
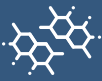









## Plastic pollution at each life stage

Stages	Pollution
 <b>Resources</b> (oil extraction & bio-based feedstock)	CO <sub>2</sub> , CH <sub>4</sub> , fracking water, oil spills, chemicals, fertilizers and pesticide
 <b>Polymer production</b>	pellet/nurdle loss, loss of flakes and powder, CO <sub>2</sub> , CH <sub>4</sub> , hazardous air pollutants, micro-/nanoplastics pollution, airborne microplastics, monomers and polymers, non-intentionally added substances (e.g. formaldehyde) and other chemicals
 <b>Product manufacture</b>	(airborne) micro-/nanoplastics pollution, pellet/nurdle loss, microfibres, general microplastics/ paint fragments in wastewater, loss of flakes and powder, monomers and polymers, chemicals
 <b>Transport &amp; trade</b>	micro-/nanoplastics pollution (pellet loss, airborne microplastics, litter, fragmentation), unintentional releases of pellets, flakes and powders, monomers and polymers, chemicals
 <b>Commercial, industrial &amp; consumer use</b>	e.g. tire dust, paint dust, microfibres, cigarette butts, single-use plastics, fishing gear, agricultural plastics, microplastics, littering (e.g. food packaging), monomers and polymers, endocrine-disrupting and other chemicals
 <b>Waste management &amp; recycling</b>	microplastics, particulates, heavy metals, CO <sub>2</sub> , CH <sub>4</sub> , monomers and polymers, chemicals
 <b>Removal &amp; remediation</b>	micro-/nanoplastics, monomers and polymers, microfibres, endocrine-disrupting and other chemicals

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## References

- M. O. Fernandez, L. Trasande, The global plastics treaty: an endocrinologist's assessment, *Journal of the Endocrine Society*, 2023; bvad141, <https://doi.org/10.1210/jendso/bvad141>.
- J. Flaws, P. Damdimopoulou, H. B. Patisaul, A. Gore, L. Raetzman, L. N. Vandenberg, *Plastics, EDCs & Health. A Guide for Public Interest Organizations and Policy-Makers on Endocrine Disrupting Chemicals & Plastics*, 2020, [https://www.endocrine.org/-/media/endocrine/files/topics/edc\\_guide\\_2020\\_v1\\_6chqennew-version.pdf](https://www.endocrine.org/-/media/endocrine/files/topics/edc_guide_2020_v1_6chqennew-version.pdf).
- R.M.R.M. Jayathilaka, W.R.W.M.A.P. Weerakoon, K.W. Indika, K. Arulanathan, H.M.P. Kithsiri, Spatio-temporal variation of plastic pellets dispersion in the coastline of Sri Lanka: An assessment of pellets originated from the X-Press Pearl incident during the Southwest monsoon in 2021, *Marine Pollution Bulletin*, Volume 184, 2022, 114145, ISSN 0025-326X, <https://doi.org/10.1016/j.marpolbul.2022.114145>.
- C. D. Kassotis, K. C. Klemp, D. C. Vu, C.-H. Lin, C.-X. Meng, C. L. Besch-Williford, L. Pinatti, R. T. Zoeller, E. Z. Drobnis, V. D. Balise, C. J. Isiguzo, M. A. Williams, D. E. Tillitt, S. C. Nagel, Endocrine-Disrupting Activity of Hydraulic Fracturing Chemicals and Adverse Health Outcomes After Prenatal Exposure in Male Mice, *Endocrinology*, Volume 156, Issue 12, 1 December 2015, Pages 4458–4473, <https://doi.org/10.1210/en.2015-1375>.
- J. Muncke, AM. Andersson, T. Backhaus et al. Impacts of food contact chemicals on human health: a consensus statement. *Environ Health* 19, 25 (2020), <https://doi.org/10.1186/s12940-020-0572-5>.
- R. Ramasamy, T.A. Aragaw, R. Balasaraswathi Subramanian, Wastewater treatment plant effluent and microfiber pollution: focus on industry-specific wastewater. *Environ Sci Pollut Res* 29, 51211–51233 (2022). <https://doi.org/10.1007/s11356-022-20930-7>.