here.
9. Cathode-ray tubes (CRTs) found in some televisions and computer monitors.



PLASTICS

Did you know that every year we produce enough plastic film in this country to shrink-wrap Texas? Or that although Americans recycle more than 2.4 billion pounds of plastic each year, it only makes up around 27 percent of the waste stream? While plastic offers the advantages of being flexible and lightweight, it also consumes fossil resources for its manufacture and contributes waste in our environment.

MAKE SURE IT'S CLEAN!

- Does that plastic lunch container still have yesterday's pizza in it? Don't recycle it until it's clean!
- One dirty product, or one with food waste still in it, can contaminate an entire bale, containing thousands of pounds of collected plastics.
- This can cause thousands of recyclable items to go to a landfill instead of being recycled.
- Cleanliness is essential.

WHAT'S ACCEPTED?

- Plastics come in a variety of shapes, colors and chemical formulations - all with different recycling needs. The code number does not mean the plastic can be recycled. It is simply a way to identify the resin, or plastic type.
- How can you tell what kinds of plastic to put into your recycling bin? The code number on the bottom of your product is not a reliable indicator of whether something can get recycled. Recycle by shape!
- Bottles, jars, and jugs – is the best way to know what is accepted.

LEARN ABOUT RECYCLING PLASTICS

- Remember to keep dirty containers out of your recycling bin. One partially empty soda bottle in a bale of plastic can spoil the whole load.
- Plastic grocery and produce sacks are commonly placed in recycle bins. These bags can shut down an entire recycling plant and should be kept out of our recycling bin. Plastic bags are often collected in barrels at grocery stores, and usually end up as plastic lumber.
- PET plastic is the most common material used for single-use bottled beverages, because it is inexpensive, lightweight, unbreakable and easy to recycle. It takes more than 1.5 million barrels of oil to produce a year's supply of water bottles. That's enough oil to fuel 100,000 cars for a year.



BATTERIES / BULBS

American households are full of items we should recycle, even if we can't put them into our recycle bins. Car batteries, products that use household batteries, incandescent light bulbs, and new CFLs (compact fluorescent lights) are some of them. In the United States, a CFL can save over \$30 in electricity costs over the lamp's lifetime compared to an incandescent lamp. However, CFLs contain mercury, which can be harmful to humans and the environment if not disposed of properly.

CAR BATTERIES

- Car batteries are the most recycled product in America.
- Automotive batteries are also known as lead-acid batteries.

- A typical car battery is made of 60% lead, nearly all of which can be recycled. Most of it is reused over and over again in new batteries.
- Your battery probably contains about three pounds of plastic, which can be reclaimed to create new batteries and other products.
- The sulfuric acid can be recycled and used in new batteries. It can also be converted to sodium sulfate to create fertilizer, dyes and other products. It can even be neutralized, purified, tested, and eventually released as clean water.
- Many automotive retailers will take back batteries.
- You can contact your local municipality to find out where to recycle lead-acid batteries.

HOUSEHOLD AND BUTTON BATTERIES

- If you're using more than about a dozen disposable batteries in a year, you could save money by switching to rechargeables.
- If you still have old batteries on hand that may have been manufactured before 1997, it's likely they contain mercury. Contact your municipality for information on how to safely recycle them or visit ThinkGreenFromHome.com.
- Button batteries often contain silver, zinc, or other toxins and should be recycled. Check with your municipality or visit ThinkGreenFromHome.com.

RECHARGEABLE BATTERIES

- Hundreds of products - everything from laptops, PDAs, hair dryers, and cordless tools - are powered by rechargeable batteries.
- Batteries are usually either nickel-cadmium (NiCad), lithium ion, or nickel-metal-hydride (NiMH). All should be recycled to reclaim valuable compounds and to keep toxins out of the environment.
- To learn more, visit ThinkGreenFromHome.com

INCANDESCENT AND LED

- One of the simplest ways to conserve electricity is to choose energy-efficient lighting options.
- Incandescent bulbs are inefficient, because the light they produce is simply a by-product of the heat they generate.
- A 60-watt incandescent bulb generates the same amount of light as a 15-watt fluorescent.
- Another lighting option is the light-emitting diode lamp (LED), which uses a series of tiny electronic light bulbs that, when placed next to each other, emit as much or much more light than a similar-size standard light bulb. The LED does not burn out all at once, and it uses only a fraction of the electricity of an incandescent
- Incandescent light bulbs will be phased out of the U.S. market beginning in 2012 under an energy law approved by Congress.

COMPACT FLUORESCENT BULBS

- More and more Americans are saving on energy bills by using CFL bulbs instead of incandescents. But what should you do with the bulbs after they burn out?
- CFL bulbs contain small amounts of mercury. If the CFL bulb breaks before it's properly recycled, people can be exposed to this harmful metal.

- Some states, cities and counties have outlawed putting CFL bulbs in the trash.
 - A spokesperson for the Environmental Protection Agency says that even though fluorescent bulbs contain mercury, using them contributes less mercury to the environment than using regular incandescent bulbs. That's because they use less electricity - and coal-fired power plants are the biggest source of mercury emissions in the air.
 - According to the federal government, if every American home replaced just one light bulb with an Energy Star-approved CFL, the United States would save enough energy to light more than 2.5 million homes for a year and prevent greenhouse gases equivalent to the emissions of nearly 800,000 cars.
 - Recycling programs at the stores that sell CFLs are still relatively uncommon, although that is gradually changing. The EPA is working with CFL manufacturers and major retailers to expand recycling and disposal options.
 - To recycle your CFLs, contact your municipal solid waste agency directly or visit ThinkGreenFromHome.com.
 - [Additional reference](#).
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ELECTRONICS

Electronics that are obsolete, broken, and destined for recycling or disposal are sometimes called "e waste." There are many chemical and mineral elements in e waste. A circuit board contains copper, gold, silver, platinum and palladium, as well as lead. If recycled properly, this waste is a valuable source of secondary raw materials.

COMPUTERS (CPUS, MONITORS, PERIPHERALS, KEYBOARDS)

- Every day in the United States, we throw out about 130,000 computers. What can you do when you no longer need yours?
- Computers should never be dumped into a landfill. They are a valuable resource.
- Computers contain a variety of recyclable material, including plastic, metal, and glass. In fact, nearly 100% of a computer is capable of being recycled.
- When recycling electronics, make sure you're working with a reputable recycler such as Waste Management, who operates with integrity and transparency. Ask questions: What do you do with the equipment? Where do you send parts to be recovered? Where are the CRTs, metals, and plastics sent? Who handles the data destruction? Is the hard drive wiped clean of information? Is documentation of this provided? Can you give me information so I can delete all data and personal information myself?
- Peripherals can also be recycled. These include keyboards, cables, mice, computer speakers, printers, scanners, floppy drives, optical media and external hard drives.
- Certain retailers and manufacturers offer electronics recycling programs.

OFFICE EQUIPMENT (PHOTOCOPIERS, PRINTERS, FAX MACHINES)

- Upgrading your office? Be sure to recycle your obsolete equipment.
- By donating or recycling these products, Americans can lessen pollution, save resources, and reduce the energy needed to manufacture new products.
- Printers have become so inexpensive that many people think of them as disposable. However, recyclers can dismantle the old equipment to reclaim the base materials which, in turn, become the raw material needed to produce new products.
- Printer cartridges do not belong in landfills. Certain kinds of toner dust contain hazardous materials, as do inks used in inkjet printers.

TELEVISIONS

- As you make the transition to digital television, what should you do with your old analog TV?
- Most TVs work with either a digital or analog signal. If you do not have cable or satellite service, you will need a converter box that you can purchase at most electronics stores to receive the digital signal.
- Many municipalities do not allow TV sets to be discarded into landfills. Older television sets contain up to eight pounds each of lead. Lead was originally used to protect viewers from radiation.
- The U.S. Environmental Protection Agency estimates that 82 percent of televisions (20.6 million units) were disposed of between 2006 and 2007 - and that occurred primarily in landfills. This means only 18%, or about 6.3 million sets, were recycled.
- Certain retailers and manufacturers, including LG and Sony, offer TV recycling programs.
- The Electronic Industries Alliance provides a list of non-profit organizations that accept used, working TVs.
- Check with your local municipality to see if there are special disposal days or drop-off locations for used electronics.

CONSUMER ELECTRONICS (VCRS, STEREOS, HOME/OFFICE PHONES)

- Is your VCR collecting dust in the closet? Is there a second life for that old stereo?
- Broken or obsolete equipment can be disassembled and the scrap value of various components reclaimed.
- Printed circuit boards and wiring may contain recoverable quantities of precious metals and base metals.
- Frames and cases may contain recyclable steel or plastic.
- MP3 players contain toxic substances, such as lead, cadmium and mercury.
- Most materials in DVD players - from the circuit boards to the plastics - can be recycled to make new components.
- The consumer electronics category also includes audio equipment, calculators, recording devices, and digital clocks. States may define consumer electronics differently, so check with your state for specific information.
- If you can't find a place that will refurbish your product for reuse, check with your local municipality to find out e waste pick-up days or drop-off locations.

CELL PHONES

- Every year, Americans buy more than 100 million cell phones, yet fewer than 20% of old cell phones are recycled.
- Discarded phones represent about 65,000 tons of electronic garbage every year. Simply by recycling the phones, customers could save enough energy to power more than 194,000 homes for an entire year.
- Cell phones are made from copper, other valuable metals, and plastics - all of which require energy to extract and manufacture. Recycling cell phones helps recover these valuable resources and saves energy.
- Recycling just a million cell phones reduces greenhouse gas emissions equal to removing 1,368 cars off the road for a full year.
- Contact your local municipality to find out about e waste collection days and drop-off locations.

UNACCEPTABLE E-WASTE

The following items are not commonly recycled through e waste recycling programs. They are usually recycled through other programs. Contact your local municipality to find out how to properly dispose of them:

- Microwaves
- Smoke Alarms/Detectors
- Fire Alarms/Detectors
- Thermometers
- Large Appliances (Refrigerators, etc.)
- Non-Decontaminated Medical Equipment
- Any unit with Sludge or Liquids

ENVIRONMENTAL STEWARDSHIP

Waste Management is committed to providing environmentally responsible solutions for handling electronics waste.

- Waste Management is committed to:
 - Preventing e waste from entering municipal incinerators or landfills;
 - Preventing the export of e waste to developing countries;
 - Providing visible tracking of e waste throughout the product recycling chain.

This is but a continuation of the E-Steward's Pledge, which we continue to operate by today. By announcing that pledge, Waste Management committed to a set of accepted practices that helps protect the environment, as well as workers' health and safety, during the handling of e-waste. This also gives the ability to third parties to monitor our activity, offering greater transparency in the fast-growing electronics recycling sector.
