

The Total Global Production of Plastics is Often Undercounted

A full accounting must include additives, fibers and *all* resins (not just single-use disposables)

Market Segment	Market Sub-segments	Market Share (2015, by segment)	Production (2019) Million metric tons (Mmt)
Resins ¹	Thermoplastics, ² including: * Fiber - Polypropylene	81 % included above	368
	Polyurethanes (PUR)	6 %	
	Other Thermosets ³ (<i>not</i> PUR)	13 %	
	Elastomers (rubber)	included above	
	Adhesives & Sealants	included above	
	Paints & Coatings	included above	
Fibers ⁴ (PP&A)	Polyester (mainly PET)	89 %	< 68
	Polyamide (nylon)	7 %	
	Acrylic (polyacrylonitrile, PAN)	4 %	
Additives ⁵	Plasticizers (phthalates, others)	34 %	~ 33
	Fillers	28 %	
	Flame Retardants	13 %	
	Antioxidants (bisphenols, etc.)	6 %	
	Heat Stabilizers (metals, etc.)	5 %	
	Impact Modifiers	5 %	
	Colorants	2 %	
	Lubricants	2 %	
	UV Light Stabilizers	1 %	
	Others	4 %	
TOTAL Global Production of Plastics in 2019:			~ 469 Mmt

Analyzed and composed by Mike Belliveau, [Defend Our Health](#), June 2021, @preventharm

¹ PlasticsEurope. Association of Plastics Manufacturers. **Plastics – the Facts 2020**.

https://www.plasticseurope.org/application/files/8016/1125/2189/AF_Plastics_the_facts-WEB-2020-ING_FINAL.pdf.

PlasticsEurope, Association of Plastics Manufacturers. **World Plastics Market Demand 2015 by Types**. (Slide 3.)

<https://committee.iso.org/files/live/sites/tc61/files/The%20Plastic%20Industry%20Berlin%20Aug%202016%20-%20Copy.pdf>. Both citing PlasticsEurope Market Research Group (PEMRG) and Conversio Market & Strategy GmbH.

² **Thermoplastics** can be heated and remolded. Thermoplastic market share (2015): 26% polypropylene (PP), 18% low-density & linear low-density polyethylene (LDPE, LLDPE), 17% polyvinyl chloride (PVC), 16% high-density & medium-density polyethylene (HDPE, MDPE), 7% polyethylene terephthalate (PET) (non-fiber), 7% polystyrene (PS), 3% acrylo-nitrile butadiene styrene & related (ABS, ASA, SAN), 1% polycarbonate (PC), 1% polyamides (PA, nylon), and 4% others.

³ **Thermosets** cannot be remelted and reformed. They include polyurethanes (6% market share of all resins, 2015), urea-formaldehyde foam, vulcanized rubber, and other resins: polyester, epoxy, melamine, silicone, vinyl ester, and more.

⁴ 74 Mmt of synthetic fibers were produced in 2019 according to Englehardt AW (2020). **The Fiber Year 2020**

–Deceleration along the textile chain. *International Fiber Journal*. July 16.

<https://fiberjournal.com/the-fiber-year-2020-deceleration-along-the-textile-chain/>. To avoid double counting, this total was reduced by 6 Mmt, the 2013 production total for polypropylene fibers, which are already included in the resins total from PlasticsEurope. See: Nonwovens Industry. **Report on Polypropylene Fiber Market** Published. 1/29/16.

<https://www.nonwovens-industry.com/contents/view-breaking-news/2016-01-29/report-on-polypropylene-fiber-market-published/>.

⁵ In 2015, plastics consisted of 7% additives and 93% resins, on average. This same ratio may overestimate the additive content of fibers, which varies widely. Geyer R, Jambeck JR, Law KL (2017). **Production, use, and fate of all plastics ever made**. *ScienceAdvances*. 3:e1700822. <https://dx.doi.org/10.1126/sciadv.1700782>. See Supplemental Material, Table S3.