

Polyethylene terephthalate (PET)

Frequently Asked Questions

Aim: This document seeks to answer some of the questions we are frequently asked about PET.

Who is Petco?

Petco Producer Responsibility Organisation NPC is a Producer Responsibility Organisation (PRO), incorporated in 2004, that administers Extended Producer Responsibility (EPR) schemes on behalf of our members for various identified products in the packaging sector. Petco serves as a national organisation, facilitating and supporting the collection and recycling value chain, guiding packaging design, stimulating end-use markets for recycled material, and conducting various outreach and awareness initiatives.

Petco is a collective organisation, set up by our producer members to fulfil their extended producer responsibility obligations, by taking accountability for their products throughout its entire life cycle, as mandated by Section 18 of the National Environmental Management: Waste Act. Petco's efforts have led to annual growth in South Africa's collection and recycling rates, diverting packaging from landfills and promoting a circular economy.

What is PET? And what other kinds of PET are there?

PET forms the basis for synthetic fibres like polyester and is also recognised in the packaging industry as the rigid plastic commonly used as beverage bottles for carbonated soft drinks, bottled water, milk, juice, sports and energy drinks, jars, punnets, tubs and trays for food items, bottles for household, personal care and pharmaceutical products, and sheet and film for general packaging.

Other forms of PET include:

- REFPET – Refillable PET;
- NRPET – Non-returnable PET;
- Bio PET – PET resin manufactured from the same petro-sourced element – terephthalic acid – but this time from bio-sourced ethylene glycol i.e. the ethylene glycol is obtained from plants (e.g. sugar cane and sugar beet) by different thermo-chemical processes (also called 'bio-sourced PET');
- Biodegradable PET – PET that will degrade under certain conditions i.e. in biologically-active environments;
- rPET – Recycled PET;
- vPET – Virgin PET.

Petco Producer Responsibility
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What is PET Recycling?

PET bottles are made of one of the few polymers that can be recycled into the same form – a new beverage bottle – again and again. This closes the recycling loop and enables 'cradle to cradle' packaging solutions.

PET Plastic Recycling in South Africa

We can be proud that to date, South Africa has one of the highest audited PET bottle recycling rates in the world. Please check our latest annual review to see latest collection and recycling rates.

In South Africa, recycled PET (rPET) can be used to make many new products, such as polyester staple fibre for apparel (clothing), home textiles (duvets, pillows, carpeting), automotive parts (carpets, sound insulation, boot linings, seat covers), industrial end-use items (geotextiles and roof insulation), strapping, fruit carton corner pieces, and new PET packaging and bottles for both food and non-food products. It is generally blended in a ratio of virgin to recycled PET, depending on the application required.

From Petco's perspective, the production and use of both food grade and non-food grade rPET resin remains the major growth opportunity for PET recycling in South Africa. The use of rPET in food-grade PET packaging entails compliance with extremely stringent standards for health, safety and product quality. It represents the most sustainable use of the raw material by 'closing the loop' where the recycled resin can be used repeatedly in new bottles, using less resources, saving forex, and maximising the use of resources already extracted.

Regarding specific end-uses for rPET, clear and light blue bottles can be used for any end-use (food-grade, fibre, geotextile and strapping). Food-grade recycling can only use clear bottles at the moment. Green and brown bottles can be used for fibre, geotextiles or strapping.

The following design choices hamper the PET recycling process:

1. Luminous or opaque bottles and jars – do not place these in the recycling bin.
2. Bottles and jars with metallic caps and closures – remove these metallic elements before placing them into the recycling bin.
3. Bottles and jars with ink printed directly onto them – do not place these in the recycling bin.
4. Bottles and jar with shrink sleeves on them – remove the shrink sleeve before placing them into the recycling bin.
5. Bottles and jars that are soiled – always squash your bottle and place the lid back on,

Learn more in our Design for Recycling guidelines.

Is PET safe?

There has been much confusion about the safety of PET after concerns were raised about the safety of a different kind of plastic, namely the polycarbonate products containing



bisphenol A (BPA) which are most often used to make reusable rigid containers and electronic devices. There is no connection between PET plastic and BPA.

BPA is not used in the production of PET material, nor is it used as a chemical building block for any of the materials used in the manufacture of PET.

Phthalates (pronounced tha-lates) are a class of chemicals that include three subsets, each with different properties. Polyethylene terephthalate (PET) belongs to one of these phthalate subsets, but not the one most commonly associated with the term. Orthophthalate is the phthalate subset most commonly referenced and discussed in popular literature and on internet sites, and which has been the subject of some negative press. Often used to make various plastics more flexible, this type of phthalate is also called a plasticiser. PET does not contain plasticisers or orthophthalates. Plasticisers are never substituted for terephthalates used in the manufacture of PET, nor are the two ever mixed. Current research shows that PET does not contain or leach oestrogen-like chemicals such as BPA or other endocrine disrupters.

What is Bottle-2-Bottle Recycling, and why is it so important?

Bottle-2-Bottle technology, which allows the recycling of carbonated soft drink (CSD) grade resin into new bottles, stands as a sustainable approach that closes the loop in raw material usage. Two Bottle-2-Bottle PET recycling plants, approved by Coca-Cola – Kronos and Starlinger, are currently in operation.

Petco has played a significant role in supporting bottle-to-bottle recycling. As a result, food-grade recycled PET (rPET) has become the ultimate destination for a portion of Petco's total collection. This support has led to a remarkable increase in the availability of rPET over the years. Since its introduction in 2012, demand for rPET has consistently grown. The increased availability of food-grade rPET to Petco members and the broader packaging sector is a noteworthy achievement facilitated by Petco.

Extrupet's expansion of its food-grade recycling line was finalized by the end of 2020 and became fully operational in 2021, thereby boosting bottle-to-bottle recycling capacity by an additional 20,000 tonnes. Excitingly, Extrupet is set to further expand its bottle-to-bottle plant in 2023, with the long-term goal of increasing recycling capacity to 65,000 tonnes of post-consumer recycle (PCR) annually.

The success of these projects was made possible through Petco's contracted financial support, tied to the volume of bottles recycled. Petco's ongoing commitment ensures the sustainability of these initiatives, in contrast to past experiences with similar projects. We are proud to be part of an essential PET recycling initiative and proud to be the first African country to achieve this significant milestone in closing the recycling loop.

Contact Petco

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