European Tyre Recycling Association

Annex XV - Restriction Report
ECHA Public Consultation on Restriction of Intentionally added Microplastics
Points for reflections

Introduction

> ***'Microplastic'*** *means a material consisting of solid polymer-containing particles, to which additives or other substances may have been added, and where ≥ 1% w/w of particles have (i) all dimensions 1nm ≤ x ≤ 5mm, or (ii), for fibres, a length of 3nm ≤ x ≤ 15mm and length to diameter ratio of >3*

ECHA specified that Infill material meets the criteria for the definition of microplastic and thus, falls within the restriction proposal.The inclusion of infill materials in the microplastic definition is misleading and contradictory with the definition itself and with several parts of the Restriction Report.

Specifically, recycled rubber granulates used as infill material are ***not*** microscopic. They are within the range of 1-2,5 mm. But there are othermore evident discrepancies. The aim to stimulate an open reflection and an objective discussion of microplastics. A more precise reading of the definition of 'microsplastic' in the Restriction Report could eliminate 'infill material' from the discussion and could possibly lead to derogation.

Comments

1. The concept of 'Micro'

'Micron' defines the size of a particle that is 1/1000 of 1 mm. The SBR rubber granulate used as infill material belongs to the 1 - 2,5 mm range.

The range of 1 nano-millimeter (that corresponds to 1/1.000.000 of a mm) to 5 mm seems to be too broad a range, and to include materials with different behavior patterns and impact, which would require a different approach to the restriction parameters.

Sub-ranges should be evaluated differently, because there is a very different impact from 1 nm, from 2,5 or from 10 PM (that corresponds to 2,5 or 10 micron) compared to the impact of 1 - 2,5 mm material.

The definition is formulated in a way that includes any kind of polymers. Those that are subject to a strong fragmentation into microscopspic particles, and have a very high release into the environment, together with polymers, like recycled SBR of 1-2,5 mm that do not fragment, that, if duly used do not release into the environment.

More homogenous groups of materials and sizes would allow a clearer understanding and control of the possible dispersion and impact, a more appropriate restriction and more practical and efficient solutions.

2. The Concern

According to the Report: *"The concern associated with 'microplastic' particles stems, in straightforward terms, from the potential environmental and human health risks that could be posed by the presence of solid particles of polymer-based materials in the environment that:*

- *Are small (typically **microscopic**) making them readily available for ingestion and potentially liable to **transfer within food chains**.*
- *Are very **resistant to environmental (bio)degradation**, which will lead to them being present in the environment for a long time after their initial release and significantly exceeding the very persistent (vP) criteria for substances included in Annex XIII of REACH.*

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- ***(bio)degrade in the environment progressively*** *via fragmentation into smaller and smaller particles, theoretically via 'nanoplastic' particles.*
- *Practically impossible to remove from the environment after release."*

These concerns appear to be groundless with reference to infill materials.

The recycled rubber granulates used as infill material are ***not microscopic.*** It is **improbable to assume** that the rubber granulates are "***potentially liable to transfer within the food chain***."

Their size is generally within the range of 1-2,5 mm. For use as infill, they are confined to the area of the artificial turf which is normally surrounded by curbs and/or other partitions, that contain the rubber granlulate within a specific area.

Rubber granulate is very ***resistant to environmental bio-degradation,*** resilient and long lasting, but it is intended to be used as part of a field, and not spread into the environment.

Rubber granulate **does not** ***bio-degrade into the environment*** via fragmentation.

Infill material is produced from SBR. It is an elastomeric material that due to its elasticity, has the capacity to absorb shock and prevent injuries. Its elasticity allows the material to compress, and then return to its original state without fragmenting. The compression action prevents injuries to people or damage to the material.

Further, non-biodegradable, long lasting materials such as sustainably produced recycled rubber granulate have a positive impact on the environment, if correctly used.

Recycled SBR granulate have a very low CO2 footprint, not only because they are produced from a sustainable recycling process, but also because of their inherent durability. They may also be re-used more than once after a field reaches its end of life because the granulate maintains their form and high level of performance, making them even more sustainable. Their life is very long compared to any other infill materials produced from virgin resources.

If agreed that it is positive for the environment to use low CO2, recycled and durable materials that provide safer, more cost-effective playing surfaces for all communities, rather than virgin resources that have a potential to expose players to harmful fertilisers, or drain diminishing water resources from other use. Perhaps, when realistically evaluated in terms of potential risks and benefits, these materials should not be banned. It should be more advisable to concentrate our efforts on how to avoid dispersion in the environment, and overcome the concerns raised.

3. Intentionally Added and Release to the Environment

It should be recalled that the Microplastic issue originated with the use (or abuse) of intentionally added microplastic to cosmetics and detergent to increase abrasive, exfoliating, cleaning properties of these products. The scope of these materials was / is to give specific properties to the products, and after having done this to be released into the environment, either down the drain, disposed in Municipal Waste or through direct release into the environment, as their scope is reached after an action (washing, rinsing, etc.)that entrain a deliberate released in the environment.

Recall that SBR infill materials **are not added** to a product to be released into the environment. Their function is satisfied if the rubber granulate remains in the pitch. If they are released into the environment, is by accident, and, potentially reduced. A number of very good potential solutions to reduce accidental dispersion have been submitted under this consultation and should be pursued.

It should be recalled that European Parliament and the EU Council reached an agreement to ban single-use plastic products. If this is the policy target, on which we agree, it should be noted that recycled infil materials are a materials for long lasting use. The life of the field is normally 12-15 years, but when the field is replaced with a new field the infill materials can be re-used for further 15 years.

There are many viable possibilities to effectively improve the'containments' or "borders" of artificial turf fields and to create further barriers to avoid dispersion of the material into the environment, as well described by organisations of the artificial turf sector.

The addition of small amounts of Infill materials during the life of a field is due to the compaction of the granulate during play, and does not correspond to an amount of rubber released into the environment.

4. Out of the scope - by analogy

According to the proposed restriction, paragraph 5.a. *"Substances or mixtures containing microplastic where the microplastic is both (i)* ***contained by technical means throughout the whole lifecycle to prevent releases to the environment*** *and (ii) any microplastic containing wastes arising are incinerated or disposed of as hazardous waste"* will not be subject to restriction.

We understand that this provision refers to a different case, however we wonder if this approach could be developed in an appropriate way, for artificial turf, because it would place them out of the scope of Microplastic Definition.

Artificial turf is a complex civil engineering structure that **"throughout its lifecycle contains"**, the infill material. As this aspect could be enforced by "technical means" and confined, it could be worth while to consider a similar derogation for SBR infill materials used in artificial pitches duly built (or improved) in order to prevent released to the environment. TheTyre Recycling sector and the Turf sector are willing to cooperate on this point.

5. Out of the scope – by quantity released

It should be noted that "*on the basis of information provided in the ECHA Call for evidence as well as literature review, the Dossier Submitter estimated that in 2017, more than 51 000 (11 000 - 63 000) tonnes of microplastics were used in the EEA. About 70% of these microplastics were subsequently emitted to the EEA environment"* (page 74 of the Report).These figures explain very well the microplstic issue and that the inclusion of infill materials in the scope has been forcing, probably due to an excess of concern.

The issue of Microplastics was raised owing to the impact of this logic: use of micro particles of polymer which purpose is to perform a function that requires a very high emission (70% of input materials) and release of such high processed output into the environment.

SBR infill materials used in the EU are much higher, estimated about 350.000 Tons per year, which purpose is to perform a function **without being released** into the environment. The estimated quantity released is very low : a percentage between a minimum of 0,0025% and a maximum of 0,036% of the input materials. The dispersion into the environment is incidental, not necessary to reach the scope of it use.

6. Microplastics released by virgin materials vs recycled materials

We noted that the Dossier Submitter is aware of the release into the environment of micropalstic produced by road tyre wear, which dispersion into surface water has been estimated by the Commission in 94 000 tons per year (page 10 of the Report).

Indeed the amount of microplastic annually produced by road tyre wear totally released into the environment (not just into surface water) are estimated in 355.000 tons (that corresponds to 11% of the weight of post consumertyres collected every year in europe).

Product	Material used (input)	Quantity used	Materials released	Quantity released	Percentage released
Average Microplastics	Virgin Polymers	> 51.000 Tons	Virgin microparticles	36.000 Tons	70%
New Tyres	Virgin Rubber	3.550.000 Tons	Virgin micoroparticles	355.000 Tons	10%
Infill materials	Recycled SBR	350.000 Tons	Recycled particles 1-2,5 mm	126 Tons	0,036%

It is surprisingthat these vast quantities of what are certainly microplastcs are not discussed further – and that the infill materials that are totally different in nature, with an underlying positive ecological value, are identified as potentially dangerous.

In fact 3.550.000 tons of new tyres are produced from virgin materials each year, equivalent to approximately 3.200.000 tons of post consumer tyres at their end-of-life, or± 355.000 tons lost due to wear.Tyres release about 10% of their weight into the environment as microplastics.

The 350.000 tons of SBRtyre rubber infill granulate used every year (see below point 10), are 100% obtained from recycling and the dispersion into the environment of particles that are not micro, is just incidental and very low, estimated between a minimum of 0,0025% and a maximum of 0,036% (see point 5 above).

These simple considerations give a clear description of the two situations and the magnitude of their impact on the environment - one negative the other positive.

7. Maintenance, use and how to prevent dispersion

The inclusion of SBR in the defintion of microplastics is also due to some cases of dispersion of rubber granulate from artificial turfs, consequent to maintenance operations, like :

- Snowplow operations on some artificial turfs, e.g., in Scandinvian countries, which could create some concern;
- Decompacting of infill material to level out the turf;
- Sweeping of the artificial turf to remove leaves and other dirt.

Occasionally, as a result of play on the turf, small amounts of granulate are tracked from the pitch on the players' socks or shoes. Training-education programs addressed to players could drastically reduce the quantity of rubber granulate incidentally taken out of the field with the shoes. A few, easy behaviours and actions, will reduce dispersion increasing respect for the environment. It is our understanding that Turf organisations and Sport Associations are ready to cooperate, as described in some responses already submitted.

8. Adequatelly controlled

As specified in the Restriction Report (page 84) *"The proposed restriction aims to address the risks from microplastics in **certain products that are not adequately controlled**. This proposed restriction entails a ban on all microplastics that meet the definition proposed (unless their specific use is derogated from the ban). The ban on use will enter into force at different times for different uses depending on the transition period assessed as necessary to avoid disproportionate socio-economic impacts (see Annex D)."*

Artificial Pitches are civil engineering structures that **are adequatelly controlled,** managed and maintained. According to the outcome of this consultation and the work in progress with the associations that work with

Artificial Turf producers, Installers and Managers, it will be possible to adopt improved management protocols and rules to prevent emissions of SBR granulate in the environment.

9.Labelling

Considering that the Dossier Submitter is proposing "a **labelling requirement** to minimise releases to the environment for uses of microplastics where they are not inevitably released to the environment but where residual releases could occur if they are not used or disposed of appropriately" (page 11 of the Restriction Report), we could consider a similar approach for SBR infill materials and include a label and / or instruction document to be supplied together with the materials to inform the end users about the correct handling of the rubber granulate incidentally captured by the shoes or the socks of players and than carried around and dispersed.

10. Tyre Recycling and the Circular Economy - Socio Economic Impact

Recycled Tyre Materials (RTMs) contribute effectively to implement Circular Economy EU policy.

The Sport sector and artificial turf represent a sustainable outlet and a fundamental market for the sector.

Approximately 3.200.000 tonnes of post-consumer tyres are collected each year in the 28 EU Member States and Norway. Of the total,± 39% undergo some form of material recycling, *(tyres that are processed for energy recovery are not included* .

The total quantity of granulate produced per year is ± 640.000 tonnes. Until recently, more than 50% of the granulate produced was used in some aspect of the sport sector, corresponding to ±350,000 tonnes, including artificial turf, running tracks, horse tracks, gym and indoor facilities, school sports facilities, among others.

Sport and play surfaces include among others, hockey and soccer pitches, running tracks, tennis courts, artificial turf, turf dressings, putting greens,equestrian areas and children's playgrounds. Among the key requirements for use in these structures are colour, compressibility, durability, elasticity, free drainage, impact attenuation, low moisture content, porosity, as well as size and particle distribution. The use of granulate improves safety and absorbs the energy from impact. It reduces player fatigue, the severity of injuries during play and improves game response.

It is estimated that over 5,000,000 square metres of sports fields were built during the last five years in the EU alone, each of which can utilise approximately 14-15kg/m^2 of granulate as infill and/or top cover. In many states, legislation requires that primary school and municipal playgrounds are paved with shock absorbing materials, initiating a trend for using these surfaces at the more than 150,000 primary schools in the EU. Further, recent UN and EU legislation have provided funds for the construction of fields for young and old in urban, rural and even isolated areas throughout the world.

It is important to note that the predominance of RTMs for sport surfaces have had a major impact on the reduction of serious injuries to players since they were first used. Over time, questions have been raised about the potential impact to human health and the environment due to the materials.

Sports fields can be installed in a variety of ways i.e., with a solid surface, with a grass-like carpet, as artificial turf or with a loose unbound surface. The base can be constructed on gravel with 100% rubber infill, on a gravel base with a sand/rubber mix-infill, or on an elastic layer with a sand/mix infill.For solid surfaces, the materials are commonly bound with moisture curing polyurethane material or a polymer modified bitumen. Different size granulate is required for each part of the structure and depends upon the ultimate performance criteria of the surface. At times, shred is used as light weight under-fill. The surface materials can be wet or dry mixed, in situ or prefabricated into tiles or sheets of varying thickness and design to meet the requirements of the particular sport.

Infill materials for artificial turf were developed by companies of the tyrerecycling sector. The benefit for the environment, in terms of recycling or CO2 savings, are enormous Itis important to consider all of the

environmental aspects related to using recycled materials to infill artificial turf, and include in the balance allof the advantages and compare them with the disadvantages.

There is not today any alternative materials that has the same performance, lower price, availability according to market demand.

Bio-polymers or biodegradable polymers are a dream for this use, because they do not respond to the scope as it is not possible to use a biodegradable polymer to make coronary by-pass and it make no sense to use biodegradable polymer for uses that are demanded to be durable with stable performance.

Natural grasses, can no longer endure many hours of intensive use every day, of more and more players, over different seasons, latitudes and climates conditions.

A ban of recycled SBR infill materials would collapse tyre recycling sector with minor benefit for microplastic prevention and major drawback for the environment.

Conclusions

Definitions	**Restriction Report**	**Infill materials discrepancies**
Sizes	1 nm ≤ x ≤ 5mm	1 mm ≤ x ≤ 2,5 mm
Microscopic	Yes	No
Transfer within food chain	Potentially possible	Improbable
Resistant to environmental biodegradation	Relevant	Not relevant as they are confined in the pitch
Biodegrade by fragmentation	Theoretically via nanoplastics	SBR granulate does not fragment
Intentionally added	Yes	No
Single-use plastic product	Yes, there are10 products to ban	No, infill is used 2500 hours / year per 15 years, and can be re-used a second cycle of 15 years
Pathway into the environment	DTD, MSW, DRE (*)	Incidental and could be prevented
Quantity released	From 10% to 70%	Max 0,036%
Source	Normally from virgin materials	100% recycled
Adequatelly controlled	No	Yes
Labelling requirement	Availabe option	Could be adopted
Restriction to placing on the market	For uses that inevitably release to the environment	Not this case

(*)
DTD: Down-the-drain
MSW: Municipal solid waste
DRE: Direct Release to the environment

There appear to be quite a number of misleading similiarities and discrepancies that would suggest further and deeper reflections to reconsider the inclusion of recycled infill materials in the microplastic restriction and should be derogated.

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