


Substance: Rubber granules
EC number: -
CAS number: -


Call for Evidence
from **09/11/2016** to **09/01/2017**

Answers to Call for Evidence specific information requests (industry replies only)

Specific information requests:

- 1.** Do you have any comments on the information presented in the background document?
- 2.** Do you know who are the importers of rubber granules (finished or semi-finished) in your country or other European countries and how many tonnes (metric tons) of rubber granules are imported every year? For which uses?
- 3.** If you are an importer, which type of rubber granules do you import in Europe, under which trade classification codes (e.g. HS)? How many tonnes (metric tons) do you import for application as infill material in synthetic turfs? Do you know the origin of the imported rubber granules (e.g. recycled tyres, recycled other rubber, mixtures of recycled tyres and other rubber)?
- 4.** If you are an importer or a manufacturer of rubber granules, how often you test the chemical composition of rubber granules? Could you please share this information with us. Please indicate whether the laboratory who did the analysis was accredited for the specific tests.
- 5.** If you are a sport association or an independent research group (e.g. university, institute, NGO, etc.) having analysed samples of rubber granules from sport fields (synthetic turfs), can you share with us the test results of the chemical analysis? Please indicate whether the laboratory who did the analysis was accredited for the specific tests and provide us any other relevant information related to the samples and analysis (e.g. type of rubber granules analysed, test methods)
- 6.** Please share any relevant information you have (e.g. on the chemical composition of recycled rubber granules and the effect of aging or weathering to the infill in the synthetic turfs, on the composition of the carbon black and its PAHs content in relation to the country of origin of the supplier, recent studies on the possible risks to human health published in 2016 or ongoing, etc.).

Ref.	Date/type/Org.	Answers to specific info requests
284	Date: 2016/12/22 15:40 Type: BehalfOfAnOrganisation Org. type: Company Org. name: Ragn-Sells AB Org. country: Sweden Attachment:  ref_284.docx	General comments: Legislation: Waste or product? It is important to get consensus in EU on how granules from used tires should be classified, i.e. if the granules are sold as a waste or as a product. Hence, so we have the same conditions and demands from legislation (waste legislation vs REACH). Today, e.g. granules sold in Sweden and France, are classified as a waste while several other countries claim that they are selling a product. However, there is uncertainty about this since the countries reporting that they are selling a product is really selling a waste, i.e the granules have not cease to be a waste and has not been registered in REACH alternative have not used the exemption for registration in REACH (2.7d). Because the chemicals legislation applies only to products and not waste this issue is important to clarify so that the majority of the granules that are set out on the European market are classified as waste (but "called" product by the manufactures) and really prevails under the waste legislation (and in the legal sense would not be influenced by a new restriction under REACH for PAH in granules from used tires for artificial turf). PAH analysis: levels and methods of analysis Ragn-Sells has analysed PAHes in the different fractions of tires (see enclosed file for a brief summary of the study and results). Our main conclusions are as follows: - Tires manufactured after 2011 contain significantly lower levels of PAHs (of the 8 available in limited restriction 50 of REACH) - It's not a significant difference in PAH content between tires manufactured in the EU and outside the EU (imported tires). - The method of analysis and its sensitivity varies significantly, even when the analysis was performed by the same laboratory in the same sample at two different occasions.
		Answer to specific info request 4: Samples are taken each mounth. These are then analyses once each year in an aggregated sample. The analysis is made by Eurofines. However, the analysis of PAHes has been problematic (see enclosed file)
		Answer to specific info request 5: see enclosed file

287	<p>Date: 2017/01/09 18:23</p> <p>Type: BehalfOfAnOrganisation</p> <p>Org. type: Industry or trade association</p> <p>Org. name: International Carbon Black Association (ICBA)</p> <p>Org. country: United States</p> <p>Attachment:</p> <div data-bbox="383 751 450 810"></div> <p>ref_287.pdf</p>	<p>General comments:</p> <p>The number of characters exceeds the Limit of 9000, therefore please consider our comments provided in attached PDF-document: "ECHA Synthetic Turf - Call for Evidence - 9 Jan 2017 - Final ICBA-EPSRC Comments"</p>
288	<p>Date: 2017/01/09 20:03</p> <p>Type: BehalfOfAnOrganisation</p> <p>Org. type: Company</p> <p>Org. name: Celanese</p> <p>Org. country: Germany</p> <p>Attachment:</p>	<p>General comments:</p> <p>Appropriateness and Efficiency of a Proposed Measure</p> <p>The Background document clearly indicates that different materials from different sources may form the basis for manufacture of recycled rubber granules (crumb rubber) (Section 2 "the most commonly used elastomeric infill material in sports fields is end-of-life tyres rubber which is styrene-butadiene rubber (SBR). The origin of the styrene butadiene rubber can also be from other rubber materials than tyres.")</p> <p>The Background document further states that "In some countries rubber granules from end-of-life tyres (ELT) is used in over 95 % of all fields, e.g. in UK, Ireland and France." This percentage can be regarded as the worst case scenario in which a risk exists that PAHs (Polycyclic Aromatic Hydrocarbons) and other hazardous substances from recycled materials are being transferred onto sports fields in the crumb rubber and any player on such field is exposed via the oral, dermal, or inhalation route or a combination.</p> <p>If an Annex XV dossier is prepared and a restriction implemented, the most efficient approach would be to introduce a restriction which is not linked to the source of the material, but to focus on</p>



the substances present in the final product to which consumers are exposed (e.g. on playgrounds and sportsgrounds). This would avoid exposure of the general population to PAHs (Polycyclic Aromatic Hydrocarbons) and other hazardous substances in concentrations above levels acceptable for human health, irrespective of the origin of the starting material (tyres or other rubber materials).

Available Alternatives

PAH-free alternatives like virgin thermoplastic elastomer granules or natural materials (e.g. cork) are available on the market. Italy-based company SO.F.TER. is a global leader in the field of Thermoplastic Elastomer (TPE) granules for the infill of artificial turf. (http://www.softergroup.com/en/artificial_turf_infill; <http://www.tpeinfill.com/>). PAH-free infill product made from virgin raw materials is manufactured on industrial scale and represents a sustainable substitution of crumb rubber.

Precautionary Principle Considerations and Illustrative Examples

The Dutch RIVM (RIVM 2016) states in a recently published report that "Rubber granulate is required to satisfy the legal requirements for 'mixtures'. [...] The standard for consumer products is far more stringent: it allows far lower quantities of PAHs (100 to 1000 times lower) compared with the standard for mixtures." RIVM "recommends adjusting the standard for rubber granulate to one that is closer to the standard applicable to consumer products".

In this context, Celanese would like to emphasize that allowed PAH concentrations for articles and mixtures are regulated differently in REACH Annex XVII. Since crumb rubber's properties and possible health effects are independent of its categorization as mixture or article, this could be regarded as a contradiction to REACH Article 1 which states that the regulation's "provisions are underpinned by the precautionary principle". Applying the precautionary principle seems to be especially important when sensitive populations are definitely going to be exposed to the material.

* Mixtures are governed by the requirements laid out in Annex XVII (28). Substances classified as Carcinogen category 1A or 1B shall not be used for supply to the general public if the specified concentration limits are exceeded.

* Articles containing eight specific PAHs (all classified as carc. 1B) are governed by REACH Annex XVII (50) which establishes the maximum concentration for these PAHs as 1 mg/kg for articles intended for use by the general public (Column 2, No. 5) and 0.5 mg/kg for toys and childcare products (Column 2, No. 6).

* Annex XVII (50) governing articles contains grandfathering provisions which are not included in (28) governing mixtures. Mixtures exceeding a certain concentration of PAHs could thus not be placed on the market, while the same material when categorized as an article could still be supplied for use by the general public.

		<p>As illustrative examples (cited publications and assessments derived from published values submitted as attachments):</p> <p>* Llompart et al. (2013) analyzed an average concentration of 2,23 µg/g of Benzo[a]pyrene (B[a]P) in samples from playgrounds using recycled tyres. Other PAHs were also identified in the same samples. A concentration of 2,23 µg/g B[a]P would not allow an article to be used by the general public acc. to REACH Annex XVII (50) (grandfathering provisions not considered). When applying the criteria given in Annex XVII (28), such materials could still be supplied to the general public as the individual PAH concentrations do not exceed the CLP concentration limits of 100 ppm or 1.000 ppm. (Llompart et al 2013 PAH concentrations.pdf)</p> <p>* Marsili et al. (2014) analyzed PAH contents of nine different synthetic turfs from football fields in Tuscany and Lazio (Italy). Due to the Benzo(b)fluoranthene concentrations measured between 1,15 and 15,72 µg/g, a restriction acc. to REACH Annex XVII (50) would be applicable for all samples. Also in this example, applying the criteria given in Annex XVII (28), the materials could still be supplied to the general public as the individual PAH concentrations do not exceed the CLP concentration limits. (Marsili et al 2014 PAH concentrations.pdf)</p> <p>Considerations on Waste Status</p> <p>As a secondary aspect to the discussion, with regards to rubber granules from end-of-life tyres (ELT) which are used in over 95 % of all fields in some countries (Background document): It could be relevant to specify for ELT at which stage they cease to be waste in order to ensure that REACH requirements do in fact apply to recycled rubber granules (crumb rubber).</p> <p>ECHA's "Guidance on waste and recovered substances Version 2 – May 2010" states that "As soon as a material 'ceases to be waste', REACH requirements apply in principle in the same way as to any other material, with a number of exceptions granted conditionally. The point at which waste 'ceases to be waste' has been the subject of long debates."</p> <p>The Waste Framework Directive (Directive 2008/98/EC) states in Article 6 that "End-of-waste specific criteria should be considered, among others, at least for aggregates, paper, glass, metal, tyres and textiles." Such End-of-waste criteria have not been laid down for tyres yet. (http://ec.europa.eu/environment/waste/framework/end_of_waste.htm, Last updated: 09/06/2016)</p> <p>If crumb rubber from ELT were to be considered as waste it would not fall under the scope of the REACH regulation and would thus not be covered by any restriction. Concerns that use of crumb rubber as infill in synthetic turf may pose risks to human health that are not adequately controlled would not be addressed by treating the materials from which the granules in the infill application are produced as waste.</p>
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		<p>Answer to specific info request 1:</p> <p>Appropriateness and Efficiency of a Proposed Measure</p> <p>The Background document clearly indicates that different materials from different sources may form the basis for manufacture of recycled rubber granules (crumb rubber) (Section 2 "the most commonly used elastomeric infill material in sports fields is end-of-life tyres rubber which is styrene-butadiene rubber (SBR). The origin of the styrene butadiene rubber can also be from other rubber materials than tyres.")</p> <p>The Background document further states that "In some countries rubber granules from end-of-life tyres (ELT) is used in over 95 % of all fields, e.g. in UK, Ireland and France." This percentage can be regarded as the worst case scenario in which a risk exists that PAHs (Polycyclic Aromatic Hydrocarbons) and other hazardous substances from recycled materials are being transferred onto sports fields in the crumb rubber and any player on such field is exposed via the oral, dermal, or inhalation route or a combination.</p> <p>If an Annex XV dossier is prepared and a restriction implemented, the most efficient approach would be to introduce a restriction which is not linked to the source of the material, but to focus on the substances present in the final product to which consumers are exposed (e.g. on playgrounds and sportsgrounds). This would avoid exposure of the general population to PAHs (Polycyclic Aromatic Hydrocarbons) and other hazardous substances in concentrations above levels acceptable for human health, irrespective of the origin of the starting material (tyres or other rubber materials).</p> <p>Available Alternatives</p> <p>PAH-free alternatives like virgin thermoplastic elastomer granules or natural materials (e.g. cork) are available on the market. Italy-based company SO.F.TER. is a global leader in the field of Thermoplastic Elastomer (TPE) granules for the infill of artificial turf. (http://www.softergroup.com/en/artificial_turf_infill ; http://www.tpeinfill.com/). PAH-free infill</p>

		<p>product made from virgin raw materials is manufactured on industrial scale and represents a sustainable substitution of crumb rubber.</p> <p>Answer to specific info request 6: Several Dutch communities published analytical results on the internet. The following documents are submitted in the call for evidence: Gemeente Woerden: Document "onderzoeksrapport sgs nederland a890540-bu20161368-uho-woerden-signed.pdf", issued by SGS, 11.11.2016, published on https://www.woerden.nl/sites/default/files/onderzoeksrapport%20sgs%20nederland%20a890540-bu20161368-uho-woerden-signed.pdf Stichting Omroep Maasland: Document "Onderzoek_Studio040_kunstgras TUV Rheinland.pdf", issued by TÜV Rheinland, 18.10.2016, published on http://www.studio040.nl/tl_files/studio040/content/Onderzoek_Studio040_kunstgras.pdf Gemeente Valkenswaard: Document "Toxicologische evaluatie rubbergranulaat_Gemeente Valkenswaard.pdf", issued by Key Toxicology, 16 November 2016, published on http://www.valkenswaard.nl/document.php?m=43&fileid=874594&f=f5bb5d0d32866db73e9b2107caa87015&attachment=0&c=60955 Gemeente Valkenswaard: Document "114734-124433 bijlage 2 Valkenswaard.pdf", issued by TÜV Rheinland, 3.11.2016, published on http://www.valkenswaard.nl/document.php?m=43&fileid=874591&f=c3d34e2f229da4aae35efa77ca9f92f4&attachment=0&c=60955</p> <p>In addition, a multitude of publications and individual assessments is available. The following publications contain information on composition of crumb rubber and will be submitted as separate attachments: Llompart et al. (2013): "Hazardous organic chemicals in rubber recycled tire playgrounds and pavers" Maria Llompart et al., Chemosphere 90 (2013) 423–431 Marsili et al. (2014): "Release of Polycyclic Aromatic Hydrocarbons and Heavy Metals from Rubber Crumb in Synthetic Turf Fields: Preliminary Hazard Assessment for Athletes " Letizia Marsili et al., J Environ Anal Toxicol 2014, 5:2 RIVM (2016): "Beoordeling gezondheidsrisico's door sporten op kunstgrasvelden met rubbergranulaat" RIVM Rapport 2016-0202, published 20.12.2016 at http://www.rivm.nl/Documenten_en_publicaties/Wetenschappelijk/Rapporten/2016/december/Beoordeling_gezondheidsrisico's_door_sporten_op_kunstgrasvelden_met_rubbergranulaat US EPA (2016): "Federal Research Action Plan on Recycled Tire Crumb Used on Playing Fields and Playgrounds STATUS REPORT" EPA/600/R-16/364 ; December 2016; www.epa.gov Three US federal agencies have released a status update on their ongoing effort to evaluate the</p>
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		safety of recycled tyre crumb used in athletic fields and playgrounds. The report includes the final appraisal of peer-reviewed literature and data gaps analysis report, Appendix B contains a "State-of-the-Science Literature Review/Gaps Analysis".
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