

# PLASTIC RECYCLING GUIDE



Improving our  
sustainability  
performance



**MONARCH PARTNERSHIP**  
*Utilities simplified*

# Different types of plastic

**H**ow much do you inspect your plastic products? If the answer is “quite closely”, you might have noticed that some products feature small numbers tucked inside a three-armed triangle. You would be forgiven for not knowing exactly what it means and, unless you know what you’re looking for, it can often be quite hard to spot. But fear not, for the latest instalment of Monarch Explains gives you the lowdown on all things plastic, including which types are safe to reuse and how to recycle them.

## 1 Polyethylene Terephthalate (PETE) – a plastic resin and a form of polyester

PETE is often used to package cosmetics, household cleaners, water, juice, and cooking oil. In other words, it’s a type of plastic that we come into contact with on a daily basis. It was invented in the US in 1973 and was the first plastic bottle to cope with the pressure of carbonated liquids. However, PETE is only intended for one-time use. A toxic chemical, antimony, has been found to leak out from water bottles which are used repeatedly over an extended period, and which have been left in the heat. Avoid microwaving PETE plastic products, and don’t put them in the dishwasher as the high temperatures can make them more dangerous.

Put your PETE plastic into the recycling box and it can be recycled into furniture, carpet, tote bags and polar fleece.

## 3 Polyvinyl Chloride (PVC) – a thermoplastic polymer

PVC is a plastic which can be made softer by using phthalates (a plasticiser) and is used to make shower curtains, condiment bottles, cling film, inflatable toys, clothing, and vinyl IV bags used in hospitals. It’s also often found in vinyl flooring, windows and piping. PVC is tough but cannot be used for heating or cooking, as the phthalates are released upon heating and are incredibly harmful. They have been found to interfere with hormonal development and are a suspected carcinogen, as well as releasing toxins into the environment.

Never burn PVC as the chemicals released when doing so are toxic. PVC is widely unrecyclable so check with your local recycling collection service to see whether or not they accept it.

## 2 High-Density Polyethylene (HDPE) – a polyethylene thermoplastic made from petroleum

HDPE is used to manufacture toys and is often the packaging used for milk jugs, laundry detergent, and folding garden furniture. It’s considered a low-hazard plastic and has a low risk of leaching chemicals as it can withstand high temperatures. It’s also the most commonly recycled plastic, although, unlike PETE, you can reuse it if you want to.

There are no known health concerns associated with using HDPE which is great, given that it’s used for products we use daily.

## 4 Low-density polyethylene (LDPE) – a thermoplastic made from petroleum

LDPE is a flexible but tough plastic used for juice and long-life milk cartons. It is the water-proof inner layer stuck to the cardboard base of the packaging. LDPE is also what most plastic shopping bags are made from, so we’re encouraged to reuse these types of plastic products where possible. It’s not widely recyclable (yet) but things are changing and more recycling centres are becoming equipped to deal with LDPE.

There are no known health risks associated with LDPE. The primary concern with using this type of plastic is making sure it is disposed of properly and doesn’t have an adverse impact on any wildlife through improper disposal.

## 5 Polypropylene (PP) – a thermoplastic polymer

PP is a strong, tough plastic which is resistant to high temperatures, making it a popular choice for microwavable containers and other kitchenware. You might find it used in yoghurt packaging, plastic cups, and baby bottles. It should be noted, however, that it's still not recommended to microwave PP and that "microwave safe" merely means the plastic maintains its shape when heated. Try to use glass containers to heat food where possible.

Some studies link heated PP to occupational asthma in PP factory workers, but based on normal, responsible use of PP, there are no health risks associated. It's not as widely recycled as PETE and HDPE, but more recycling centres are beginning to accept it, so check with your local services.



## 7 Polycarbonate (PC) and other plastics

The seventh category for plastics is usually used to refer to PC and, if this is the case, the letters "PC" will appear alongside the number 7 on the product. PC can be found covering electrical wiring, and also in sunglasses and multi-gallon reusable bottles, due to its strength. PC is easily molded and resistant to high temperatures too, as well as being used for bullet-proof materials.

The health risks, however, are thought to be severe, particularly when it comes to developing fetuses and young children. Studies have shown evidence of miscarriages, early puberty, and cancer and heart disease. PC and other plastics in this seventh category are rarely recyclable so try to avoid using products made from it if possible.

## 6 Polystyrene (PS) – a petroleum-based plastic

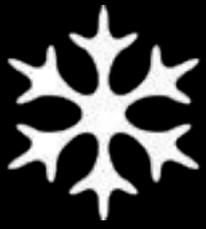
PS can either be a hard plastic, or processed to be used in the form of Styrofoam. In its hard form, expect to find PS in disposable cutlery, CD cases and egg cartons. Styrofoam, on the other hand, is used for disposable foam cups and takeaway food packaging. There are numerous health risks which come with PS and it's classed as a possible human carcinogen by the International Agency for Research on Cancer. Exposure to PS has also been linked to negative health effects like fatigue, nervousness, low platelet and haemoglobin values, and chromosomal abnormalities. Recent advice surrounding PS is to avoid it where possible.

Further to the health risks of PS, it is also rarely recyclable and is accepted only at specialised facilities. When it's not disposed of properly, it breaks into tiny pieces which can take hundreds of years to decompose in the natural environment. Animals who ingest small pieces of PS can die and studies have shown that exposure to the plastic causes long term health issues for them too, as well as for humans. PS is perhaps one of the most harmful types of plastic and both the production and recycling processes are energy-intensive, further highlighting that there are few positives to having PS around.

Plastics in categories 2, 4 and 5 are deemed to be the safest, while categories 3 and 6 are ones which should be avoided. All plastics, however, are thought to leach chemicals and toxins when heated, so be wary of microwaving or putting any types of plastic into the dishwasher.

Not all types of plastic are recyclable either, and not all local recycling centres are equipped for processing the same plastics, so make sure you know what applies to you at home.





# UK waste at Christmas



The wrapping paper we throw away during the festive season could wrap around the world **nine times**

**74 million** uneaten mince pies are thrown away each Christmas



**6 million** Christmas trees are thrown away after the Christmas period



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are re



**2 million**  
uneaten turkeys  
are thrown away  
yearly

**13,350 tonnes** of glass  
are thrown away  
over Christmas



**17.2 million** Brussels  
sprouts are  
thrown away each  
year

We  
create **30% more** rubbish  
over the Christmas  
period



**1 billion**  
Christmas cards  
are recycled every  
year



# Festive recycling advice

**W**e all love Christmas. From feasting on mince pies and turkey, to singing carols and decorating the tree – the whole festive season is a joy! What's not so joyous is realising how much waste is created throughout the month of December. In fact, it's thought that there's 30% more waste across the UK over the Christmas period. Whether it's advent calendars, Christmas cards, wrapping paper, or tinsel, there are so many extra materials in and around the house at Christmas time. It can be difficult to know exactly what's recyclable, what's not, and what varies within local authorities. Keep reading to ensure that you're prepared for responsible waste disposal following the festive season.

**Advent calendars:** You'll probably be aware that advent calendars are made up of a couple of different materials – a cardboard outside and plastic inside. Try to separate them and put them into the appropriate bins as recycling plants struggle to process materials which aren't separated properly. Some advent calendars have foil – which is also recyclable – stuck to the plastic, so try to remove that too.

**Christmas cards:** Whether or not your cards can go into the green bin is a contentious issue. Basically, it depends on the amount of glitter and shiny, plastic-y matter on them. You can definitely recycle the back page of the cards as this is usually just cardboard. Sadly, if a glitter coating is stuck to the card, it won't be able to be separated and should be put in with household waste.

**Baubles:** Plastic baubles, sadly, are not made from a recyclable plastic so, unless you want to reuse them next year, they should be put into your household waste bin. Glass baubles are made differently to glass bottles and other recyclable glass products, so these belong in your household waste too. We recycle 13,350

tonnes of glass in the UK every Christmas, including jars and bottles. When it comes to Christmas decorations, the best option, both for your wallet and the environment, is to keep reusing them for as long as possible.

**Christmas lights:** Some local authorities offer electronic equipment waste services, so check what's on offer in your local area. Visit <https://recyclenow.com> to find out what you can do with your old electronics.

**Wrapping paper:** 83 square kilometres of wrapping paper is sold in the UK every Christmas. There are different types of wrapping on offer, from thick glittery ones to thinner paper-like offerings. Typically, as with Christmas cards, if wrapping paper is glittery or shiny, it's likely made of a combination of plastic and paper, and therefore cannot be recycled properly. If you scrunch up the paper into a ball, and it holds its shape, it's usually recyclable, but if it springs back, it has too much unrecyclable plastic in it.

**Tinsel:** This is made from a plastic which isn't recyclable, and therefore belongs in your household waste bin. If you have tinsel already, try to reuse it over the years, but if you're yet to buy your decorations, think twice about tinsel and have a look at some more sustainable alternatives.

**Food packaging:** The amount of food waste generated throughout the Christmas period is enormous, not to mention the packaging that comes with it. 300 million mince pies are eaten in the UK during each Christmas season and each of these comes with a tiny foil case. Providing these are cleaned properly, they can be recycled, alongside most plastic packaging from other foods like sprouts, (clean) foil turkey cooking trays, and empty bottles of Baileys.



# The Planet Mark

**A**t the beginning of the year, The Monarch Partnership became a fully-certified organisation with The Planet Mark, an internationally recognised and trusted sustainability certification programme. The programme recognises commitment to continuous improvement in sustainability and carbon reduction. Through rigorous carbon footprint measuring and reporting, The Planet Mark provides assurance that The Monarch Partnership is proactively addressing its environmental impacts.

As well as monitoring carbon emissions, The Planet Mark promotes overall sustainability, from managing recycling solutions to reducing one-time plastic use. While plastic is a convenient and generally inexpensive product to manufacture, its impact on people and the planet can be damaging. Please take a moment to consider how you can reduce the plastic in your life and take action today.

*"We're delighted to support this Plastic Recycling Guide and thank the Monarch Partnership for producing it and sharing the information. Together, we can work to reduce our impact on the planet"*

Steve Malkin, CEO of Planet First and Founder of The Planet Mark.

Visit [www.theplanetmark.com](http://www.theplanetmark.com) for more information, or check out their ["Top 5 tips for cutting plastic waste"](#).



**eden project**

## Quick facts from The Planet Mark:

1. The amount of plastic produced in one year is roughly the same as the weight of humanity.
2. 79% of all the plastic produced in the last 70 years has been thrown away.
3. There are 500 times more pieces of microplastic in the sea than there are stars in our galaxy.
4. 8 million metric tonnes of plastic are dumped into the ocean each year.
5. Plastic was found in over 30% of UK-caught fish.
6. "Microplastics" come from personal care products, fibres from synthetic clothing and disintegrated larger plastic products.

**Calculate your own plastic footprint using Earth Day's [plastic pollution calculator](#).**

## Becoming more sustainable

Now, more than ever before, sustainability is the issue at the forefront of everyone's minds. People are paying more attention to their recycling habits, the materials they purchase, and to their energy usage. Our sustainability solution includes monitoring and targeting services, with the end goal of reducing our clients' overall consumption. We track past and current energy usage and use this to set targets and goals for clients. Often, the targets include behavioural changes and the setting up of new schemes such as company-wide recycling initiatives. Contact us at [savings@monarchpartnership.co.uk](mailto:savings@monarchpartnership.co.uk), call 020 8835 3535, or visit <https://monarchpartnership.co.uk/sustainability/> to find out about how we can help you on your journey to sustainability.



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