What Is PLA in Teabags?

From the teas.co.uk wiki

> **The short version:** PLA in teabags: plant-based bioplastic, industrially compostable but not home compostable, technically still plastic. How to verify "plastic-free".

PLA is the word behind most "plastic free" teabag confusion. For more teabag safety reading, see which are plastic free.

Last reviewed by the teas.co.uk team in January 2026.

This PLA summary draws on published studies and brand testing up to May 2026; research continues, every figure is an estimate, and this is not medical advice.

PLA at a glance

Detail	Fact
What PLA stands for	Polylactic acid
Source	Plant starch (typically corn, sometimes sugarcane)
Classification	Bioplastic (plant-derived polymer)
Is it plastic?	Yes, technically a polymer/plastic
Marketing label	Often "plant-based" or "compostable" or even "plastic-free"
Industrial compostability	Yes, breaks down in industrial composting facilities (70C sustained, controlled)
Home compostability	No (typically); requires industrial conditions
UK home composting reality	PLA bag may persist for years in standard garden compost
Microplastic shedding	Less researched than conventional plastic; conservative position assumes some shedding
Better than nylon/PET?	Avoids fossil-fuel petroleum; is plant-based; but still polymer

What PLA actually is

PLA is a thermoplastic polymer, a long chain of repeating lactic-acid units, made by fermenting plant starch, typically corn or sugarcane. The fermentation produces lactic acid, which is then polymerised into the long-chain PLA. The result has much the same physical behaviour as petroleum plastics, it can be moulded,

extruded and sealed, but it is plant-derived. It turns up well beyond tea, in bioplastic food containers, single-use cutlery, 3D-printing filament and agricultural films. In teabags it is used as the mesh in pyramid bags (replacing nylon or PET) or as a heat-seal on paper bags. The plant feedstock makes it renewable in a way petroleum plastic is not; the polymer chemistry makes it function like plastic all the same.

Why brands use it

Brands have moved to PLA from petroleum plastic for several reasons. Sourcing from plants supports a real sustainability claim; PLA pyramid bags run on existing manufacturing equipment with little retooling; the compostable label reads better to shoppers than plastic, even when the composting is industrial rather than home; and PLA holds up well enough through brewing. So the switch is real sustainability progress combined with a marketing benefit, not pure greenwashing, but it does involve careful claim management. See are teabags plastic.

The catch: industrial versus home composting

The catch is the gap between industrial and home composting. Industrial facilities run at sustained high temperatures (around 70C) with controlled moisture and microbes, and PLA breaks down within months there. A home compost bin runs at ambient outdoor temperature in uncontrolled conditions, where PLA can persist for years. Worse, UK food-waste collection varies by council: some accept bioplastic for transfer to industrial composting, others refuse it, and many have no clear policy, so a lot of PLA ends up in general waste and then landfill, behaving much like other plastic in the short to medium term. So compostable on a PLA pack is technically true but functionally misleading for most households, and paper-only construction actually composts reliably at home. See compostable bags.

Is PLA better than nylon?

Yes in some ways, no in others. Better than nylon or PET: it is plant-derived rather than petroleum, has a lower production carbon footprint, and is at least industrially compostable. Less good: the supply chain is newer, it currently costs more (though that gap is closing as PLA scales), and the microplastic-shedding research is thinner, so the conservative position assumes some shedding. Overall it beats petroleum plastic on environmental terms but is not the same as fibre that is free of plastic altogether. The PLA-versus-conventional-plastic comparison is an improvement; the PLA-versus-paper-only comparison is a step back. See microplastics.

What to look for if you want truly plastic-free

To tell a bag with no plastic at all from a PLA based "plastic free" claim, look for a few things. "Plastic free" plus "home compostable" together implies a bag made only of paper, since PLA is not home compostable. The TUV Austria OK Compost Home certification is the strictest home mark and excludes PLA. Stitched-edge bags need no polymer sealant at all. Ethical brands usually disclose materials component by component on their websites. And when in doubt, loose leaf bypasses the whole question. See how to avoid plastic.

What to buy

For bags made only of paper, buy Dragonfly, Hampstead Tea or Pukka (stitched paper). For mainstream plastic-free buy Yorkshire Tea (since 2020), Clipper or PG Tips. For PLA-based premium (still technically plastic) there is Teapigs and some Twinings pyramid lines. For absolute certainty buy loose-leaf tea.

Reference noted

- PubMed: Tannins and non-haem iron absorption

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More tea reading

For the broader plastic question see are teabags plastic, which teabags are plastic-free and microplastics in teabags explained. For PFAS concerns see PFAS in teabags. For switching see the switch guide. For compostability see compostable tea bags. For loose-leaf brewing see brewing loose leaf tea.

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