## Group / Scope

The ESPR requirements should be applied especially to passenger car tyres, but also extended to tyres from pick-up trucks, lorry/truck tyres, motorbike tyres and off-the-road (OTR) tyres.

## Labelling & digital product passport (introduction: ownership matter / specific / section)

In the tyre recycling industry, the idea of a digital product passport (DPP) for tyres is strongly supported and the tyre industry is a frontrunner in this regard. Existing technology like Radio Frequency Identification (RFID) is already being used by some manufacturers and it has proven to be a relatively cost-effective way of identifying tyres throughout their lifecycle, including recycling. However, implementation of such a system at end-of-life is still at its infancy and there are many aspects open for discussion (incl. which information and who will have access), where collaboration across the value chain is crucial. Also, the level of information required at different steps of the value chain needs to be adapted (automotive producer, consumer, tyre collector, retreader, recycler…).

Nevertheless, if the information provided by RFID includes chemical composition, recyclers may use this information to anticipate to the ever-changing regulatory framework restricting substances of concern present in products incorporating recycled rubber from end-of-life tyres (ELT). Therefore, a DPP could be an appropriate way to perform segregation of tyres at end-of-life according to chemical composition and final product destination of the recyclates (e.g., applications used in construction, sport grounds, tyre or automotive parts among others). However, whether segregation of tyres is something which might be economically viable and the role EPR schemes may play in this regard, still needs to be assessed.

Concerning chemical content of recycled rubber, it is important to have in mind that tyre recylers have an strict selection for tyre intake and do not perform any chemical modification of the materials present in ELTs. Recyclers mainly perform a separation into three main components: rubber granulates and powders, steel and textile fibres. Therefore, chemical composition of rubber within the tyre is the same as in the rubber granulate coming from these end-of-life stream, properties that are put at use in different applications.

In a circular economy context, we part from a REACH-compliant product, which is a tyre, made to be safe on the road and made out of rubber among many other raw materials. Rubber is not plastic, once rubber is going through a chemical process called vulcanization, it is hardened and less susceptible to deformation. This process is necessary to achieve improved elasticity, resilience, tensile strength, viscosity, hardness and weather resistance.

Because of this chemical process, rubber is less versatile than plastic and close loop, although possible to a certain extent (see section 3 defining circularity requirements), remains a technical challenge. Therefore, in order to use very efficiently the many valuable raw materials contained in tyres, recyclers do apply an open loop approach in which rubber granulates and powders obtained from processed ELT, from which steel and textile have been removed and also employed in other industries, are used in many different applications across different sectors (automotive, construction, sports and leisure, agriculture …). These applications (e.g., moulded objects, asphalt roads, sport pitches, running tracks …) make good use of the aforementioned properties of improved elasticity, resilience, tensile strength, viscosity, hardness and weather resistance. Despite rubber from ELT substitutes for the uses of raw materials that would be required for those applications, and this represents an efficient use of the resources extracted to make tyres, at the same time also many environmental benefits are achieved, the REACH-compliance of this new products using recycled rubber needs to be reassessed to make sure it does not pose a risk for human health or the environment. In the end, REACH compliance deals with the regulations that were created to improve the environment and protect human health, and those are product-specific.

**Therefore, for tyres, taking into consideration recycling, the digital product passport should be conceived as an opportunity for the better management of resources: information on hazards and uses of chemicals inside tyres would support the implementation of a non-toxic circular economy, because tyre recyclers could consider chemicals in their input materials (end-of-life tyres, ELT), and generate more and cleaner materials from recycling, separate tyres according to chemical composition and also contribute to improving tyre design by raising awareness and improve REACH-screening and removal of toxic chemicals from the economy.**

It need to be highlighted that although tyres are REACH-compliant products, tyres are the biggest microplastic polluters and both the environment and human health are constantly exposed to these microplastic at use phase. For this reason, information about chemicals along the whole tyre value chain will have a huge impact for this product, where the non-toxicity of the chemicals in the manufacturing of tyres is of utmost importance. On top, the tyre recycling industry needs to create open circular solutions using rubber from ELT and despite the many opportunities, these solutions remain limited because of the lack of a holistic REACH-compliancy approach across the whole value chain.

## Defining circularity requirements (durability, recyclability, recycled content…)

The tyre recycling industry supports the use of the life cycle assessment (LCA) a methodology for assessing environmental impacts associated with all the stages of the life cycle of a commercial product, including recycling.

However, there is a lack of comprehensive LCA studies taking into consideration the whole life cycle of tyres, from resource extraction, design, use, recycling and use of recycled content in new product and the life cycle of those products.

On the contrary, there is enough evidence to support the waste hierarchy within the Waste Framework Directive and a prioritization should take place in the following other reduces, reuse/retreading, mechanical recycling, chemical recycling and incineration with energy recovery and incineration without energy recover. Despite illegal landfill of tyres might occur, this is rather marginal in EU as landfilling is forbidden and 95% of the ELTs in EU are collected and treated. Yet, with an enormous untapped potential because for every tyre that is mechanically recycled there is still one tyre that gets incinerated with energy recovery in EU.

**In brief the following aspects should be considered for tyres:**

* **Durability: all tyres put in the EU market for passenger cars and commercial vehicles should be retreadable. This should also take into consideration imports of non-EU tyres.**
* **Recyclability: all tyres should be able to be mechanically recycled under the current state-of-the art technologies. In particular, attention should be paid to tyres containing sealants to make them puncture-free or foams for noise-reducing purposes as those tyres are impossible to sort from normal tyres at end-of-life and can simply not be recycled. Furthermore, when these ELT make it into the recycling stream they contaminate the recycled material and cause fires at recycling facilities**
* **Recycled content: currently, there is no obligation for the automotive industry, the biggest consumer of rubber, to uptake recycled rubber. Despite it is a technological challenge, it is proven that under the current start-of-the-art technology a maximum of 10% of recycled rubber for tyres and 20% of recycled rubber for car frame original equipment manufacturer (OEM) applications can be achieved. Due to the limitations of close loop, mandatory recycled content and green public procurement should be expanded to other products capable of using recycled rubber (e.g., rubberized asphalt).**

## Strategic autonomy

Circularity and strategic autonomy in the EU go hand in hand with reducing dependency from raw materials. It is often forgotten that tyres are not only natural rubber (17%) coming from Asia and until 2023 a critical raw material, but also synthetic rubber (24%) sourced from Russia, steel (12%), textiles (4%). The costs of extracting all raw materials (not only natural rubber) should be taken into consideration and this is also not properly factored in the ESPR prioritization exercise from the JRC.

## Role and target substances of concern

The JRC draft study touches upon key matters such as natural rubber criticality, retreading, recyclability, recycled content. However, a number of very important issues are missed. This includes, especially under the ESPR framework, the link to REACH (including substances of concern in tyres) and, more importantly, the link to the circular economy of the rubber contained in tyres. If the tyre industry wants to improve the circularity of their products and contribute significantly to the circular economy; rubber also needs to find a market in other applications than the tyre sector (e.g., construction, leisure, agriculture …).

When it comes to defining circularity requirements for tyres, we agree that tyres must be able to be recycled under the current state-of-the art technologies, and recyclability is an aspect well-mentioned in the JRC draft report. However, we should keep in mind that close loop for tyres is limited.

Therefore, if we want to have a competitive Europe and be efficient in the use of resources, we do need to think where rubber will be put at use in other applications and link those possible uses to tyre design if required. So, link the selection of the current raw materials to the future applications in which these recovered raw materials will be used. We are not talking about compromising tyre safety to create a rubber hose with recycled content, but work on the concept of greener tyres for a better environment in the first place and the possibility of more recycling by substituting substances of concern with non-toxic alternatives.

In the first place, we know this is a bit peculiar approach but for the tyre case, very different from automotive plastics or packaging, metals, textiles… it is necessary. Otherwise, without big close loop ambitions due to both technical restraints and lack of policy measures, mostly only based in restriction; alternative markets for recycled rubber remain limited.

With the chemical strategy for sustainability (CSS), raw materials extracted from recycling need to grant the same level of protection to the environment as those coming from virgin sources. In the cases of rubber, despite as already mentioned, tyre recyclers using mechanical technologies do not conduct any chemical transformation of the rubber; the competitive disadvantage with virgin rubber in other applications than the tyre industry, comes from the fact that recycled rubber contains those additives used by the tyre manufacturers, which when used for tyres these are REACH compliant products, but that when recycled rubber is substituting for virgin rubber in other applications, the fact that it is sourced from ELT, the additives present in recycled rubber might render the product not REACH-compliant.

**Science-based evidence has proven that the toxicological effects of chemicals in rubber articles do not depend on the quantity of chemicals present in the article, but on the quantities that migrate from the contact area of the article to the human body through the skin and to the environment. However, total content is still used to establish the risk through legislation, with stricter legislation in terms of total content, less tyres are being recycled and more incineration and exports of ELT are taking place. Therefore, a migration approach determining risk should be prioritized over risk.**

Recycled rubber granulate contains firmly bound chemicals, and their migration should not be assessed in unrealistic conditions. For example, within the framework of the EU Commission‘s review of current PAH limits, hazard-related, migration- and emission-based measurement methods must be implemented at the EU level to avoid jeopardizing the environmental benefits of tyre recycling and foster a linear economy and incineration.

Although, a migration approach for restriction instead of a total chemical content opposes to the zero pollution ambition in EU in theory, from the practical point of view, having a science-based circular economy and support end markets for recycled rubber (e.g., infill in sport pitches, playgrounds, skin-contact articles …) it is the most optimal way to minimized the risk associated with ELT recovery options lower in the waste hierarchy (e.g., incineration or illegal landfilling).

Nevertheless, as the argumentation above is rather a sensitive one among policy-makers, without high close loop targets for recycled content in tyres, EuRIC is of the strong opinion that early -and strict - screening of the substances meant to be used in tyres and linked to the circular economy of rubber in subsequent applications is of paramount importance. So, those substances of concern that are not essential for tyre safety and performance should be restricted.

In the end, be it for tyres or other streams, one of the main issues posing problems for the environment -both during product use phase or after recycling- already occur at design. PAHs, for example, is something you don’t need to have in your tyres. Heavy metals like Pb or Cd, can also be avoided at tyre design. A quinone 6PPD, very famous for causing death and sensitivity in different salmon populations in North America can also be avoided as already done by some tyre manufacturers.

**Because, and again, we as mechanical recyclers do not perform any chemical modification from the tyre and we obtain a rubber fraction which is intrinsically the same that put in the market by tyre manufactures and therefore a mixture which is REACH compliant, in order to know unequivocally the chemicals present in the products manufactured and their range of concentration within the mixture a link within ESPR to future REACH revision needs to be made. So, that already at tyre product level:**

* **information required for hazard of substances in the lowest tonnage range is available directly from tyre manufactures by a link to the digital product passport**
* **risks are required for non-threshold substances used in tyres**
* **safety assessments already at tyre level do take combination/cocktail effects of the many different chemicals present**

**Therefore, an increased communication in the supply chain where:**

* **Recyclers should be considered as downstream users of the materials contained in tyres**
* **EU-policies protect EU tyre manufacturers and non-EU tyre manufactures cannot freely use non-regulated substances in EU to produce tyres imported to EU**
* **Non-essential use concept for chemicals in tyres could, at least, be determined by a “chemical” not being present in one manufacture doing tyres with the same function**

These requirements can become an essential enabler of the circular economy, as material cycles using virgin/recycled rubber will be clean(er) from the start and worker exposure to SVHCs in the waste sector as well as the potential contamination of recycled materials or the need for resource-intensive decontamination processes would be prevented.

## Policy coherence with product-specific and horizontal legislation (link to prioritisation)

In terms of policy coherence with product-specific and horizontal legislation, the environmental performance of tyres is largely covered under a number of legislations (e.g., Commission proposal for Euro 7). However, no legislation in place really puts focus on tyre recycling.

**Recycled rubber should be included in the revision of the ELVD and 3R approval, at same time that tyre production and recycling, and applications containing recycled rubber are linked to the new revision of REACH.**

**On top of that, the circular economy of tyres demands a Waste Shipment Regulation that prevents the exports of end-of-life tyres (ELT) out of EU. Otherwise, unless European policies begin to promote tyre recycling, tyres might find a linear economy being incinerated with or without energy recovery out of EU. Exports out of EU should only be limited to processed ELT in the form of rubber granulates or powders achieving the required quality to be used in new applications, substituting for other raw materials (incl. carbon black, steel and textiles outputs).**

**To scale the circular economy of tyres, accelerated work on an EU-wide end-of-waste for rubber granulates and powders coming from ELT is absolutely necessary. EoW already exists in different Member States creating an uneven level playing field.**

EU harmonized EoW criteria will firstly secure that trade across European borders happens normally in equal conditions and with equivalent opportunities across borders. It will also reduce the administrative burdens associated with trading raw materials from recycling. Secondly, and even more important, it secures that the material is accountable for safety and quality criteria. Many regulations, like Declarations of Performance for construction products, or the REACH restriction of chemical substances only apply once the material has ceased to be waste This will be not only an environmental gain but also a market penetration asset.

### Required link to REACH revision for all streams

In EU wants to support circularity, a circular economy should generate safe recycled materials, i.e., free from toxic chemicals and separate toxic chemicals from the material flows. The most efficient way to achieve this is to prevent hazardous chemicals in products that reach end-of-life. Therefore, the main loss from the current delayed REACH reform is that the replacement of hazardous chemicals in products, including tyre and textiles, by safer alternatives will be delayed.

If REACH is delayed, hazardous chemicals will continue to enter the waste stage either:

• preventing the reuse or recycling

• resulting in the downcycling of wastes to recycled materials of lower (chemical)

quality that are applied in low-value applications; or

• contaminating recycled materials potentially putting humans and the environment at risk from (unknown) exposure to these substances as already may happen at the use phase (e.g., microplastics releases from tyres and textiles)