

Nonwoven industry's response to the Eunomia study on the plastics definition under the Directive (EU) on the reduction of the impact of certain plastic products on the environment

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EDANA, the voice of the nonwovens and related industries fully supports EU's Plastic Strategy aiming to reduce the plastic waste and increase the recycling rate of plastics. In particular, EDANA welcomes the Directive (EU) on the reduction of the impact of certain plastic products on the environment (*hereinafter referred to as SUP Directive*) and supports the efforts for its successful implementation at national level.

To further clarify whether a product is to be considered a single-use plastic product for the purposes of the SUP Directive, the European Commission's DG ENV is currently working on guidelines on single use plastic products. This document will be published by 3 July 2020.

In order to contribute Industry expertise (both technical and market-related) to better reflect the reality of the marketplace, EDANA has contributed at every stage of the formal consultation process and has participated in every Commission workshop on this matter.

Man-made cellulose fibres (MMCF) lyocell and viscose are not plastic materials

Current European legislation as well as technical expertise conclude that lyocell and viscose are not chemically modified natural polymers and as such should be excluded from the definition of plastics. Furthermore, there have been multiple independent studies done by scientific experts to demonstrate lyocell and viscose's biodegradability and flushability properties in several environments and demonstrating that they are more sustainable than fossil-based plastic fibres (references listed below).

EDANA has read with concern the claims made in the study "What is Plastic?" published by Eunomia on January 21st 2020. **EDANA finds it unfortunate that the authors of the report have overlooked multiple independent scientific studies which demonstrate the sustainability attributes that Lyocell and Viscose can bring to everyday products.**

Below we wish to point to key arguments and studies regarding the structure of viscose and lyocell and the biodegradability and flushability of those materials– which provide compelling counter arguments to those stated in the study.

Viscose and lyocell have the same chemical structure as cellulose and are not chemically modified

In the literature, the terms 'regenerated cellulose fibres' and 'man-made cellulose fibres (MMCF)' are used for wood-based cellulose fibres viscose and lyocell. Cellulose-based fibres are divided into 2 categories: (a) Natural cellulose fibres e.g. cotton and bast fibres and (b) Man-made cellulose fibres viscose and lyocell (wood based cellulose fibres).

Viscose and lyocell are made of wood pulp (thus from a renewable resource). The cellulose obtained from wood consists of the same natural polymer found in natural cellulose (cotton). Viscose and lyocell are not synthetic fibres (the raw material for synthetic fibres derives from crude oil).

The production process starts from the renewable raw material wood. In the first step, pulp is produced in a process very similar to paper pulp making. Following, this pulp is dissolved either by derivatization (viscose) or by direct physical dissolution (lyocell).

The lyocell process does not use a chemical process at all. It is a physical process and lyocell fibres are pure cellulose fibres without any chemical modification involved. This process is clearly described by Antje Potthast and Herbert Sixta (2019).

Viscose fibres are produced through a chemical process via a derivative. The resulting viscose fibres are also pure cellulose fibres without any chemical modification.

Lyocell and Viscose wipes biodegrade in sewage systems and marine conditions

Viscose and lyocell have the same chemical structure as the natural cellulose such as cotton. It is known that cellulose in both natural and regenerated cellulose is degradable by the same enzyme systems of microorganisms (Bechthold and Schimper, 2010).

Biodegradation of materials made of MMCF's (viscose and lyocell) materials was shown for example in waste water treatment plants (Park 2004), anaerobic digestors (Jeihanipour 2013), soil (Park 2004), composting (Schneider 1999), land fill (Smith 1990), freshwater (Zambrano 2018), sea water (Andrady 1992).

Recent study of the UC San Diego, Scripps Institution of Oceanography shows all cellulosic nonwoven fabrics made of viscose, lyocell, wood pulp and natural fibre cotton fully degrade after 35 days in marine water under real conditions. There are no differences between the degradation of cotton, wood pulp, viscose and lyocell (Sara-Jeanne Royer & Dimitri Deheyn 2019).

Flushable wipes, containing viscose or lyocell are not blocking sewage infrastructure

Flushable moist toilet tissues typically consist of a blend of viscose with short cut length (≤ 12 mm) or lyocell with short cut length (≤ 12 mm) and wood pulp manufactured. These tissues are designed according to strict criteria in order to avoid blocking sewages. Non-flushable wipes mainly consist of polyester fibres with higher fibre cut length (30 – 60 mm) and manufactured with different nonwoven production technologies to provide high fabrics strength for consumer use.

A sewage audit, performed by Water UK in 2017, revealed that sewage blockages were mainly due to non-flushable wipes that had been improperly flushed. Incorrect consumer habits seem to be the main bottleneck to ensure a proper use of wipes. This is the issue which needs attention.

Therefore, the correct labelling of the non-flushable wipes is clearly important. The legislators have chosen to follow the path of the industry and to legislate the current voluntary labelling code of practice. While awaiting the implementation of the labelling requirements in the SUP Directive, **the industry further labels non-flushable wipes with the following pictograms:**



Additional information and awareness campaigns targeting consumers will increase proper behaviour and therefore reduce the environmental problems related to wipes.

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