

## EU action against microplastics



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#### **EUROPEAN COMMISSION**

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#### **Foreword**

#### Microplastic pollution: a growing source of concern

Microplastics are accumulating in our environment. These tiny plastic particles are persistent, very mobile, and notoriously hard to remove from nature. Scientists and citizens are increasingly worried.

We now find them everywhere, in soils and seas, in the depths of the ocean and in pristine regions like the Arctic, in the food we eat and the water we drink. All eco-systems are affected, no food chain is untouched.

This omnipresence adds to the pressures that have pushed the world beyond the planetary boundary for chemical pollution. The risks related to high levels of human exposure are a cause of grave concern. Microplastic pollution also has negative impacts on economic sectors that depend on healthy soils and on clean, plastic-free rivers and oceans.

The case for preventive action is crystal clear. As part of the European Green Deal, the EU has taken measures to combat microplastic pollution on all fronts, aiming at reducing microplastic releases to the environment by 30% by 2030. On the international stage, the EU is advocating strongly for ambitious action, notably in the negotiations to deliver a legally binding instrument to end plastic pollution.

Most microplastic pollution comes from the degradation of plastic products that end up in the environment due to poor waste management. To get results on the ground, Europe needs to see its existing rules on plastics and waste effectively implemented, and the proposals for more ambitious rules on packaging and waste shipments passed swiftly into law.

Further pressures come from microplastics that are intentionally added to certain products, and from the unintentional release of particles that escape due to abrasion, wear and tear, or inadequate pollution control. The restriction of intentionally added microplastics in products adopted in September 2023 and the Commission's proposal for EU rules to prevent plastic pellet loss in the environment are key initiatives to tackle such pollution at source. Furthermore, stepping up the

monitoring of microplastic releases and prevalence in the environment is essential to track progress and assess the effectiveness of measures taken.

Addressing the release of microplastics is also an important element of the EU policy to make sustainable products the norm. The proposed frameworks for developing



future product requirements should enable us to address this challenge, notably in the context of Ecodesign, construction products and Euro 7. Industry too can play a leading role by investing in solutions that abate microplastic pollution and by boosting research and innovation.

There is a lot we can do to tackle microplastic pollution, and by taking many tangible steps in this area, substantial results can be achieved. The reward – cleaning up our act and preserving our natural world for generations to come – is worth our every effort.

#### Virginijus Sinkevičius





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#### Microplastics: on the policy agenda in the EU and globally

Back in 2018, the EU Strategy for Plastics in a Circular Economy<sup>1</sup> identified the need for more scientific research and solutions for tackling microplastics pollution. The group of Chief Scientific Advisers of the European Commission confirmed the potential risks posed by microplastics and encouraged action to reduce and prevent further pollution.<sup>2</sup>

In the European Green Deal<sup>3</sup>, the Circular Economy Action Plan for a cleaner and more competitive Europe<sup>4</sup> and the Soil Strategy for 2030<sup>5</sup>, the Commission committed to address microplastic pollution. The Zero Pollution Action Plan set a target on reducing microplastic releases into the environment by 30% by 2030.<sup>6</sup>

The EU is promoting international action to set the global framework for plastics and microplastics. In the context of the negotiations of a new legally binding instrument to end plastic pollution<sup>7</sup>, the EU is advocating for ambitious measures, including minimising the risk of leakage of plastic pellets, reducing the release of unintentional microplastics, and restricting the intentional addition of microplastics to consumer products. The EU continues supporting relevant action in the International Maritime Organization and the Regional Seas Conventions for the Mediterranean, the Baltic and the Northeast Atlantic and the Black Sea.

This brochure provides an overview of EU policies and initiatives to combat microplastic pollution, promote research and innovation, and ensure integrated monitoring of microplastics.

# Microplastics released into the environment



United Nations Environment Programme, "UNEA Resolution 5/14 entitled "End plastic pollution: Towards an internationally legally binding instrument", 2022.



<sup>1 &</sup>lt;u>COM/2018/028 final</u>

Scientific opinion on the environmental and health risks of microplastic pollution, April 2019.

<sup>3 &</sup>lt;u>COM(2019) 640 final</u>

<sup>4 &</sup>lt;u>COM(2020) 98 final</u>

<sup>5 &</sup>lt;u>COM/2021/699 final</u>

<sup>6 &</sup>lt;u>COM/2021/400 final</u>

# 2. Tackling key sources of microplastic pollution

# 2.1. Unsustainable consumption and improper disposal of plastic products

The current unsustainable patterns of plastic consumption are projected to lead to a threefold increase in global plastics use by 2060. Globally, by 2060 plastic leakage to the environment is expected to double to 44 million tonnes a year, and the stocks of accumulated plastics in water bodies is projected to more than triple. Most of this pollution comes from larger debris known as macroplastics.<sup>8</sup>

In accordance with EU water legislation, in particular the Marine Strategy Framework Directive, Member States are required to tackle marine litter where it undermines the attainment of good environmental status of their marine waters. These efforts are important for the resilience of the blue economy and they contribute to achieving the UN Sustainable Development Goal 14 "Life below water", which sets the objective to conserve and sustainably use the oceans, seas and marine resources for sustainable development.

The EU has taken a number of regulatory initiatives to tackle pollution coming from plastic products that end up in the environment and degrade there into microplastics. These measures contribute to reducing the generation of plastic waste, improving its collection and recycling, and incentivising the use of recycled content in new products.

The Waste Framework Directive<sup>9</sup> prohibits the abandonment, dumping or uncontrolled management of waste. It requires Member States to identify products that are the main sources of littering, notably in natural and marine environments, and take measures to prevent, combat and clean up all types of litter from such products. It also requires the separate collection of plastic waste and contains ambitious targets on the preparing for reuse and recycling of municipal waste, which contains increasing amounts of plastics. The directive provides for a review in 2024, in which the Commission is to consider targets for further waste streams.

# Plastic leakage is expected to double



8 <a href="https://www.oecd.org/environment/global-plastic-waste-set-to-almost-triple-by-2060.htm">https://www.oecd.org/environment/global-plastic-waste-set-to-almost-triple-by-2060.htm</a>

<sup>9</sup> Directive 2008/98/EC

The 2018 amendment of the EU rules on packaging<sup>10</sup> significantly increased the recycling targets for plastic packaging waste to ensure that waste is returned to the material loop and used as a resource. The Commission recently gave recommendations to Member States who are at risk of missing the 2025 recycling targets.11 The challenges concerning plastic waste are evident, with nineteen countries at risk of missing the material-specific target for the recycling of plastic packaging.

The Commission proposal for a new packaging regulation<sup>12</sup> includes measures to increase reuse and recyclability of packaging, as well as targets for recycled plastic content, which aim to reduce waste, further boost the supply and demand of plastic waste and in this way minimise its leakage in the environment. The recent proposal on circular design of vehicles13 includes also targets for plastic recycling and recycled content. The relevance of such targets has also been brought up in the context of the waste electric and electronic equipment directive<sup>14</sup>, which is currently under evaluation.

To specifically address at source the pollution caused by the unsustainable consumption of certain plastic products, in 2019 the EU adopted a directive on the reduction of their impact on the environment. 15 This instrument covers the most littered single-use plastic products and fishing gear. The Commission has been working on ensuring the proper implementation of the comprehensive set of measures the directive introduced. Such measures include market restrictions, consumption reduction measures, product and marking requirements and awareness raising. The directive provides for carrying out a review in 2027, including as regards the list of plastic products under its scope and considering further measures to reduce littering of such products.

Concerning biodegradable plastics, the Single-Use Plastics Directive bans products made

from oxo-degradable plastic, which does not properly biodegrade in the environment and thus contributes to microplastic pollution. Furthermore, the rules apply to products made both of conventional and of biodegradable plastics due to the difficulties to ascertain full biodegradability, notably in the marine environment.

As outlined in the EU policy framework on biodegradable plastics<sup>16</sup>, such plastics should not be considered a solution for inappropriate waste management or littering. They can play a role in very specific applications where plastics cannot be fully collected - for instance using certified biodegradable mulch films could contribute to avoiding soil plastic pollution and could be combined with other measures such as extended producer responsibility for agricultural plastics.

As the plastic pollution coming from improper waste management is a global challenge, new rules governing the international trade of plastic waste were adopted in 2019 under the Basel convention. The amount of mismanaged plastic waste has been soaring particularly in non-OECD countries<sup>17</sup>, and the EU banned the export of unsorted plastic waste to those countries in 2021.18 The Commission proposal for new rules on waste shipments<sup>19</sup> aims to ensure that the EU takes responsibility for its waste and only exports it to countries that are willing to receive it and have demonstrated their ability to treat it in an environmentally sustainable manner. The Commission is committed to continue tackling the international challenges of trade in plastic waste.20



<sup>10</sup> OJ L 150, 14.06.2018, p. 141-154

<sup>11</sup> COM/2023/304 final

<sup>12</sup> COM/2022/677 final

<sup>13</sup> COM/2023/451 final

<sup>14</sup> Directive 2012/19/EU 15 Directive (EU) 2019/904

<sup>16</sup> COM(2022) 682 final

<sup>17</sup> https://www.oecd.org/environment/plastics/Policy-Highlights-Cost-and-financing-for-a-future-free-from-plastic-leakage.pdf

<sup>18</sup> OJ L 433, 22.12.2020, p. 11-19

<sup>19</sup> COM/2021/709 final

<sup>20</sup> COM(2021) 708 final

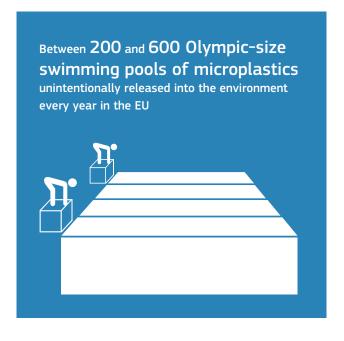
### 2.2. Microplastic releases in the environment

#### Products with intentionally added microplastics

Every year around 145 000 tonnes of microplastics are deliberately added to a range of products placed on the EU market including cosmetics, detergents, paints, fertilisers, plant protection products and products used in the oil and gas industry. Microplastics are also used as the soft infill material on artificial turf sports pitches. Around 42 000 tonnes of intentionally added microplastics are estimated to be released into the environment every year.

To avoid or reduce such releases, the EU adopted<sup>21</sup> a wide-ranging restriction on microplastics in products placed on the EU market under the EU legislation on chemicals ('REACH').<sup>22</sup> This restriction is expected to prevent the release of around 500 000 tonnes of microplastics over





#### Unintentional release of microplastics

Between 0.7 and 1.8 million tonnes, or up to 600 Olympic-size swimming pools, of microplastics are estimated to be unintentionally released into the environment every year in the EU.



<sup>21</sup> Commission Regulation (EU) .../... amending Annex XVII to Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regards synthetic polymer microparticles

<sup>22</sup> EUR-Lex - 02006R1907-20221217 - EN - EUR-Lex (europa.eu)

<sup>23</sup> SWD(2023) 157 final

Already in 2018, up to 74 sources of microplastic emissions were identified.<sup>24</sup> While the relative share of each source varies widely across studies, paints (including coatings), tyres, plastic pellets, synthetic textiles, geotextiles and, to lesser extent, detergent capsules emerge as main sources of unintentional releases of microplastics. With future research and monitoring, further sources could be identified. For example, plastic recycling has been recently highlighted as an additional source.<sup>25</sup>

The Commission proposal for a Regulation to prevent plastic pellet losses to the environment<sup>26</sup> and the REACH restriction

regulation on intentionally added microplastics together will lead to reductions in microplastic releases representing more than one fourth of the required effort to reach the 30% target by 2030.

Furthermore, the Commission addressed the release of microplastics from tyres in the proposal for EURO 7 Regulation.<sup>27</sup> As regards paints, synthetic textiles, detergent capsules and geotextiles, a preliminary analysis carried out by the Commission<sup>28</sup> concluded that further assessment of their emission profiles and suitable alternatives is needed to identify the most effective and efficient measures addressing those sources.

231 000

360 000

#### Main sources of unintentional microplastics release to the EU environment Lower and higher estimates (2019 - tonnes/year) **Paints** Tyres Pellets **Textiles** Geotextiles Detergent capsules 863 000 540 000 5 980 61 078 19 750

1 649

4 140

6 000

<sup>24</sup> UN Environment Programme, 'Mapping of Global Plastics Value Chain and Plastics Losses to the Environment: With a Particular Focus on Marine Environment', 2018

<sup>25</sup> Brown et al., 'The potential for a plastic recycling facility to release microplastic pollution and possible filtration remediation effectiveness', 2023

<sup>26</sup> Proposal for a regulation on plastic pellets – October 2023

<sup>27</sup> Commission proposes new Euro 7 standards (europa.eu)

<sup>28</sup> Pellets SWD – October 2023

#### **Paints**

Paints (including coatings) contain on average 37% plastic polymers, which ensure their durability and flexibility.<sup>29</sup> However, release during application, wear and tear, or removal of paints are estimated to represent the largest source of unintentional microplastics pollution.<sup>30</sup> Of the 2.3 million tonnes of plastic polymers used in different types of paint across the EU in 2019, approximately 21% leaked into the environment in the form of microplastics.

While the REACH restriction on intentionally added microplastics<sup>31</sup> introduces reporting requirements for certain paint products, the Commission proposals on Ecodesign for sustainable products and on construction products<sup>32</sup> provide for setting sustainability requirements for paints taking account of a broad range of parameters, including

microplastic release, and subject to dedicated impact assessments.

Relevant industries have a role in developing EU-wide guidelines to minimise microplastic releases such as on the application and removal of paints and the possible promotion of mineral paints in the construction sector.

# Microplastics leakage into the environment from paints in EU-27 (2019 - in thousand tonnes) in water/oceans on land 210 47 55 Architectural Automotive Marine General industry Wood Road

<sup>29</sup> Verschoor et al., Emission of microplastics and potential mitigation measures, 2016

<sup>30</sup> Paruta et al. 2022. A global assessment of paint's contribution to plastic leakage to Land Ocean & Waterways

<sup>31</sup> Commission Regulation (EU) .../... amending Annex XVII to Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as regards synthetic polymer microparticles

<sup>32</sup> Regulation (EU) 305/2011

#### **Tyres**

The friction of tyres on road surfaces generates tyre wear particles (TWPs), which are expected to remain a source of concern with the projected increase in EU passenger car and road freight transport over the coming decades. Other factors which influence the abrasion of tyres are their composition and design, as well as vehicle weight, the road surface and driving behaviour. The distribution of TWP emissions according to transport type can be found in Figure 2.

The Commission proposal for the EURO 7 Regulation<sup>33</sup> provides for the establishment of tyre abrasion limits for tyres to be placed on the EU market. This will be facilitated by the tyre abrasion measurement methods currently being developed by the UN World Forum on Harmonisation of Vehicle Regulations.

The Commission is developing coherent rules for environmental, energy and safety performance of tyres<sup>34</sup>, to ensure a reduction in tyre abrasion and noise.

The Tyre Labelling Regulation<sup>35</sup> provides for including information requirements for tyre abrasion, once sound methods to test and measure such parameter are available, and subject to a thorough impact assessment.

Continued industry engagement is paramount, for example, under the European Tyre and Road Wear Particles Platform.<sup>36</sup> Driving patterns also have an impact on TWP emissions, so good practices should be promoted, notably as regards:

lower speed limits and better traffic and speed management in urban areas;

- 33 COM(2022) 586
- 34 <u>COM(2020)</u> 789 final
- 35 REGULATION (EU) 2020/740 Article 13 (3)
- 36 https://www.tyreandroadwear.com/



- sustainable mobility measures, such as improved traffic management and reduction of individual transport;
- suitably inflated tyres;
- incentivising certain vehicle features, such as lightweight or tyre particle capturers;
- increased transparency around the chemical composition of tyres.

Since wheel misalignment causes uneven tread abrasion, some Member States apply wheel alignment checks as part of periodic technical inspection, which is a good practice with potential for more systematic application with a view to further reducing the release of microplastics from tyres. Improved road design also has a major role in preventing the release of TWP into the environment, and aspects such as the choice of materials and providing for capture and treatment of run-off water, as well as road cleaning practices, are relevant in the context of public procurement.

#### **Pellets**

Plastic products are produced from small pieces of raw material, mostly between 2 and 5 mm in diameter, generally referred to as "pellets". Despite industry-led efforts, such as the Operation Clean Sweep® (OCS) certification scheme, current practices for handling pellets lead to losses at each stage in the supply chain.<sup>37</sup> The pollution that such losses create has negative impacts on the environment, on the economy, and potentially on human health. For instance, as pellets are easily

transported through the air, by surface waters and marine currents, they contaminate soil, including agricultural lands. Pellets are known to be eaten by a range of marine and coastal species, such as sea turtles, seabirds and shellfish, and once ingested, they can cause physical harm or death.

To avoid this harmful pollution at source, the Commission presented a proposal for a Regulation setting requirements to prevent plastic pellet losses to the environment.<sup>38</sup> Under this proposal, operators manufacturing and handling pellets will have to comply with mandatory requirements, building on the industry's OCS initiative and the Recommendation of the Convention for the Protection of the Marine Environment of the North-East Atlantic on pellet losses.<sup>39</sup> The proposal takes account of the specificities of SMEs, which can also benefit from advisory services under the InvestEU Advisory hub and the European Enterprise Network.

A standardised methodology to estimate pellet losses will also be developed, to facilitate data and reporting requirements, including that in the REACH restriction on intentionally added microplastics.

The EU is also supporting the discussions at the International Maritime Organisation (IMO), which is looking at the carriage of plastic pellets by sea in freight containers and is assessing both voluntary and mandatory measures. This would subject pellet-handling operators to stricter requirements.

The equivalent of between 2100 and 7300 truckloads of pellets were lost to the environment in the EU in 2019





<sup>37</sup> Pellets SWD - October 2023

<sup>38</sup> Proposal for a regulation on plastic pellets - October 2023

<sup>39</sup> OSPAR Recommendation 2021/06

#### **Textiles**

Global consumption of clothing and footwear is projected to increase by 63% between 2019 and 2030, and textiles made from synthetic fibres are expected to account for the greatest share of this increase. In addition to their contribution to growing plastic waste generation, such textiles shed microplastic fibres into water or air throughout their entire lifecycle. The EU Strategy for Sustainable and Circular Textiles<sup>40</sup> charted the way to tackle these challenges.

The Commission proposal on Ecodesign for sustainable products provides for setting sustainability requirements for textiles taking account of a broad range of parameters, including microplastic release, and subject to dedicated impact assessments. Developing a measurement standard is relevant in this context. This framework will also enable the future assessment of the use of filters, or other solutions retaining synthetic (microsized) fibres from the water effluent and air outlet of washing machines and tumble dryers. Furthermore, promoting best practices on care and proper disposal of the residue from washing machine and tumble dryer filters

can contribute to preventing the releases of microplastics into wastewater.

Awareness raising amongst textiles users and clear information are also important. Under the revision of the Textile Labelling Regulation, relevant elements include the consideration of providing consumers with information on care and washing guidelines linked to microplastic emissions, as well as end-of-life disposal instructions for textile products, aiming to reduce microplastic releases.

The textiles industry has a role in coordinating efforts to develop solutions, such as the Cross-Industry Agreement for the prevention of microplastic release into the aquatic environment during the washing of synthetic textiles.<sup>41</sup>

Including microplastics releases in life-cycle assessment methods could contribute to better understanding and tackling their impacts from a life-cycle perspective. Such efforts are currently made in the development of the Product Environment Footprint Category Rules (PEFCRs) for apparel and footwear by industry and the European Commission.



<sup>41</sup> https://euratex.eu/cia/



#### **Geotextiles**

Geotextiles are permeable, flexible fabrics mainly made of synthetic fibres, used primarily in road construction, erosion prevention and drainage. Climate change and environmental degradation are expected to create more demand for geotextiles and their global market is expected to triple between 2019 and 2029. However, their use in often harsh conditions leads to the release of microplastics to the surrounding environment. In addition, most geotextiles are never removed past their lifespan, and will eventually breakdown into microplastics.

The Construction Products Regulation and the Commission proposal for its revision<sup>42</sup> provide for setting a broad range of sustainability requirements, including related to the selection of safe, environmentally benign substances, subject to dedicated impact assessments. It is important to develop a measurement methodology and testing protocols to quantify microplastic releases from different geotextiles over their lifecycle, while also considering interaction with weathering agents (e.g. water/salt exposure, oxygen exposure, light and UV radiation).<sup>43</sup> Standardisation bodies are already developing such a methodology.<sup>44</sup>

Campaigns targeting local authorities, professionals and citizens are important to raise awareness on the issue of microplastic releases from geotextiles. Industry has a role in developing guidelines laying out suitable applications for different geotextiles (including natural geotextiles), correct installation, maintenance (e.g. repair of damaged materials, frequency of replacing), and end-of-life management. Such guidelines could help guide private and public procurement.

#### Detergent capsules

Detergent capsules provide for easy and correct dosing and avoid skin contact with active ingredients. They rely on a water-soluble film, mainly composed of polyvinyl alcohol (PVOH), which is designed to dissolve during the washing cycle. While the biodegradation of PVOH in detergent capsules has been demonstrated under stringent screening tests<sup>45</sup>, more research is needed into the full biodegradability of the available PVOH-based grades in all environmental media and their possible emissions of microplastics into the environment.

The proposal for a revised Detergent Regulation<sup>46</sup> provides for empowering the Commission to lay down biodegradability requirements and testing methods for detergent capsules when new scientific evidence so requires.



<sup>43</sup> Existing European (and international) standards for test methods evaluate the degradation of geotextiles from different weathering agents (such as water/salt water, oxygen exposure or abrasion), however it is focusing on the impact on the mechanical properties of the material (e.g. tensile strength) and not on the microplastic releases



<sup>44</sup> For example: <a href="https://www.iso.org/ics/59.080.70/x/p/0/u/1/w/0/d/0/">https://www.iso.org/ics/59.080.70/x/p/0/u/1/w/0/d/0/</a>

<sup>45</sup> Byrne et al., 'Biodegradability of polyvinyl alcohol based film used for liquid detergent capsules', 2021.

<sup>46 &</sup>lt;u>COM/2023/217 final - Article 26 (6)</u>

# 3. Towards integrated monitoring of microplastics

Monitoring of microplastics in the environment is essential to track progress in implementing measures to reduce the pollution they cause. Existing and proposed EU legislation provides for such monitoring in the following areas:

- ► The Marine Strategy Framework Directive introduced monitoring along coastlines, on the surface of the sea and in seabed sediment.
- The recast of the Drinking Water
  Directive<sup>47</sup>, the update of the Groundwater
  Directive and the Environmental Quality
  Standards Directive introduced, subject
  to developing standardised measurement
  and monitoring methodologies, monitoring
  in surface and ground water, along with
  a corresponding Environmental Quality
  Standard; this would feed into monitoring
  under the Water Framework Directive.
- The proposed revisions of the Urban Wastewater Treatment Directive<sup>48</sup> include the introduction of monitoring at the inlets and outlets of urban wastewater treatment plants and in sludge.
- The proposed EU rules on soil monitoring and resilience include the introduction of voluntary monitoring in soil.

Under these instruments, the Commission and the EEA are developing several standardised measurement and monitoring methodologies, starting with drinking water, surface waters, wastewater and sludge. This will facilitate the generation of suitable data on the occurrence of microplastics across the EU. Data on the main sources, resulting from their standardisation requests and related monitoring, integrated with data on the occurrence of microplastics in specific environmental compartments would present a comprehensive 'source-to-sink' flow diagram.

The REACH restriction regulation on microplastics intentionally added to products<sup>49</sup> requires estimated microplastics emissions

to be reported to the European Chemicals Agency (ECHA) on an annual basis for all uses derogated from the sale ban, including paints, pellets and other industrial uses of microplastics.

The second Zero Pollution Monitoring and Outlook report will include an ad hoc assessment of progress on monitoring as regards the target for microplastic releases. This will be accompanied by an assessment of whether the 30% target is achievable by 2030, based on measures taken to date. A regular update on this target, using an agreed methodology, will be included in the subsequent Zero Pollution Monitoring and Outlook reports.

<sup>47 &</sup>lt;u>Directive (EU) 2020/2184</u>

<sup>48</sup> COM/2022/541 final

<sup>49 &</sup>lt;u>EUR-Lex - 02006R1907-20221217 - EN - EUR-Lex (europa.eu)</u>

#### 4. Research & Innovation

Research has a role in improving the understanding around releases from different types of products, such as tyres and synthetic fibres and fabrics, and their cross-cutting health impacts, which will facilitate future innovation efforts.

Innovation should continue to be guided by life-cycle assessments to ensure that suitable alternatives are developed. For example, biodegradable polymer- and mineral-based paints or biodegradable geotextiles could be interesting alternatives if life-cycle assessments show they have no adverse effects on other sustainability objectives. The recent framework for the use of biodegradable plastics<sup>50</sup> guides research to avoid the inappropriate use of these plastics which require very specific material properties and environmental conditions to achieve full biodegradation.

Developing reliable measurement methods and reference materials for microplastics is critical to setting science-based threshold values for the presence of microplastics in environments such as the ocean, drinking water and soil. In this context, increased efforts are needed to study microplastics in soil as this could be the largest sink of plastics<sup>51</sup> in the environment due to the continued spreading of sewage sludge on agricultural land.

The EU continues to support research on the presence, sources, pathways and the impacts of microplastics on the environment as well as human and animal health, as it did under several projects under Horizon 2020.

It is promoting the implementation of the 'safe and sustainable by design' framework along with research into alternatives to chemicals and materials of concern. Furthermore, support for projects aiming to reduce and clean up microplastic pollution has also been available.

EU support for research on the presence, sources, pathways and the impacts of microplastics on the environment			
Project name	Торіс		
MONPLAS	Training to measure health risk of microplastics and monitoring microplastic concentrations in water		
<u>LEON-T</u>	Reducing particle emissions and noise from tyres		
EUROqCHARM	Developing harmonised monitoring and assessment methods for nano-, micro- and macro-plastics pollution		
<u>TOPIOS</u>	Improving the understanding of how plastic litter moves through the oceans		
<u>GLAUKOS</u>	Developing innovative textile fibres and coatings for fishing gear and clothing		
CUSP cluster	Five initiatives studying links between microplastics and human health		
MINAGRIS	Assessing the impact of microplastics on agricultural soils		
PAPILLONS	Sustainability of agricultural plastics in relation to releases and impacts of microplastics and nanoplastics in soils		
LABPLAS	New methods to detect microplastics at sea		

EU support for projects that reduce and clean up microplastic pollution		
Project name	Торіс	
CLAIM	Five new technologies to clean up marine litter	
GoJelly	Developing solutions to microplastics pollution via a filter made of jellyfish mucus	
LimnoPlast	Removing microplastics from the environment and developing environmentally-friendly polymers	
MIMBOX	Novel filter to catch microplastics with every wash	
HYSOLCHEM	Innovative reactor to decontaminate wastewater containing organic pollutants and microplastics and produce high-value chemicals and fuels	

<sup>50 &</sup>lt;u>COM(2022) 682 final</u>

<sup>51</sup> FAO, Assessment of agricultural plastics and their sustainability: A call for action, 2021

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