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Plastic Numbers – No 5 – PP – Polypropylene

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Polypropylene (PP) is a thermoplastic and can be identified by the number 5 in the chasing arrows symbol. It was discovered in 1951 by J. Paul Hogan and Robert L. Banks of the Phillips Petroleum Company. It is one of the top three most common plastics, including polyethylene and polyvinyl chloride.

Polypropylene is similar to polyethylene, except it has propylene monomers instead of ethylene monomers.

Learn more in our article: **what is plastic**
(<https://everydayrecycler.com/what-is-plastic/>).



PP has many similar properties to **PET**

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(<https://everydayrecycler.com/plastic-number-1-pet/>), **HDPE** (<https://everydayrecycler.com/plastic-number-2-hdpe/>), and **LDPE** (<https://everydayrecycler.com/plastic-numbers-no-4-ldpe/>). The main difference is it has a much higher melting point.

This makes it useful for holding hot materials and is why it's often used for food containers.

It is also suitable for use in yogurt production, which is why you often find yogurts sold in polypropylene containers.



Food storage containers made from PP

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Summary

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Why Do We Use Polypropylene?

Why Do We Use Polypropylene?

The properties of PP include:

- Good chemical resistance to acids, alkalis, and most solvents.
- Resistance to moisture.
- A high melting point gives it excellent heat resistance. That's why you're able to reheat your leftovers in Tupperware without worrying about it melting!
- It's lightweight and strong.
- Plus, it's a good electrical insulator.

Items Made From Polypropylene

The properties of PP make it ideal for reusable food containers and similar types of packaging. It's useful because it can take some rough treatment.

You can twist and bend it, and it holds its shape well. This is one of the reasons it is commonly used to make bottle caps.

Polypropylene can be made into both rigid and flexible packaging. We have provided examples of both types that you might encounter in your day-to-day life below.

Rigid Polypropylene Examples

- Yogurt containers
- Margarine containers
- Syrup bottles
- Bottle Caps
- Straws
- Tupperware and other plastic food containers
- Take away food containers
- Disposable cups and plates
- **Plant pots (<https://everydayrecycler.com/recycle-plant-pots/>)**

- Items used in cars, e.g., bumpers, cladding, and exterior trim
- Sunglasses



polypropylene yogurt containers



bottle caps can be made using plastic no 5



Polypropylene is commonly used in plastic take away containers



Plastic straws are often made of polypropylene

Flexible Polypropylene Examples

- Food and confectionary packaging, e.g. Chip packets, biscuit packets.
- Plastic film
- Cereal box liners
- Plastic Diapers
- Rope
- Banknotes
- Stationary
- **Fabric used for clothing and bags**
(<https://everydayrecycler.com/clothes-recycling/>)



Many banknotes are made polypropylene



Diapers can contain layers of polypropylene plastic



Chip packets are often made from polypropylene



Rope made from polypropylene

Polypropylene is used in many other items, particularly where a laminate or mixed material is used. Some examples include luggage, ski boots, household appliances.

Ways to Reduce and Reuse Number 5 Plastic?

Here are some ways to reduce your use of items made from polypropylene.

- Avoid straws altogether or take your own with you.
- Avoid using single-use cups, bowls, or plates. Why not try eco-tableware made from wood or palm leaves?



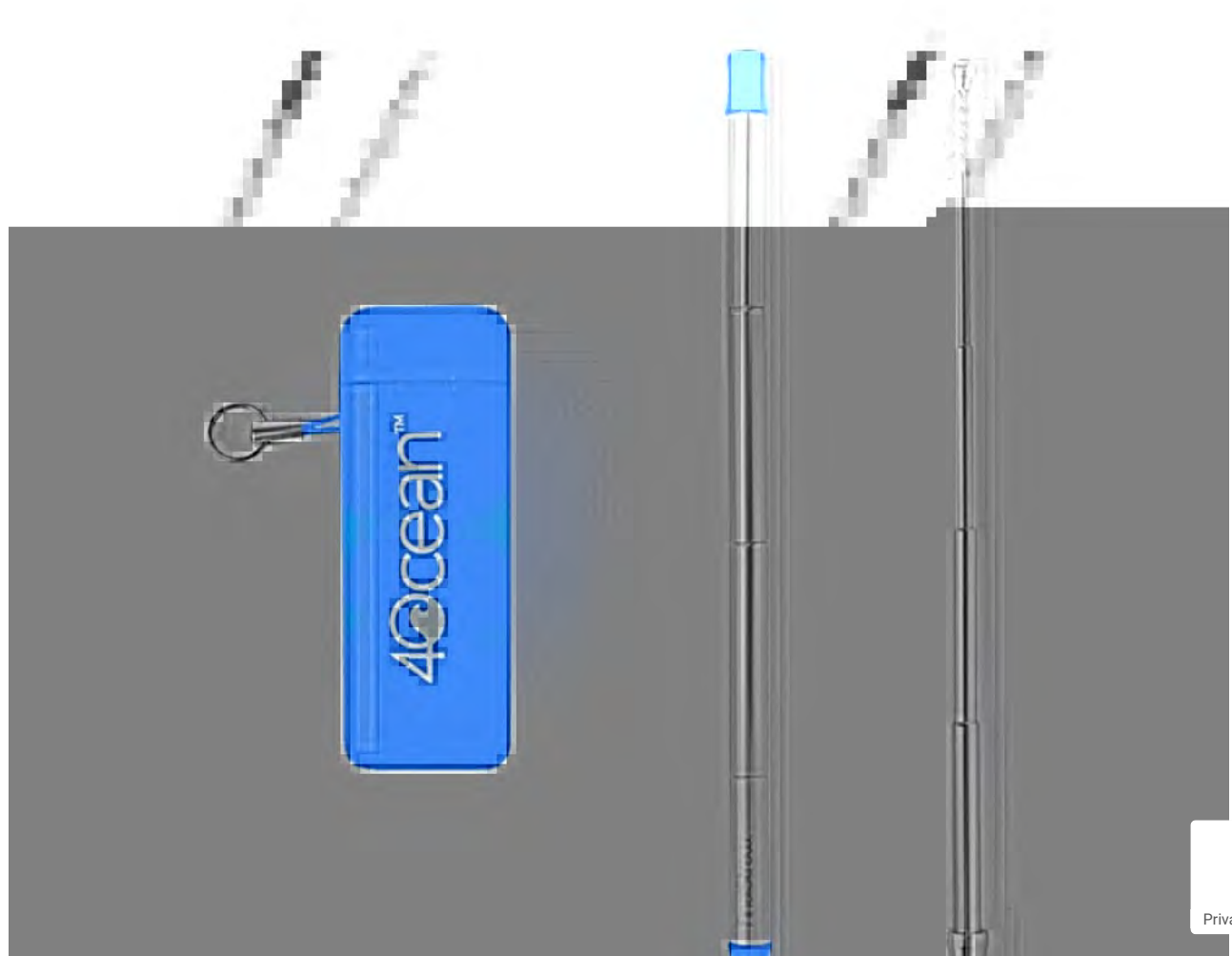


(<https://everydayrecycler.com/compostbowls>)

These compostable bowls made from plants will help reduce your waste.

Shop Compostable Bowls

(<https://everydayrecycler.com/compostbowls>)



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(<https://everydayrecycler.com/reusablestraws>)

Not only is this a great reusable straw but your purchase will fund ocean-clean ups.

Shop Reusable Straws

(<https://everydayrecycler.com/reusablestraws>)

- Try using cloth diapers instead of disposable ones.
- Making your sauces and condiments is a good healthy way to reduce your use of LDPE bottles and containers. Use all those glass jars you have been hoarding. Learn more about glass and how it is made in **what is glass made of (<https://everydayrecycler.com/what-glass-is-made-of/>)**. Or get some tips on recycling in **glass recycling (<https://everydayrecycler.com/glass-recycling/>)**.
- Make your own yogurt and use containers you already have.
- Take note of the manufacturer's instructions for caring for your Tupperware or other containers to make sure they last.
- Buy products already made out of recycled materials or which use recycled packaging.

Can Polypropylene be Recycled?

Yes, polypropylene plastic is recyclable.

Both rigid and flexible forms can be recycled; however, the steps for recycling are different.

Many curbside recycling programs accept rigid plastic products like plastic bottles or plastic tubs.

However, most will not accept flexible PP like bags or soft packaging.

It's important not to put plastic bags or other soft plastics into your **curbside**

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recycling bin (<https://everydayrecycler.com/recycling-bins-at-home-during-a-lockdown/>).

This includes diapers (nappies for the Australians) which are particularly problematic for recycling facilities.

How to Recycle PP Rigid Plastic

- Look for the number 5 in the chasing arrows on the item
- Clean excess food or drain out the liquid
- Place the item in your **curbside recycling bin** (<https://everydayrecycler.com/how-to-recycle-a-quick-guide/>)

How to Recycle PP Soft Plastic

1. Do the scrunch test. If the item can be scrunched up, it is in the soft plastic category, whereas it's considered rigid if it bounces back into shape.
2. Collect your plastic bags and soft plastics, scrunch them up and place them in a bag.
3. Make sure all food scraps are removed and the plastic is dry.
4. Remove any receipts or other items.
5. Next, take the plastic bag full of the soft plastics to your local drop off-center. **Find recycling near you** (<https://everydayrecycler.com/recycling-plastic-bags/>).

If you are in the US and have a Whole Foods Market nearby, you can take advantage of **Preserve's Gimme 5 recycling** (<https://www.preserve.eco/pages/gimme5-overview>) takeback program.

Preserve has been making a range of products from recycled polypropylene, including toothbrushes and razors from recycled PP plastic. Check some of these out below.

What is Recycled PP Made Into?

Below are some great examples of products made using recycled

polypropylene.



(<https://everydayrecycler.com/RecycledBowls>)

Recycled Storage Container

(<https://everydayrecycler.com/RecycledBowls>)

These brightly colored mixing bowls are made from 100% recycled polypropylene or plastic number 5. The bowls are entirely BPA and melamine free and dishwasher safe.

Shop Nested Bowls

(<https://everydayrecycler.com/RecycledBowls>)





(<https://everydayrecycler.com/food-storage>)

Recycled Food Storage Container Set (<https://everydayrecycler.com/food-storage>)

Practical food storage containers made from 100% recycled plastic no 5 and 100% recyclable through the Gimme 5 recycling program in the USA. BPA and Melamine free and dishwasher safe. These are great sturdy storage containers.

Shop Storage Containers
(<https://everydayrecycler.com/food-storage>)





(<https://everydayrecycler.com/preservetoothbrush>)

Recycled Plastic Toothbrush

(<https://everydayrecycler.com/oceanplastictoothbrush>)

We love these ergonomic toothbrushes. The handle is made with 25% recycled ocean-bound plastic recovered during ocean clean-ups and 75% recycled polypropylene.

Plus, 25% of the profits from the range are donated to support non-profits to help clean trash from oceans and beaches.

And you can recycle it once it's worn out through the Gimme 5 recycling program.

Shop Recycled Toothbrushes

(<https://everydayrecycler.com/preservetoothbrush>)

ERGONOMIC HANDLE
MADE FROM RECYCLED
OCEAN PLASTIC



(<https://everydayrecycler.com/preserverazor>)

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Recycled Razor System with 5-blade cartridge (<https://everydayrecycler.com/preserverazor>)

With a handle made using Recycled Ocean Plastic and a 5-blade cartridge, this razor system supports recycling and supports reuse. An excellent replacement for your throw-away single-use razors.

Shop Recycled Razors (<https://everydayrecycler.com/preserverazor>)

There are many more products that recycled polypropylene can be made into, including:

- **Kids toys** (<https://everydayrecycler.com/happy-planet-toys>)
- **Cutting boards** (<https://everydayrecycler.com/recycledcuttingboard>)
- **Buckets and storage bins**
(<https://everydayrecycler.com/recycledbucket>)
- Brooms, brushes, and garden rakes
- **Furniture** (<https://everydayrecycler.com/eco-friendly-furniture/>)
- Flower pots
- Fabric for bags and clothing
- **Sunglasses** (<https://everydayrecycler.com/eco-friendly-sunglasses/>)
- Items used in the automotive industry, e.g., such as bumpers

One of the problems with PP is it doesn't have resistance to solvents and aromatics – so it can take on the smell of the material inside it. But a chemist at Proctor and Gamble has now developed a new way of recycling PP, which removes these bad smells and chemicals from its previous use.

The recycled material can then be used to make new packaging.

PureCycle Technologies, a start-up licensed to use the technology, was up and running on a commercial scale in 2019.

Their forecast is to process 119 million pounds of plastic waste a year, and they have already signed contracts with major companies.

What happens when PP is not recycled?

Despite being one of the most common plastics globally, polypropylene is also one of the least recycled plastics.

It's reported less than 1% of PP is recycled.

When sent to landfills, polypropylene takes 20-30 years to decompose and may leach chemicals into the environment.

The use of recycled material, whether it is polypropylene or other plastic, glass, metal, or paper, reduces the use of virgin material. And would therefore reduce the need for the processes required to extract these materials.

In other words? Reduce, Reuse, Recycle.

Test your knowledge of Plastic Number 5

Complete the quiz to see how much you've learned about polypropylene and how to recycle it.

[Take Quiz](#)

Summary

We use it because it has good chemical and moisture resistance, and it's lightweight and strong. It is preferred for some applications like Tupperware containers because of its high melting point.

PP plastic can be rigid or flexible. Common PP products include yogurt containers, bottle caps or lids, syrup bottles, Tupperware, disposable plates and cups, rope, cereal box liners, and banknotes.

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What does 5 mean on plastic?

When you see 5 on a plastic object it means it is made from Polypropylene. This type of plastic is commonly used for food containers or yogurt containers and bottle tops, but can also be used to make soft plastics like chip packets or ropes.

How can you identify polypropylene?

Polypropylene (PP) is identified by the number 5 in the chasing arrows symbol.

Can plastic no 5 be recycled?

Many curbside recycling programs accept plastic no 5 rigid items like yogurt containers but not soft flexible items. One of the common uses for plastic no 5 is bottle tops. In most cases, these cannot be recycled in your curbside recycling bin but there are some specialist recyclers that will accept them. Be sure to check with your local authority to see what they accept.

If you are in the US and have a Whole Food Market nearby, you can take advantage of the **Preserves Gimme 5 recycling** (<https://www.preserve.eco/pages/gimme5-overview>) takeback program.

The flexible or soft plastic-type of PP do not belong in your curbside recycling bin, but can be recycled elsewhere. Refer to our **recycling plastic bags and soft plastics** (<https://everydayrecycler.com/recycling-plastic-bags/>) for more information.

Learn more about the plastic numbers

If you want to know about other Plastic recycling codes, take a look at our

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other articles below. And if there's anything you want to see, don't hesitate to reach out.

- **Plastic by Numbers Summary** (<https://everydayrecycler.com/plastic-by-numbers/>)
- **Plastic Number #1 – PET or PETE** (<https://everydayrecycler.com/plastic-number-1-pet/>)
- **Plastic Number #2 – HDPE** (<https://everydayrecycler.com/plastic-number-2-hdpe/>)
- **Plastic Number #3 – PVC** (<https://everydayrecycler.com/plastic-number-3-pvc/>)

- **Plastic Number #4 – LDPE** (<https://everydayrecycler.com/plastic-numbers-no-4-ldpe/>)
- **Plastic Number #6 – PS** (<https://everydayrecycler.com/plastic-numbers-no-6-ps/>)
- **Plastic Number #7 – Other** (<https://everydayrecycler.com/plastic-number-7/>)

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