

THE MYTH OF CIRCULARITY

As the plastic waste crisis grows, industry executives point to a 'circular' economy—where plastic waste is continuously recycled into new objects—as the solution. But environmentalists aren't buying it. Circularity, they say, is a myth:

Although the production of bioplastics is increasing, 99% of today's plastics come from fossil fuels. Only a tiny fraction of these synthetic plastics have ever been recycled, in large part because of how energy-intensive, expensive, and polluting the process can be. Even when glass or paper can be used for packaging instead, companies rarely switch because cheap plastic means bigger profits. New technologies like chemical (or molecular) recycling are failing to offer a viable alternative. The circular economy, as far as plastics are concerned, remains a distant dream.

**8.3
billion**

METRIC TONS

total petroleum-based plastic production up to 2015 (more than 20 times the mass of all humans currently on earth)



76%
of this plastic is now waste



60%
of it is in landfills



9%
is incinerated



0.7%
is recycled more than once



6%
is recycled once into new products



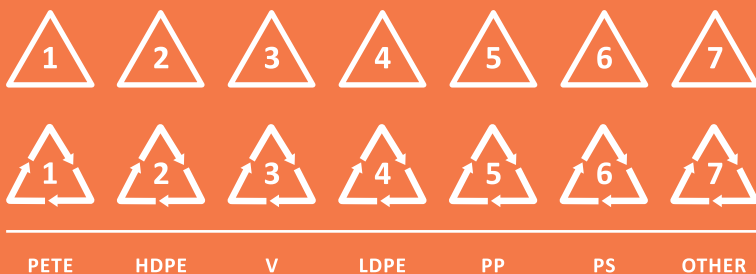
ILLICIT TRADE

[Volume Unknown] According to Minderoo's Plastic Waste Makers Index, about 38% of single-use plastic waste is 'mismanaged.' This likely includes waste lost to illicit trade and illegal dumping or burning. That figure, however, obscures just how the trade of plastic waste operates. Hard-to-recycle plastic waste (in addition to e-waste, toxic, and nuclear waste) is illegally exported to developing countries, where it's often listed as being recycled but is in fact landfilled or incinerated; or it's recycled using dangerous processes, often by children or migrants. This may bump up recycling rates but relying on unsafe and coerced labor is never 'sustainable.' For a fuller account, see the sources below:

[Production, use, and fate of all plastics ever made](#) (Science Advances 2017)

[Baseline Report on Plastic Waste](#) (UNEP 2020)

[Plastic Waste Makers Index](#) (Minderoo Foundation 2023)



The Recycling Symbol—What does it really mean?

These symbols appear on virtually all plastic products, but do we really know what they mean? The numbers represent a Resin Identification Code—or RIC—classifying the type of plastic polymer. But RICs don't actually represent recyclability. In 2013, ASTM International, a standards organization based in the US, replaced the arrows with solid triangles to remove the confusion about the products' recyclability. But plastic producers, to maintain the illusion of recyclability, continue to use the symbols with arrows.