



Development of Combined Nomenclature codes within plastics area

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Agreement: NV 240-21-403

Commissioned by the Swedish Environmental Protection Agency

Published at: www.smed.se

Publisher: Swedish Meteorological and Hydrological Institute

Address: SE-601 76 Norrköping, Sweden

Start year: 2006

ISSN: 1653-8102

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Acknowledgements

The authors would like to thank Anna Quakkelaar (Swedish Customs) for her expertise, reviews and feedback provided to this report.

Sammanfattning

För att kunna klassificera produkter och material som man vill kartlägga eller nå med styrmedel så behöver de på något sätt definieras. En nomenklatur som finns är den kombinerade nomenklaturen (KN), vilken används av företag i EU:s samtliga medlemsländer för att deklarerat produkter vid import och export. KN-nummer har en detaljnivå på högst 8 siffror och bygger på Harmonized System (HS), som utarbetas av World Customs Organization (WCO), och används för att beskriva utrikeshandelsstatistik i flera länder även utanför Europa.

Syftet med detta projekt var att skapa en målbild, där kartläggningen av plastprodukter blir som enklast och tydligast, samt identifiera vilka KN-koder som behöver utvecklas för att ge myndigheter och andra aktörer bättre möjlighet att kontinuerligt kunna kartlägga plastflöden och se förändringar över tid. Slutligen skulle projektet även ta fram förändringsförslag för ett urval av KN-koder samt påbörja processen med att förankra dessa med relevanta nordiska och europeiska parter till HS-kommittén för att möjliggöra bättre kartläggning av plastprodukter i Sverige och EU. Processen att förändra KN-koder har dokumenterats i ett separat PM för att bevara kunskap och erfarenheter inför arbete med framtagning av framtida förändringsförslag.

Projektet resulterade i sex typer av förändringsförslag som berör Flexible Intermediate Bulk Containers (FIBC), byggsektorn, rör och slangar för olika bruk, expanderbar polystyren (EPS), sport- och fritidsartiklar samt engångsplast. Förändringsförslagen är framtagna inom SMED tillsammans med Tullverket och Naturvårdsverket och är utformade för att urskilja, inom projektet, prioriterade produkter av plast. Förslagen är klara för att skickas till HS-kommittén för överläggning.

Summary

SMED is short for Swedish Environmental Emissions Data, which is a collaboration between IVL Swedish Environmental Research Institute, SCB Statistics Sweden, SLU Swedish University of Agricultural Sciences, and SMHI Swedish Meteorological and Hydrological Institute.

In order to be able to classify products and materials that you want to map or affect using policy instruments, they need to be clearly defined. The Combined Nomenclature (CN) is used by companies in all EU Member States to declare products for import and export. The CN code has an eight-digit level of detail and is based on the Harmonized System (HS) which is designed by the World Customs Organization (WCO) and used to describe trade statistics in several countries within and outside Europe.

The purpose of this project was to create a desired structure, where the mapping of plastic products becomes as simple and clear as possible and then identify which CN codes need to be improved to give authorities and other actors a better opportunity to continuously map plastic flows and see changes over time. Lastly, the project would produce suggested changes and include these with relevant Nordic and European parties before submitting them to the HS-Committee in order to enable better mapping of plastic products in Sweden and the EU. The process of changing CN codes has been documented in a separate memorandum to preserve knowledge and experience for future proposed changes.

The project resulted in six types of suggested changes that affect Flexible Intermediate Bulk Container (FIBC), insulation, seals, moldings, and roofing sheets for building and construction, tubes, pipes, and hoses for various usages, products made of expanded polystyrene (EPS) and extruded polystyrene foam (XPS), equipment for sports, physical exercise, and leisure, and lastly Single-Use plastics. The changes have been developed together with Statistics Sweden, the Swedish Customs and the Swedish Environmental Protection Agency and are designed to distinguish products made of plastic prioritized by the project. The proposals are ready to be sent to the HS Committee for deliberation.

Keywords: Combined Nomenclature, Plastics, Recycling, Closed loops, Declaration, Traceability, Statistics

Introduction

On behalf of Swedish EPA, SMED has conducted a survey on possible changes of the combined nomenclature (CN) with the purpose to strategically improve traceability and transparency regarding the cross-border flows of plastic products. This work has resulted in a draft proposal of several changes of the 8-number level of the nomenclature. The draft proposal may be used to start the actor dialogue on the possible changes and invite feedback on this draft.

The survey focused on issues strategic in plastic product management; the big flow of plastics in the building sector, the 'hidden' plastic products in the categories for sports- and leisure products and to reveal the opportunities of more sustainable product design and circular business models within plastic packages.

Improved traceability of plastic products is needed for various reasons. The survey identified four main reasons. First, there is the need to develop the statistic support, for both manufacturers and state agencies, regarding the cross-border flows of plastics in general to better estimate the volumes of these flows and analyze changes which may depend on changes in industry practice and/or policies. Second, there is the need to better know the volumes of specific types of plastics so that the recycling industry get incentive for investment in a larger recycling capacity. Third, there is the need to facilitate manufacturers and the import-export actors to register key products of large volumes in clear CN categories to facilitate the industry to identify reuse opportunities and build future circular business models for high value material management and learn how to reduce the environmental footprint of plastic products. Lastly, there is the need to feed back to policy on key issues like single use plastic products which risk to pollute our nature and seas.

These needs can be translated into four different kinds of changes in the CN 8 level:

1. separate products of plastic in categories for mixed material,
2. separate specific types of plastic in categories for plastic products,
3. further separate products into more specific categories, or
4. separate plastic products for single use.

The draft proposal therefore list changes of the CN 8 number level of several categories in the chapter 39, as well as within other chapters.

The survey resulted in six suggested changes to the CN, affecting the following group of products:

- Flexible Intermediate Bulk Container (FIBC).
- Insulation, seals, moldings, and roofing sheets for building and construction.
- Tubes, pipes, and hoses.
- Products made of expanded polystyrene (EPS) and extruded polystyrene foam (XPS).
- Equipment for sports, physical exercise, and leisure.
- Single-Use plastics.

The suggested changes are presented separately in the following chapters in no order of priority and should be considered as stand alone.

Quakkelaar, A (2021). Personal communication and expert input from Anna Quakkelaar, Swedish Customs.

Flexible Intermediate Bulk Containers

On behalf of the Swedish EPA, we suggest a change of the combined nomenclature (CN) with the purpose of clarifying the declaration of Flexible Intermediate Bulk Container (FIBC) 'Big bags', as well as separating containers made of polyethylene (PE) and polypropylene (PP).

Suggested change

Current CN		New Codes	
6305 32 19	<i>Sacks and bags, of a kind used for the packing of goods. Flexible intermediate bulk containers, for the packing of goods, of polyethylene or polypropylene strip or the like (excl. knitted or crocheted)</i>	6305 32 20	<i>Flexible intermediate bulk containers (FIBC) of polyethylene</i>
		6305 32 21	<i>Flexible intermediate bulk containers FIBC) of polypropylene</i>
Clarifications:			
<p>The change results in the following new CN codes:</p> <p>6305 32 20 ---- Other of polyethylene</p> <p>6305 32 21 ---- Other of polypropylene</p> <p>The following CN codes are suggested to be removed:</p> <p>6305 32 19</p>			
Proposal for explanatory notes:			
Flexible Intermediate Bulk Container (FIBC) 'Big bags' of various sizes.			

Reason for proposed change

FIBC is an industrial intermediate container that is used for transporting various products such as sand, fertilizers, waste, plastics among others. The product has been used for storage, logistics and transportation purposes since the 1940s and is usually made of PE or PP. The products are commonly used all over Europe within several industries such as food, agricultural, wool, building and construction, and others. The products have large trading volumes and may be reused several times before disposal.

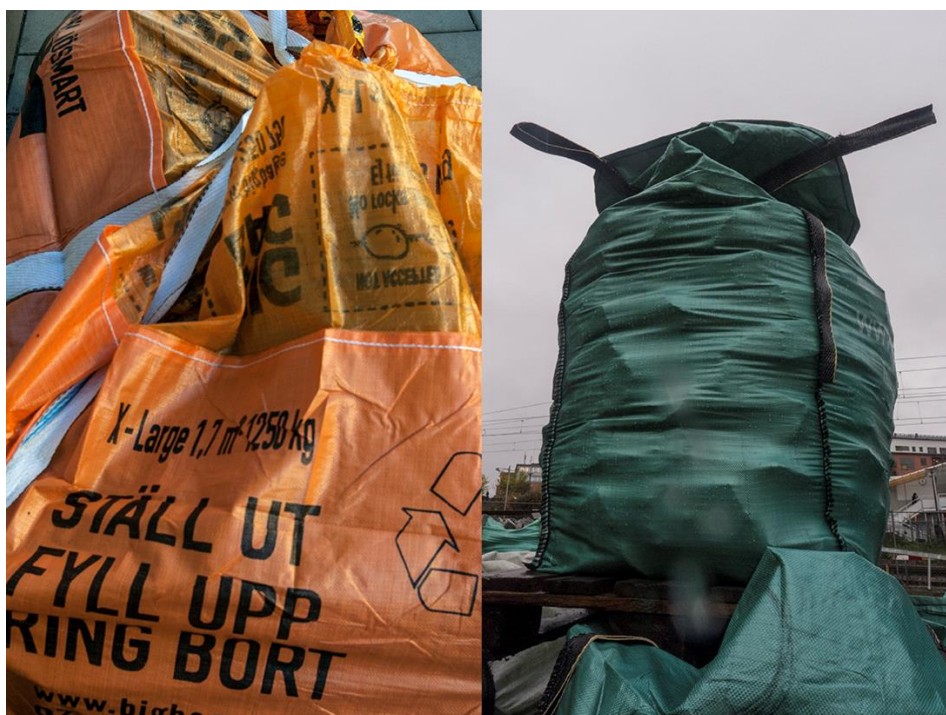


Figure 1. Example of products mentioned in this suggested change¹

FIBC made of PE and PP are important to separate clearly on material type basis within CN due to their large trade volumes. Manufacturers would benefit by being able to identify, separate and measure specific products and material flows, both for general statistics purposes but also since there is a strong interest of constructing circular loops for these specific products and materials to reduce its environmental footprint. To achieve this, there is a need for an improved traceability and transparency regarding the specific trade volumes of the products and materials so that the recycling industry can identify secure investments in a specific plastic recycling capacity. The industry needs to be able to identify a continuous flow of these products, both of PP and PE, as a strong incentive for investment in a larger recycling

¹ Swedish Environmental Protection Agency, 2022

capacity. This may lead to an upgraded material recycling for the benefit of the society.

Practical Reasons and Declaration Issues

The existing CN codes above, depending on translations, suggest that other types of products than FIBC may be declared within each code. Therefore, the abbreviation FIBC should be included in the code description as well as a phrase including FIBC of various sizes. The codes should also be divided into two in order to separate bags made of PE or PP. The current description can make it difficult for companies, governments, and customs to understand the exact type of products declared in the CN. Companies within the FIBC industry strive for a clearer structure to understand their product flows in more detail, while governments and customs wants to be able to observe the effects of any applied policy instruments, regulations, or targeted changes for consumption behavior on a national or international level. Today, neither can be measured clearly for the products mentioned in this suggestion.

The suggestion of adding two new CN replacing the current code separates the product flows by polymer with a clarification gives companies an opportunity to declare with a clearer purpose allowing an enhanced traceability.

Trading Volumes

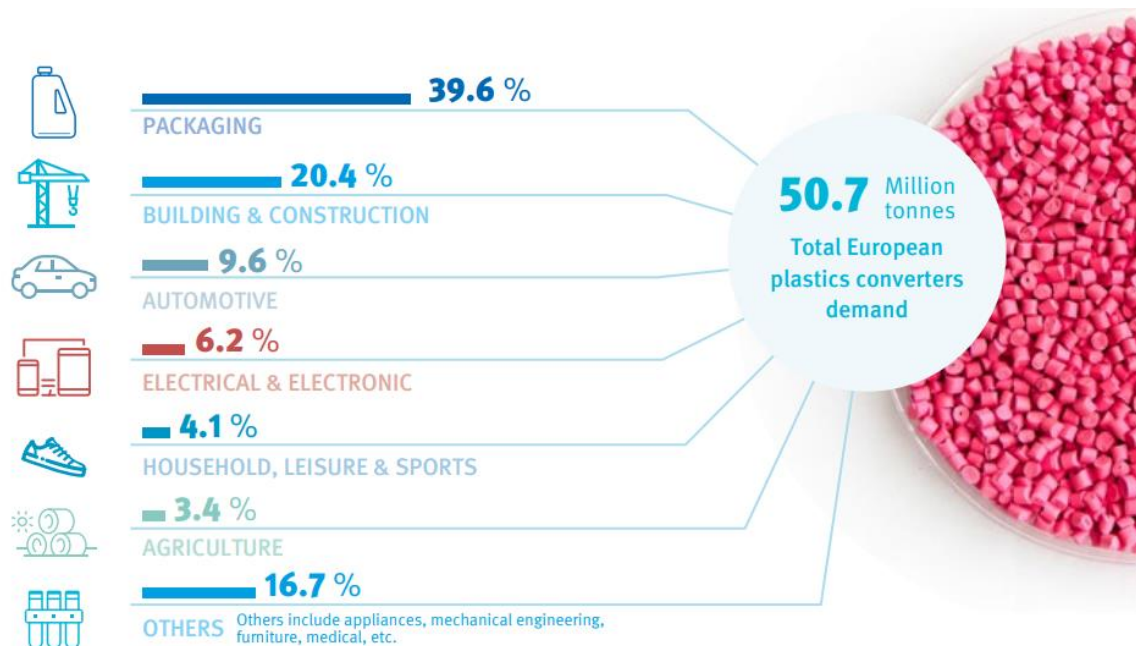


Figure 2. European plastic converters demand in 2019²

Plastics has been a continuously growing market since the early 1950s. In 2019, the world plastic production is estimated to a staggering 368 million tonnes where more than half of all plastics are produced in Asia and exported. The demand for plastics in Europe is over 50.7 million tonnes yearly and is mainly related to packaging as well as building & construction (see Figure 2 above). FIBC made of PP or PE which are explicitly mentioned by PlasticsEurope as commonly produced products by resin type which indicates large trade volumes each year (see Figure 3 below).

² PlasticsEurope, 2020

PLASTICS DEMAND DISTRIBUTION BY RESIN TYPE 2019

Data for EU28+NO/CH.

SOURCE: PlasticsEurope
Market Research Group
(PEMRG) and Conversio Market
& Strategy GmbH

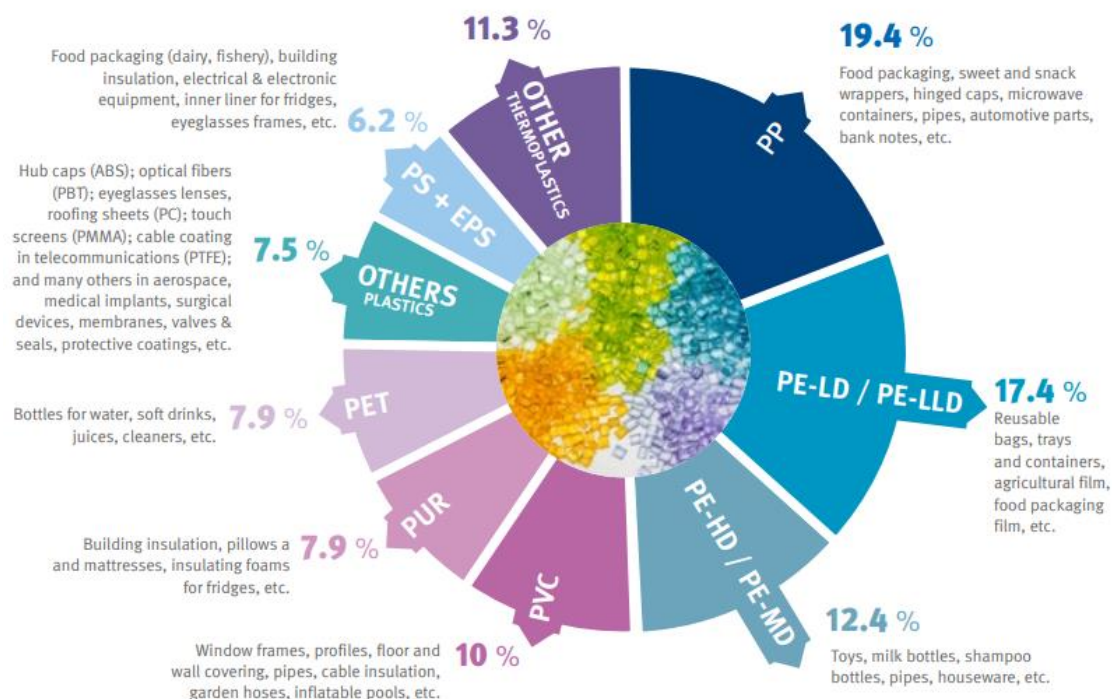


Figure 3. Plastics demand distribution by resin type 2019³

FIBC are well known, commonly used products within several industries and are manufactured by the millions each year estimated to reach up to 40 000 tonnes of FIBC's each year only in the Nordic countries. Eurostat data confirms that trade volumes for 2020 related to the existing CN code exceeds hundreds of million euro including import, export, and internal EU trade (see **Eurostat Trade Data** at the end of this document).

³ PlasticsEurope, 2020

PLASTICS DEMAND BY SEGMENT AND POLYMER TYPE IN 2019

Data for EU28+NO/CH.

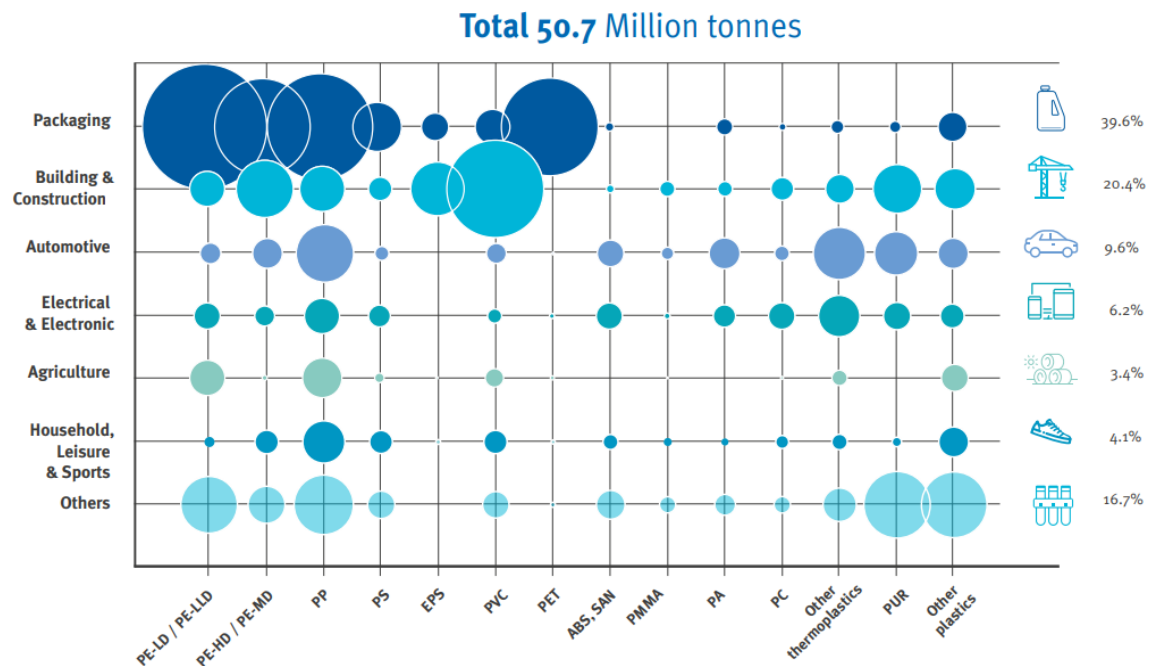


Figure 4. Plastics demand by segment and polymer type in 2019⁴

PE and PP are the largest polymers by demand both in the packing industry as well as building & construction (see Figure 4). Note that both these sectors represent more than half of all plastics demand in the world.

Sustainability

98% of all plastics made today are fossil-based, only 2% are made from biobased material. FIBC have generally a high durability but it differs depending on its application and type of goods that is transported. When worn out, the bags are commonly incinerated for energy recovery even though they can be targeted for material recycling.⁵ Many FIBC's are often technically simplistic and solely made of PP or PE which makes them recyclable, especially if collected separately. Theoretically, used FIBC's can be collected and mechanically recycled into new FIBC's if the recycled materials (rPP or rPE) fulfil specified quality requirements. One main challenge today, in the efforts of making the plastic value chains circular, is

⁴ PlasticsEurope, 2020

⁵ Bulkbagreclamation.com, 2021

the great mixture of various plastic materials resulting in low quality recycled plastic materials.

In order to increase the recycling capacity of these products, the recycling industry needs clear information regarding specific product flows since different products require different pre-efforts to fit a mechanical recycling line (i.e., washing, cutting, and sorting). The ideal recycling is often done in so called “closed loops” where a type of product is collected, recycled, and re-made into the same type of product. This type of circular flow often requires close collaboration with different stakeholders (manufactures, distributors, waste management companies, etc.) and often when this type of collaboration is discussed, measuring the product flow as a feedstock for the loop is an important component as this often decides if the efforts required in terms of logistics, recycling and similar.

Endorsements

Currently, a Vinnova⁶ funded project (d.no. 2020-04190) is ongoing *Close the loop of industrial plastic – stage 2*⁷, which is part of Vinnova’s three stage UDI program (challenge-driven innovation, in Swedish UtmaningsDriven Innovation⁸). The stage 1 project was initiated with the objective to develop a closed loop for industrial plastic bigbags (officially called FIBCs- flexible intermediate bulk containers). Main finding from the stage 1 project was that increasing circularity of FIBC’s (and any other industrial plastic packaging) is not possible without innovating the whole system for how industrial packaging is used in Sweden (to begin with). This includes existing policy and regulations, business models, as well as waste management and recycling infrastructure. Therefore, one key prerequisite to find possible ways of closing the loop for FIBC’s, is to enable quantifying of the actual amounts of bigbags and their materials (PP and PE), imported to the Swedish market annually. This to optimize and adapt recycling technologies for accurate up-scaling factors to meet the demand for FIBC’s plastic materials recycling.

As a project participant, the Swedish company Accon Greentech, has experienced the shortcomings in terms of the indistinct CN code incorporating FIBC’s described above. Despite Accon Greentech is a rather small actor compared to larger European companies, it nevertheless is

⁶ <https://www.vinnova.se/en/>

⁷ <https://www.ivl.se/english/ivl/project/closing-the-loop-of-industrial-plastic.html>

⁸ <https://www.vinnova.se/en/m/challenge-driven-innovation/>

important as a possible gamechanger to initiate the key prerequisites to facilitate and increase plastic recycling arising from the FIBC industry, hence closing this loop. By means of Accon Greentech's close contact and collaboration with the considerable larger European company GREIF, there is a well-established anchor point to the EFIBCA – European Flexible Bulk Container Association, which represents the interests of FIBC manufacturers, distributors and material suppliers.

Building and Construction

On behalf of Swedish EPA, we suggest a change of the combined nomenclature (CN) with the purpose of separating insulation, seals and moldings as well as roofing sheets of plastics made for the building and construction sector.

Suggested change

Current CN		New Codes	
3921 13	<i>Other plates, sheets, film, foil and strip, of polyurethanes</i>	3921 13 20	<i>Products of polyurethane (PUR) or polyisocyanurate (PIR), cut into squares or rectangles or foam for buildings and constructions used mainly for insulation purposes.</i>
3925 90	<i>Other Builders' ware of plastics, not elsewhere specified or included</i>	3925 90 30	<i>Profiles, seals and moldings of plastics for buildings and constructions.</i>
3925 90	<i>Other Builders' ware of plastics, not elsewhere specified or included</i>	3925 90 70	<i>Roofing sheets of plastics for buildings and constructions.</i>
Clarifications:			
The change results in the following new CN codes:			
3921 13 20			
3925 90 30			
3925 90 70			
Proposal for explanatory notes:			
-			

Reason for proposed change

Plastic products for construction purposes such as insulation, profiles, seals, moldings and plastic roofing are commonly used all over Europe for long term purposes in both small and large constructions. The products are large in volume but generally light in weight.

Products made for these purposes are important to be able to trace within CN due to their large trade volume. Manufacturers would benefit by being able to identify, separate and measure specific products and material flows, both for general statistics purposes but also since there is a strong interest of constructing circular loops for these specific products and materials to reduce its environmental footprint. To achieve this, there is a need for an improved traceability and transparency regarding the specific trade volumes of the products and materials so that the recycling industry can identify that there is a continuous flow of these products and materials which is a strong incentive for investment in a larger recycling capacity. The products are also a suspected source of microplastics since they are sometimes fragile and loosely composited, as well as cut and handled outdoors on-site which results in the material being found on the ground.

Practical Reasons and Declaration Issues

The existing CN codes for declaring these products suggest that many different types of products may be declared within each code. The current descriptions include a broad range of products with different shapes and level of development and without the usage purpose clarified. The product which makes it difficult for both companies, governments, and customs to understand the exact type of products declared in the CN. Companies within the construction and plastic industry strive for a clearer structure to understand their product flows in more detail, while governments and customs wants to be able to observe the effects of any applied policy instruments, regulations, or targeted changes for consumption behavior on a national or international level. Today, neither can be measured clearly for the products mentioned in this suggestion.

The suggestion of adding new CN separates the different products from others allowing companies to declare a clearer purpose allowing an enhanced traceability. The new descriptions are simple and clear, allowing three categories of products a better and more clear declaration.

Trading Volumes

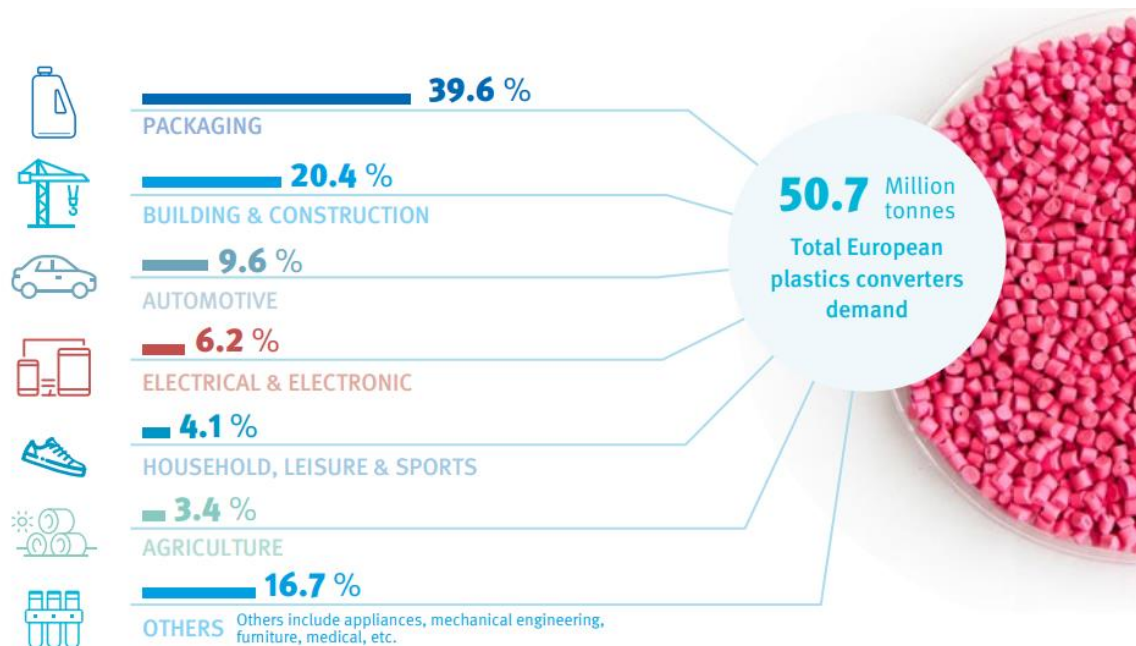


Figure 5. European plastic converters demand in 2019⁹

Plastics has been a continuously growing market since the early 1950s. In 2019, the world plastic production is estimated to a staggering 368 million tonnes where more than half of all plastics are produced in Asia and exported. The demand for plastics in Europe is over 50.7 million tonnes yearly and is mainly related to packaging as well as building & construction (see Figure 2 above). Products mentioned in the suggested change are related to are explicitly mentioned by PlasticsEurope as commonly produced products by resin type, such as PUR and PVC, which indicates large trade volumes each year (see Figure 3 below).

⁹ PlasticsEurope, 2020

PLASTICS DEMAND DISTRIBUTION BY RESIN TYPE 2019

Data for EU28+NO/CH.

SOURCE: PlasticsEurope
Market Research Group
(PEMRG) and Conversio Market
& Strategy GmbH

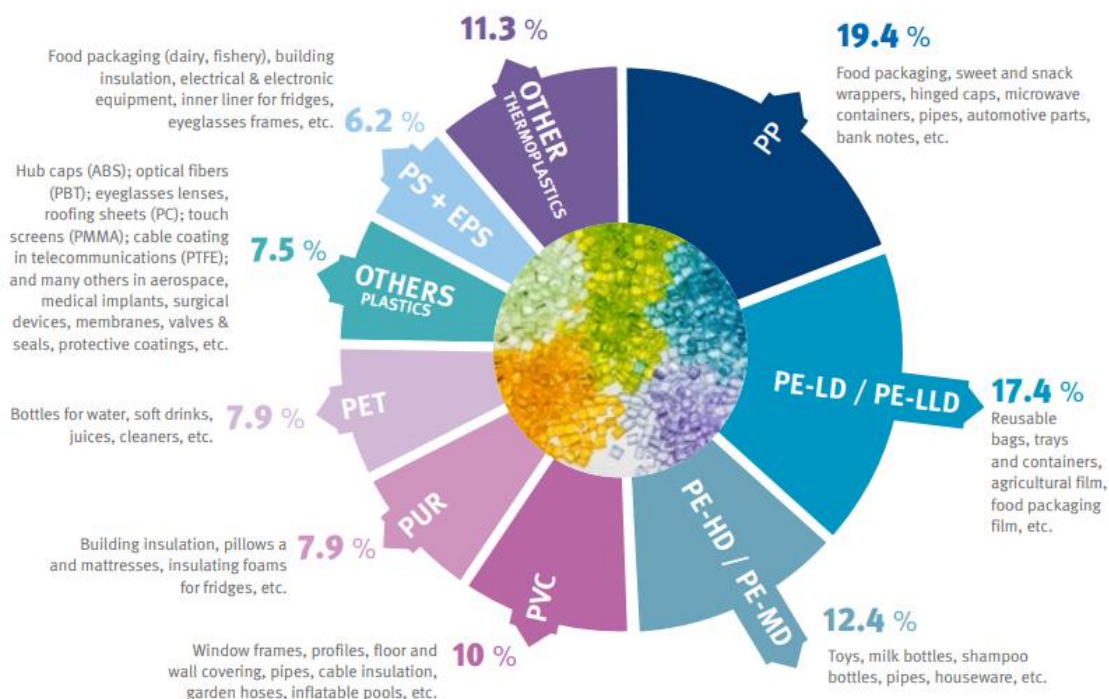


Figure 6. Plastics demand distribution by resin type 2019¹⁰

Eurostat data confirms that trade volumes for 2020 related to the existing CN codes exceeds hundreds of million euro including import, export, and internal EU trade (see **Eurostat Trade Data** at the end of this document).

¹⁰ PlasticsEurope, 2020

PLASTICS DEMAND BY SEGMENT AND POLYMER TYPE IN 2019

Data for EU28+NO/CH.

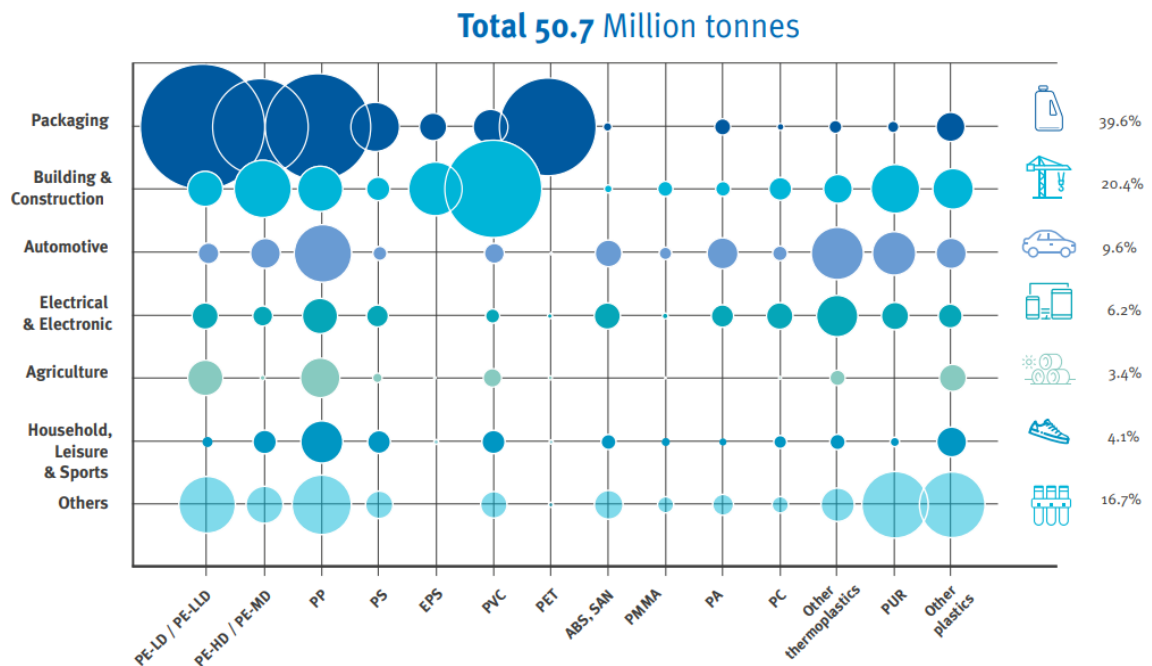


Figure 7. Plastics demand by segment and polymer type in 2019¹¹

PUR, PE, PVC, and other polymers used within the construction sector has a large general demand within building & construction (see Figure 4). Note that the demand of plastics from building & construction represent a fifth of all plastics demand in the world.

Sustainability

98% of all plastics made today are fossil-based, only 2% are made from biobased material. As mentioned above, products for the construction sector have generally longer lifecycles depending on its application, but due to the products fragile structure, on-site customizations, and renovations the products are suspected sources of microplastics.

Many of the products mentioned above are often technically simplistic and solely made of one polymer with one or a few colors used which makes it recyclable. Theoretically, products made of PUR, PIR, PP, PE, and PVC can be recycled if collected separately. In order to increase the recycling capacity of these products, the recycling industry needs clear information regarding specific product flows since different products require different

¹¹ PlasticsEurope, 2020

pre-efforts to fit a mechanical recycling line (i.e., washing, cutting and sorting).

The ideal recycling is often done in so called “closed loops” where a type of product is collected, recycled, and re-made into the same type of product. This type of circular flow often requires close collaboration with different stakeholders (manufactures, distributors, waste management companies etc.) and often when this type of collaboration is discussed, measuring the product flow as a feedstock for the loop is an important component as this often decides if the efforts required in terms of logistics, recycling and similar.

Tubes, pipes and hoses

On behalf of Swedish EPA, we suggest a change of the combined nomenclature (CN) with the purpose of separating tubes, pipes and hoses made by different polymers for different purposes.

Suggested Change

Current CN code		New/revised CN code	
3917 21	Tubes, pipes and hoses, rigid of polymers of ethylene	3917 21 05	<i>Tubes, pipes and hoses, rigid: Of polymers of ethylene: For construction and infrastructure</i>
		3917 21 06	<i>Tubes, pipes and hoses, rigid: Of polymers of ethylene: For agriculture</i>
3917 22	Tubes, pipes and hoses, rigid of polymers of propylene	3917 22 05	<i>Tubes, pipes and hoses, rigid: Of polymers of propylene: For construction and infrastructure</i>
		3917 22 06	<i>Tubes, pipes and hoses, rigid: Of polymers of propylene: For agriculture</i>
3917 23	Tubes, pipes and hoses, rigid of polymers of vinyl chloride	3917 23 05	<i>Tubes, pipes and hoses, rigid: Of polymers of vinyl chloride: For construction and infrastructure</i>
		3917 23 06	<i>Tubes, pipes and hoses, rigid: Of polymers of vinyl chloride: For agriculture</i>

3917 29 00	Tubes, pipes and hoses, rigid: Of other plastics	3917 29 10	<i>Tubes, pipes and hoses, rigid: Of other plastics: For construction and infrastructure</i>
		3917 29 20	<i>Tubes, pipes and hoses, rigid: Of other plastics: For agriculture</i>
		3917 29 90	<i>Tubes, pipes and hoses, rigid: Of other plastics: Other</i>
3917 31 00	Other tubes, pipes and hoses: Flexible tubes, pipes and hoses, having a minimum burst pressure of 27,6 MPa	3917 31 10	<i>Other tubes, pipes and hoses: Flexible tubes, pipes and hoses, having a minimum burst pressure of 27,6 MPa: For construction and infrastructure</i>
		3917 31 20	<i>Other tubes, pipes and hoses: Flexible tubes, pipes and hoses, having a minimum burst pressure of 27,6 MPa: For agriculture</i>
		3917 31 30	<i>Other tubes, pipes and hoses: Flexible tubes, pipes and hoses, having a minimum burst pressure of 27,6 MPa: For medical applications</i>
		3917 31 90	<i>Other tubes, pipes and hoses: Flexible tubes, pipes and hoses, having a minimum burst</i>

			<i>pressure of 27,6 MPa: Other</i>
<i>3917 32 00</i>	Other tubes, pipes and hoses: Other, not reinforced or otherwise combined with other materials, without fittings	3917 32 10	<i>Other tubes, pipes and hoses: Other, not reinforced or otherwise combined with other materials, without fittings: For construction and infrastructure</i>
		3917 32 20	<i>Other tubes, pipes and hoses: Other, not reinforced or otherwise combined with other materials, without fittings: For agriculture</i>
		3917 32 30	<i>Other tubes, pipes and hoses: Other, not reinforced or otherwise combined with other materials, without fittings: For medical applications</i>
		3917 32 90	<i>Other tubes, pipes and hoses: Other, not reinforced or otherwise combined with other materials, without fittings: Other</i>
<i>3917 33 00</i>	Other tubes, pipes and hoses: Other, not reinforced or otherwise combined with other materials, with fittings	3917 33 10	<i>Other tubes, pipes and hoses: Other, not reinforced or otherwise combined with other materials, with fittings: For construction and infrastructure</i>

		3917 33 20	<i>Other tubes, pipes and hoses: Other, not reinforced or otherwise combined with other materials, with fittings: For agriculture</i>
		3917 33 30	<i>Other tubes, pipes and hoses: Other, not reinforced or otherwise combined with other materials, with fittings: For medical applications</i>
		3917 33 90	<i>Other tubes, pipes and hoses: Other, not reinforced or otherwise combined with other materials, with fittings: Other</i>
3917 39 00	Other tubes, pipes and hoses: Other	3917 39 10	<i>Other tubes, pipes and hoses: Other: For construction and infrastructure</i>
		3917 39 20	<i>Other tubes, pipes and hoses: Other: For agriculture</i>
		3917 39 30	<i>Other tubes, pipes and hoses: Other: For medical applications</i>
		3917 39 90	<i>Other tubes, pipes and hoses: Other: Other</i>
3917 40 00	Fittings	3917 40 10	<i>Fittings: For construction and infrastructure</i>
		3917 40 20	<i>Fittings: For agriculture</i>

		3917 40 30	<i>Fittings: For medical applications</i>
		3917 40 90	<i>Fittings: Other</i>
Clarification:			
The change would result in the further separation of CN codes for tubes, pipes and hoses into area of application. The products mentioned in this change are products that are used for applications <i>within</i> different sectors, not as parts of mechanical machinery such as trucks or tractors that may be utilized working within the different sectors.			
New CN codes (29):			
	3917 29 10	3917 32 10	3917 39 10
3917 21 05	3917 29 20	3917 32 20	3917 39 20
3917 21 06	3917 29 90	3917 32 30	3917 39 30
		3917 32 90	3917 39 90
3917 22 05	3917 31 10		
3917 22 06	3917 31 20	3917 33 10	3917 40 10
		3917 33 20	3917 40 20
3917 23 05	3917 31 30	3917 33 30	3917 40 30
3917 23 06	3917 31 90	3917 33 90	3917 40 90
Removed CN codes (6):			
3917 29 00			
3917 31 00			
3917 32 00			
3917 33 00			
3917 39 00			
3917 40 00			

Reason for proposed change

Tubes, pipes, and hoses include a variety of different products that may differ substantially in size, shape and are of application. These CN codes include for example large wastewater pipes as well as single-use drinking straws. A further separation of these different products would benefit the industry as they better could identify specific products flows, both for general statistics purposes but also since there is a strong interest of constructing circular loops for these specific products to reduce its environmental footprint. To achieve this, there is a need for an improved traceability and transparency regarding the specific trade volumes of the products so that the recycling industry can identify that there is a continuous

flow of these products which is a strong incentive for investment in a larger recycling capacity.

Description of the product

Tubes, pipes and hoses for construction and infrastructure purposes include below ground pipe systems, such as sewers, stormwater management, drainage, distribution of drinking water, gas, energy and telecommunication. Above ground pipes are used for water supply, surface heating and cooling, wastewater and rainwater drainage.

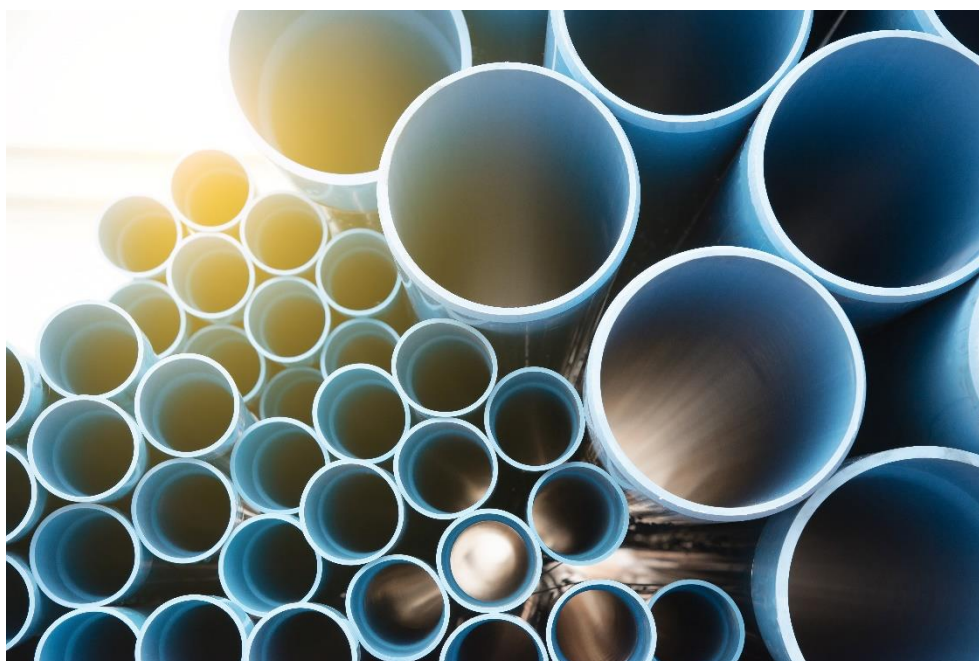


Figure 8. Example of pipes used in construction and infrastructure.¹²

Tubes, pipes and hoses for application within agriculture include for example irrigation pipes and hoses, pipes and hoses for drainage and pipes and hoses for manure application and fertilizer hoses.

Flexible tubes, pipes and hoses used in medical applications include for example medical catheters, IV sets, enteral feeding tubes, irrigation, drainage, dialysis and respiratory applications, diagnostic instruments, bio-processing fluid transfer, microdermabrasion, pneumatically operated hospital beds and tourniquets. Common materials are for example FEP, Nylon, PVC, PEEK, PTFE, TPE and PUR.

Practical reasons

Tubes, pipes and hoses are used in a wide range of applications. Those used in medical applications differ for example substantially from those used in

¹² IVL Swedish Environmental Research Institute, 2022

medical applications in terms of for example the product size and requirements of chemical and physical properties. In further separating and defining these CN codes, it may be clearer to companies, governments, and customs, which products are included in the CN codes. Companies within the plastic industry strive for a clearer structure to understand their product flows in more detail, while governments and customs wants to be able to observe the effects of any applied policy instruments, regulations, or targeted changes for consumption behavior on a national or international level. Today, neither can be measured clearly for the products mentioned in this suggestion.

Trading volumes

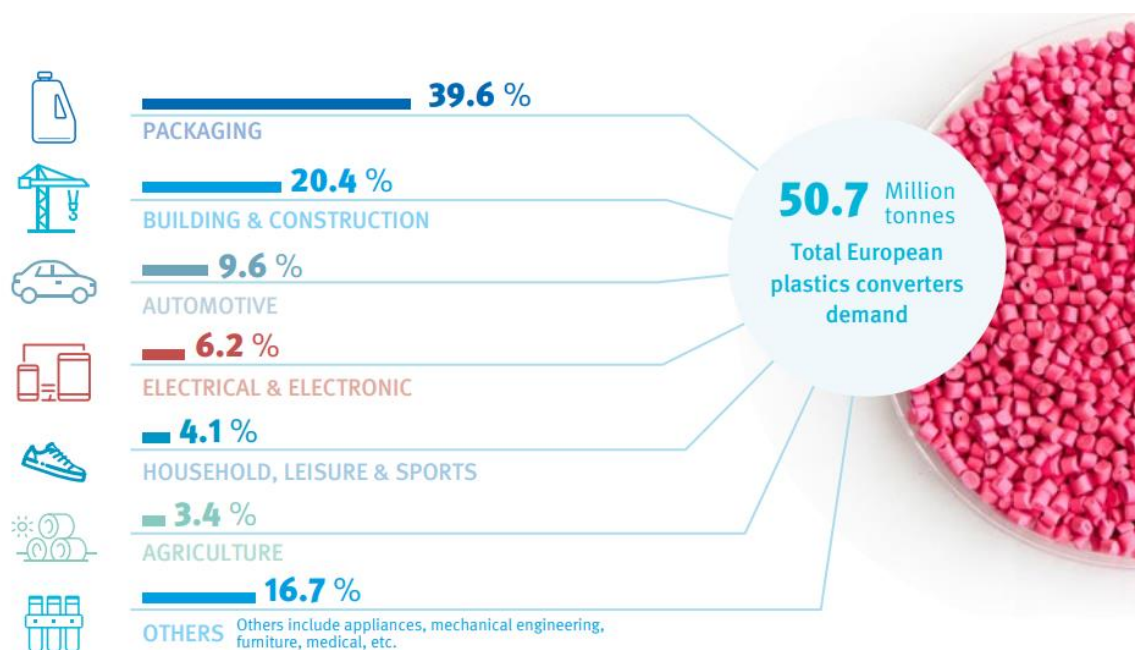


Figure 9. European plastic converters demand in 2019¹³

Plastics has been a continuously growing market since the early 1950s. In 2019, the world plastic production is estimated to a staggering 368 million tonnes where more than half of all plastics are produced in Asia and exported. The demand for plastics in Europe is over 50.7 million tonnes yearly and is mainly related to packaging as well as building & construction (see Figure 2 above). According to the European Plastic Pipe and Fittings Association (Teppfa), their members produced about three million tonnes annually.¹⁴

¹³ PlasticsEurope, 2020

¹⁴ The European Plastic Pipe and Fittings Association, 2021

Eurostat data confirms that trade volumes for 2020 related to the existing CN codes exceeds hundreds of million euro including import, export, and internal EU trade (see **Eurostat Trade Data** at the end of this document). Although it is not known what the trade volume would be for the CN codes added according to this proposal, it is reasonable to assume that it would still be very large. Lastly, there is no indication that the volumes of plastic tubes, pipes, and hoses in either of the specified application areas would decrease in the future.

Sustainability

98% of all plastics made today are fossil-based, only 2% are made from biobased material. Plastic production, use and disposal have several adverse environmental impacts. Additives are added to give the finished product its required qualities, posing additional risks to health and environment. During use, plastic pipes risk leaking toxic substances to the environment and at disposal, either landfilling or incineration, toxic substances may also leak into the environment or form during combustion.

Plastic tubes, pipes and hoses have different service life depending on its application. Some tubes for medical applications are for example single-use and wastewater pipes may last for up to a hundred years.

In order to increase the recycling capacity of plastic tubes, pipes and hoses, the recycling industry needs clear information regarding specific product flows since different products require different chemical properties and pre-efforts to fit a mechanical recycling line (i.e., washing, cutting, and sorting). Knowing the origin of a product is also important if the recycled product will be used in healthcare, hygiene products or come in contact with drinking water or food.

The ideal recycling is often done in so called “closed loops” where a type of product is collected, recycled, and re-made into the same type of product. This type of circular flow often requires close collaboration with different stakeholders (manufactures, distributors, waste management companies, etc.) and often when this type of collaboration is discussed, measuring the product flow as a feedstock for the loop is an important component as this often decides if the efforts required in terms of logistics, recycling and similar.

Tubes, pipes and hoses may be recycled at the end of life, a practice which is in use to some extent. Recycling of PVC pipes occurs for example in the Netherlands and through the Nordic Plastic Pipe Association, PVC, PE and PP pipes are recycled, however only covering a small part of the potential

capacity.^{15, 16} A large part of tubes used for medical applications are single-use, resulting in a large amount of waste and a need of new products. Although some tubes come in contact with infectious diseases and may not be recycled, other tubes are safe to recycle. There are current recycling initiatives, one example being recycling of PVC medical waste, including PVC medical tubes in Belgium¹⁷. In order to know the potential for large-scale recycling of these pipes, thus enabling actors to start new and expand existing recycling initiatives, the different product streams must be able to be identified in the trade statistics.

¹⁵ Nordic Council of Ministers, 2019

¹⁶ Regeringskansliet, 2018

¹⁷ Medical Plastics News, 2021

EPS and XPS

On behalf of Swedish EPA, we suggest a change of the combined nomenclature (CN) with the purpose of separating plastics products made of expanded polystyrene (EPS) and Extruded polystyrene foam (XPS).

Suggested change

Current CN		New Codes	
3921 11 00	<i>Other Plates, sheets, film, foil and strip, of cellular polymers of styrene</i>	3921 11 10	<i>Of expanded polystyrene (EPS) or extruded polystyrene foam (XPS) for buildings and constructions.</i>
		3921 11 90	<i>Other</i>
3923 10	<i>Boxes, cases, crates and similar articles</i>	3923 10 70	<i>Isolating boxes with or without lid, of expanded polystyrene (EPS), for food.</i>
		3923 10 80	<i>Boxes, with or without lid, of expanded polystyrene (EPS), for single-use purposes in the food packing industry.</i>
3923 90 00	<i>Other articles for the conveyance or packaging of goods, of plastics</i>	3923 90 20	<i>Pallets, perforated trays, balls and other products used for protection during transport, purposes of expanded polystyrene (EPS).</i>
		3923 90 90	<i>Other</i>

9507 90 00	Other fishing rods, fishhooks and other line fishing tackle; fish landing nets, butterfly nets and similar nets; decoy 'birds' (other than those of heading 9208 or 9705) and similar hunting or shooting requisites	9507 90 10	Floats used within fishing industry of expanded cellular polystyrene (EPS).
		9507 90 90	Other

Clarifications:

The change results in the following new CN codes:

3921 11 10

3921 11 90

3923 10 70

3923 10 80

3923 90 20

3923 90 90

9507 90 10

9507 90 90

The following CN codes are suggested to be removed:

3921 11 00

3923 90 00

9507 90 00

Proposal for explanatory notes:

3921 11 10 – This subheading covers expanded polystyrene (EPS), or extruded polystyrene foam (XPS) mainly used for insulation purposes in buildings and constructions.

3923 10 70 – This subheading covers expanded polystyrene (EPS) shaped into boxes with or without lid containing food such as fruit, meat, or raw fishes.

3923 90 20 – Pallets, “breaking pieces”, perforated trays, styrofoam balls, edge protection, corner protections and other custom-made profiles for packaging and protection during transportation.

Reason for proposed change

EPS was invented in 1944 and is a petrochemical plastic is obtained from crystal polystyrene or Crystal PS and it's composed of 98% of air.¹⁸

Products of EPS and XPS are commonly used all over Europe within several industries such as food packaging, building and construction, commercial fishing, logistics and transportation and others. The products are large in volume and has usually short lifecycles, usually few or single-use or even shorter due to its fragile structure. It is often used in single-use products for food packaging, multiple-use purposes such as fishing boxes, packaging chips and floats, as well as long term use for insulation in buildings.



Figure 10. Example of products mentioned in this suggested change¹⁹

Products made of EPS and XPS are important to separate clearly within CN due to their large trade volume. Manufacturers would benefit by being able to identify, separate and measure specific products and material flows, both for general statistics purposes but also since there is a strong interest of constructing circular loops for these specific products and materials to reduce its environmental footprint. To achieve this, there is a need for an improved traceability and transparency regarding the specific trade volumes of the products and materials so that the recycling industry can identify that

¹⁸ Ocean Wise, 2018

¹⁹ Swedish Environmental Protection Agency, IVL Swedish Environmental Research Institute, 2022

there is a continuous flow of these products and materials which is a strong incentive for investment in a larger recycling capacity. The products are also a common source microplastics since they are fragile and loosely composited as well as poorly managed in its end-of-life which results in the material being a common litter later found on land and in the sea.

Practical Reasons and Declaration Issues

The existing CN codes above suggest that many different types of products may be declared within each code. The current descriptions include a broad range of products with different shapes and level of development and without the usage purpose clarified. This makes it difficult for both companies, governments, and customs to understand the exact type of products declared in the CN. Companies within the plastic industry strive for a clearer structure to understand their product flows in more detail, while governments and customs wants to be able to observe the effects of any applied policy instruments, regulations, or targeted changes for consumption behavior on a national or international level. Today, neither can be measured clearly for the products mentioned in this suggestion.

The suggestion of adding new CN separates the different EPS-products from others allowing companies to declare a clearer purpose allowing an enhanced traceability. The new descriptions are simple and clear, allowing five categories of products a better and more clear declaration.

Trading Volumes

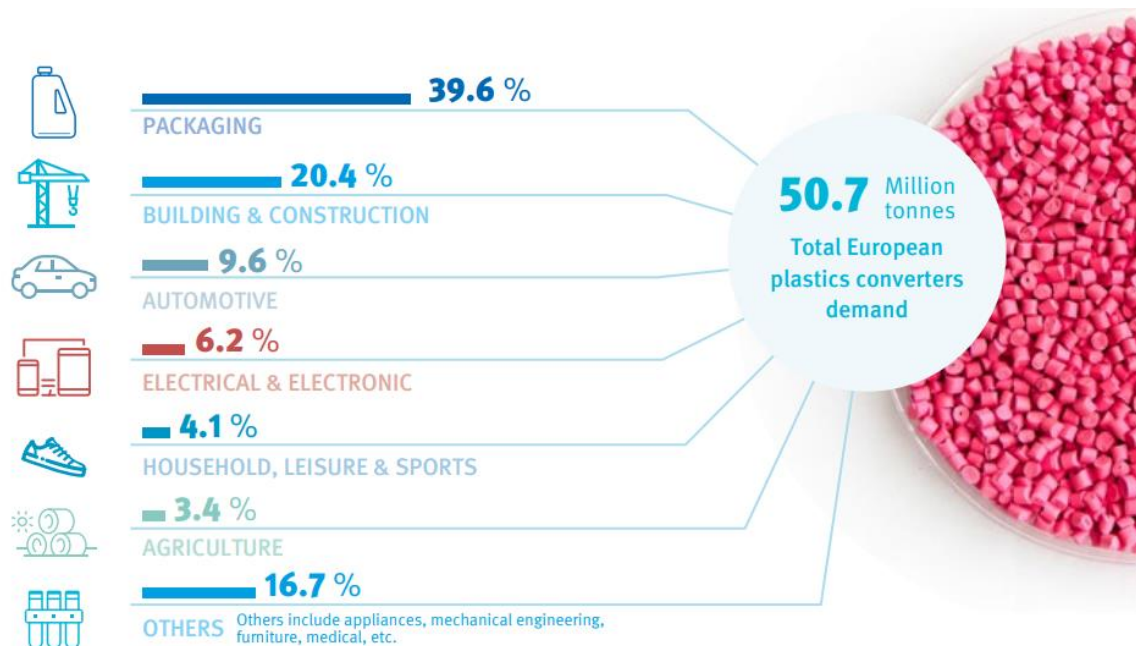


Figure 11. European plastic converters demand in 2019²⁰

Plastics has been a continuously growing market since the early 1950s. In 2019, the world plastic production is estimated to a staggering 368 million tonnes where more than half of all plastics are produced in Asia and exported. The demand for plastics in Europe is over 50.7 million tonnes yearly and is mainly related to packaging as well as building & construction (see Figure 2 above). Products mentioned in the suggested change such as food packaging for dairy and fishery, and building insulation are explicitly mentioned by PlasticsEurope as commonly produced products by resin type which indicates large trade volumes each year (see Figure 3 below). Many of these products are well known, commonly used products that many people encounter daily.²

²⁰ PlasticsEurope, 2020

PLASTICS DEMAND DISTRIBUTION BY RESIN TYPE 2019

Data for EU28+NO/CH.

SOURCE: PlasticsEurope
Market Research Group
(PEMRG) and Conversio Market
& Strategy GmbH

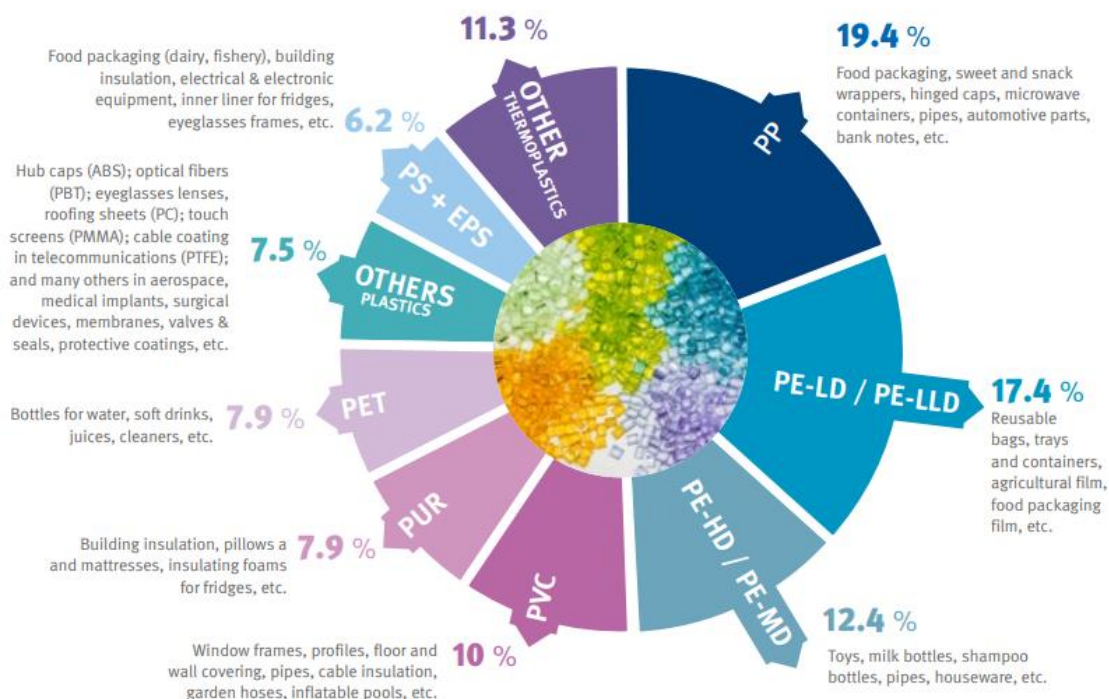


Figure 12. Plastics demand distribution by resin type 2019²¹

Eurostat data confirms that trade volumes for 2020 related to the existing CN codes exceeds hundreds of million euro including import, export, and internal EU trade (see **Eurostat Trade Data** at the end of this document).

²¹ PlasticsEurope, 2020

SOURCE: PlasticsEurope
Market Research Group
(PEMRG) and Conversio
Market & Strategy GmbH

PLASTICS DEMAND BY SEGMENT AND POLYMER TYPE IN 2019

Data for EU28+NO/CH.

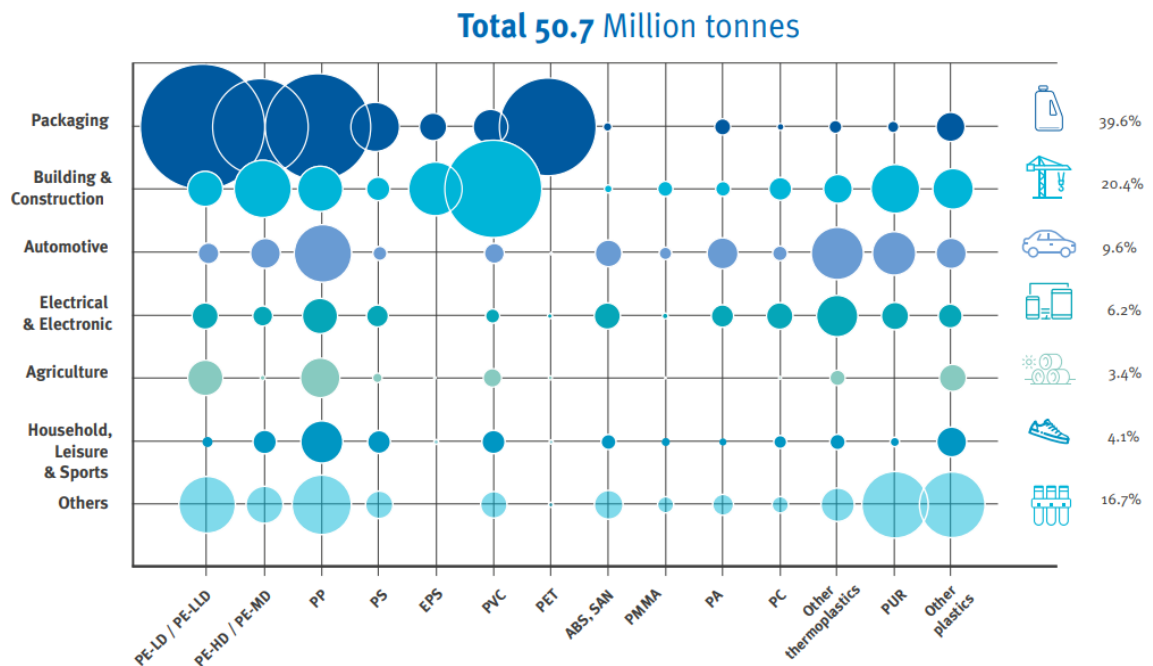


Figure 13. Plastics demand by segment and polymer type in 2019²²

EPS/XPS are polymers which has a large demand both in the packing industry as well as building & construction (see Figure 4). Note that both these sectors represent more than half of all plastics demand in the world.

Sustainability

98% of all plastics made today are fossil-based, only 2% are made from biobased material. As mentioned above, products made of EPS/XPS have different lifecycles depending on its application, but it is generally short due to the products fragile structure which is also a reason why it is often related to littering on land and sea. In the oceans, the products break down into tiny fragments that are eaten by plankton, fish, and seabirds and as such enter the food chain. This is one of the reasons why plastics nowadays can be found in most humans as well.²³

Many EPS-products are often technically simplistic and solely made of EPS which makes it recyclable, especially if it has not been contaminated or soiled by other materials. Theoretically, it can be extruded to give crystal PS

²² PlasticsEurope, 2020

²³ Ocean Wise, 2018

or re-expanded to provide a new EPS. It can also be crushed after cleaning to be used in lightened concrete or in various applications (padding cushions for example).⁵ In order to increase the recycling capacity of these products, the recycling industry needs clear information regarding specific product flows since different products require different pre-efforts to fit a mechanical recycling line (i.e., washing, cutting, and sorting). Knowing the origin of a product is also important if the recycled product will be used in healthcare, hygiene products or come in contact with food.

The ideal recycling is often done in so called “closed loops” where a type of product is collected, recycled, and re-made into the same type of product. This type of circular flow often requires close collaboration with different stakeholders (manufactures, distributors, waste management companies, etc.) and often when this type of collaboration is discussed, measuring the product flow as a feedstock for the loop is an important component as this often decides if the efforts required in terms of logistics, recycling and similar.

Equipment for sports, physical exercise, and leisure

On behalf of Swedish EPA, we suggest a change of the combined nomenclature (CN) with the purpose of separating equipment for sports, physical exercise and leisure made of plastic.

Suggested change

Current CN		New Codes	
3924 10	<i>Tableware and kitchenware, of plastics.</i>	3924 10 40	<i>Water bottles, thermoses, shakers, and similar for multiple-use.</i>
3926 90	<i>Other articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s.</i>	3926 90 70	<i>Articles of plastics for leisure and outdoor and indoor activities made mainly of plastics.</i>
3926 90	<i>Other articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s.</i>	3926 90 95	<i>Handles, mudguards, child seats and other accessories of plastics. (Excl. parts from 8714 99 80 below)</i>
8714 99	<i>Other parts and accessories for bicycles, and parts thereof, n.e.s.</i>	8714 99 80	<i>Handles, mudguards, child seats and other accessories of plastics.</i>
9506 91	<i>Articles and equipment for general physical exercise, gymnastics or athletics</i>	9506 91 80	<i>Articles and equipment for general physical exercise, gymnastics or athletics made mainly of plastics.</i>

9506 99	<i>Other articles and equipment for sport and outdoor games n.e.s; swimming and paddling pools.</i>	9506 99 70	<i>swimming and paddling pools of plastics.</i>
9506 99	<i>Other articles and equipment for sport and outdoor games n.e.s; swimming and paddling pools.</i>	9506 99 80	<i>Articles and equipment for sport and outdoor games made of plastics n.e.s;</i>

Clarifications:

The change results in the following new CN codes:

3924 10 40

3926 90 70

3926 90 95

8714 99 80

9506 91 80

9506 99 70

9506 99 80

Proposal for explanatory notes:

3924 10 40 – Such as sports bottles, shakers for exercise or for hiking.

3926 90 70 – Such as sleeping and sitting pads and airbeds.

9506 99 80 – Such as protective pads for elbows and knees (earlier in 9506 99 90), cones, goals, sticks, clubs, and sledges.

Reason for proposed change

Plastics are commonly used in equipment for sports, physical exercise, and leisure. The products are made in different shape and sizes but are commonly made solely of plastics. The products are usually made for repeated and intense use for both children and adults, for both indoor and outdoor activities during all seasons, and therefore the products have different lifecycles.

Products made for these purposes are important to separate clearly within CN due to their large trade volume. Manufacturers would benefit by being able to identify, separate and measure specific products and material flows, both for general statistics purposes but also since there is a strong interest of better understanding of the flows of plastic and developing the waste treatment as well as constructing circular loops for these specific products and materials to reduce its environmental footprint. To achieve this, there is a need for an improved traceability and transparency regarding the specific trade volumes of the products and materials so that the recycling industry can identify that there is a continuous flow of these products and materials which is a strong incentive for investment in a larger recycling capacity.

Practical Reasons and Declaration Issues

The existing CN codes above suggest that many different types of products may be declared within each code. Moreover, the codes (with exception of 3924 10 00 and 3926 90) does not specify if the product is made of plastics or not. The current descriptions include a broad range of products with different shapes and level of development and without the usage purpose clarified. The description makes it difficult for both companies, governments, and customs to understand the exact type of products declared in the CN. Companies within the plastic industry strive for a clearer structure to understand their product flows in more detail, while governments and customs wants to be able to observe the effects of any applied policy instruments, regulations, or targeted changes for consumption behavior on a national or international level. Today, neither can be measured clearly for the products mentioned in this suggestion.

The suggestion of adding new CN codes separating products made of plastics and not from others, as well as adding examples in the descriptions providing a general idea of the product characteristics allows companies to declare a clearer purpose allowing an enhanced traceability. The new descriptions are simple and clear, allowing different type of products a better and more clear declaration.

Trading Volumes

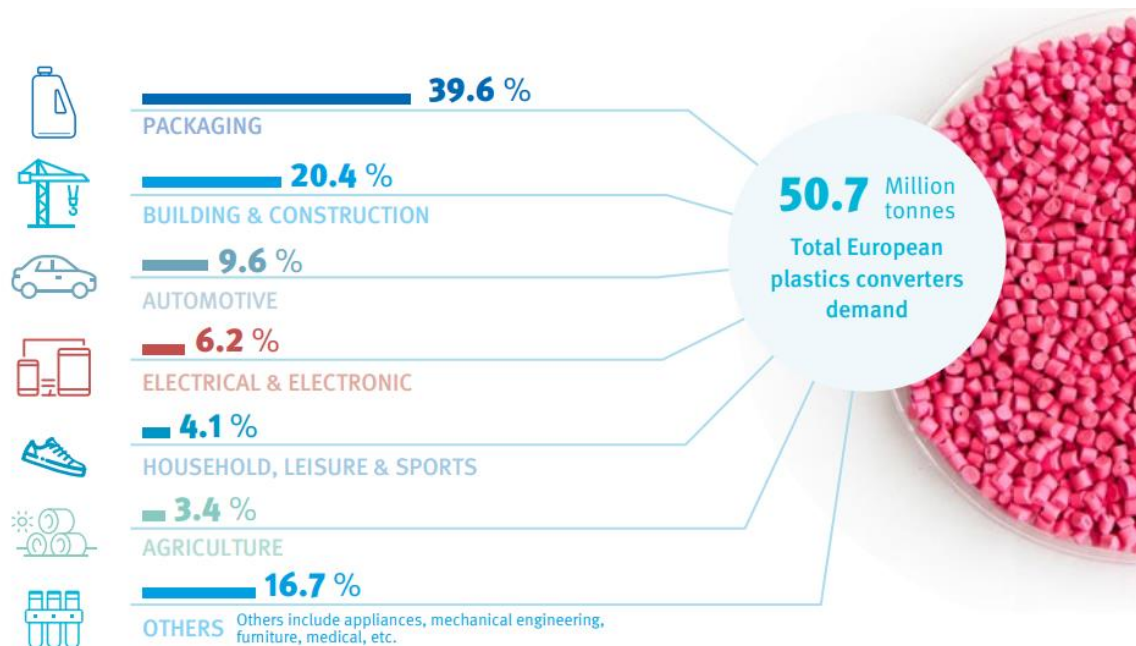


Figure 14. European plastic converters demand in 2019²⁴

Plastics has been a continuously growing market since the early 1950s. In 2019, the world plastic production is estimated to a staggering 368 million tonnes where more than half of all plastics are produced in Asia and exported. The demand for plastics in Europe is over 50.7 million tonnes yearly and is mainly related to packaging as well as building & construction, but also household, leisure, and sports (see Figure 2 above). Products mentioned in the suggested change are related to are explicitly mentioned by PlasticsEurope as commonly produced products by resin type which indicates large trade volumes each year (see Figure 3 below). Many of these products are well known, commonly used products that many people encounter daily, such as water bottles for sports and leisure.²

²⁴ PlasticsEurope, 2020

PLASTICS DEMAND DISTRIBUTION BY RESIN TYPE 2019

Data for EU28+NO/CH.

SOURCE: PlasticsEurope
Market Research Group
(PEMRG) and Conversio Market
& Strategy GmbH

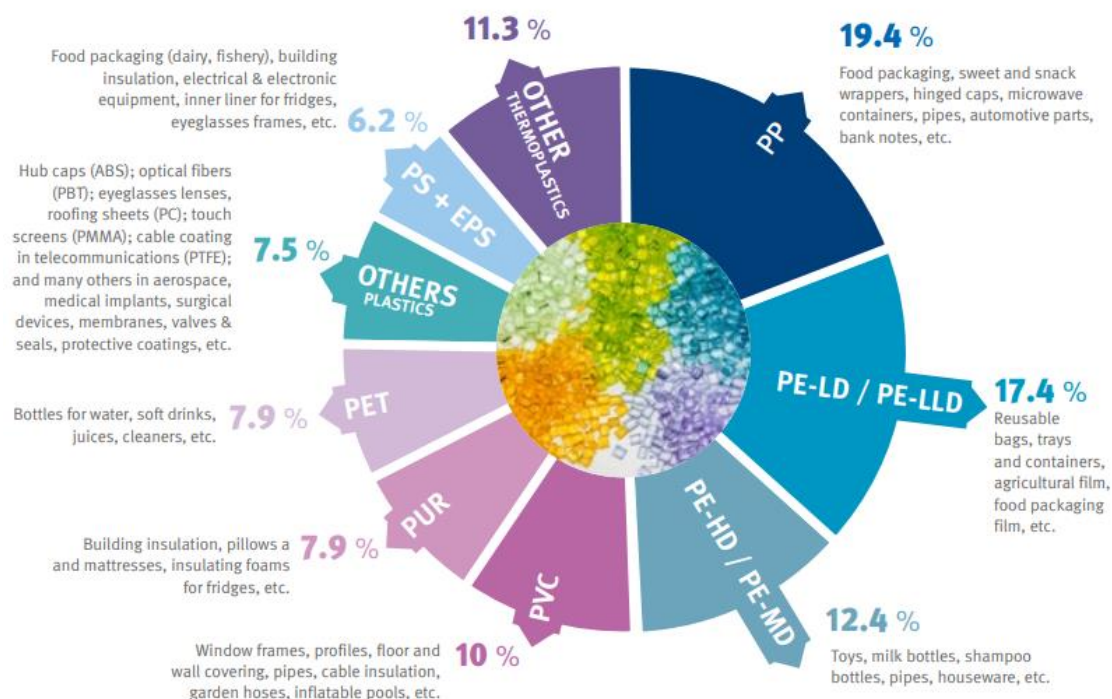


Figure 15. Plastics demand distribution by resin type 2019²⁵

Eurostat data confirms that trade volumes for 2020 related to the existing CN codes exceeds hundreds of million euro including import, export, and internal EU trade (see **Eurostat Trade Data** at the end of this document).

²⁵ PlasticsEurope, 2020

PLASTICS DEMAND BY SEGMENT AND POLYMER TYPE IN 2019

Data for EU28+NO/CH.

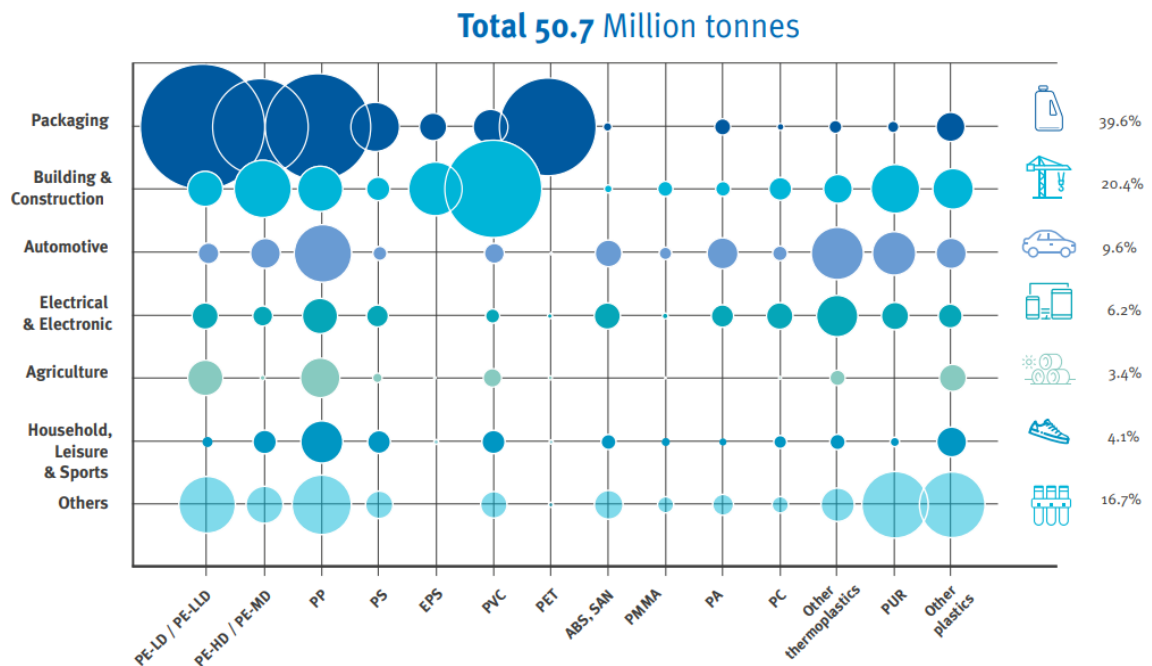


Figure 16. Plastics demand by segment and polymer type in 2019²⁶

Products related to household, leisure and sports are made by different polymers which are all large in demand both in the packing industry as well as building & construction (see Figure 4). Note that PP is the most commonly used polymer within the sector which has a high recyclability.

Sustainability

98% of all plastics made today are fossil-based, only 2% are made from biobased material. As mentioned above, products related to sports, physical exercise and leisure have different lifecycles depending on who is using it and how frequently, but it is generally short due to the products being used indoor and outdoor. Drinking bottles are very commonly forgotten or thrown away when they are not considered clean. However, the material used in the bottles is usually homogenic and of high quality and sometimes transparent which is often a relief for the recycling industry who want to offer non-colored plastic resin to their customers.

Many of the products mentioned above are often technically simplistic and solely made of one polymer with one or a few colors used which makes it

²⁶ PlasticsEurope, 2020

recyclable. Theoretically, products made of PP, PE, and PS can be recycled if collected separately. In order to increase the recycling capacity of these products, the recycling industry needs clear information regarding specific product flows since different products require different pre-efforts to fit a mechanical recycling line (i.e., washing, cutting and sorting). Knowing the origin of a product is also important if the recycled product will be used in healthcare, hygiene products or come in contact with food.

The ideal recycling is often done in so called “closed loops” where a type of product is collected, recycled, and re-made into the same type of product. Separating products such as water bottles used within sports and leisure as a single product flow would benefit the recycling industry for creating this type of circular flow, as it often requires close collaboration with different stakeholders (manufactures, distributors, waste management companies, etc.) and often when this type of collaboration is discussed, measuring the product flow as a feedstock for the loop is an important component as this often decides if the efforts required in terms of logistics, recycling and similar.

Single-Use Plastics

On behalf of Swedish EPA, we suggest a change of the combined nomenclature (CN) with the purpose of separating plastic products made for single-use and multiple use.

Suggested change

Current CN		New Codes	
3920 10	<i>Other plates, sheets, film, foil and strip, of plastics, non-cellular and not reinforced, laminated, supported or similarly combined with other materials.</i>	3920 10 22	<i>Shrink film for logistics and transportation purposes.</i>
		3920 10 26	<i>Shrink film, stretch film, foils, cultivation foils, and packaging for agricultural purposes.</i>
3923 10 90	<i>Boxes, cases, crates and similar articles for the conveyance or packaging of goods, of plastics (excl. special ones for semiconductor wafers, masks or reticles)</i>	3923 10 40	<i>Boxes, lids, fast-food packaging, containers for raw or cooked food for temporary storage or direct consumption, made of plastic for multiple-use.</i>
		3923 10 50	<i>Boxes, lids, fast-food packaging, containers for raw or cooked food for temporary storage or direct consumption, made of plastic for single-use.</i>
3923 21 00	<i>Sacks and bags (including cones) of polymers of ethylene</i>	3923 21 10	<i>Bags and plastic carrier bags with a wall thickness of < 15 micrometer.</i>

		3923 21 20	<i>Bags and plastic carrier bags with a wall thickness 15-50 micrometer.</i>
		3923 21 30	<i>Bags and plastic carrier bags with a wall thickness >50 micrometer.</i>
		3923 21 40	<i>Other sacks and bags (including cones) of polymers of ethylene</i>
3923 30 10	<i>Carboys, bottles, flasks and similar articles for the conveyance or packaging of goods, of plastics, with a capacity of $\leq 2\text{ l}$</i>	3923 30 20	<i>Carboys, bottles, flasks and similar articles for the conveyance or packaging of goods, of plastics, with a capacity of $\leq 0,6\text{ l}$ for multiple-use.</i>
		3923 30 30	<i>Carboys, bottles, flasks and similar articles for the conveyance or packaging of goods, of plastics, with a capacity of $\leq 0,6\text{ l}$ for single-use.</i>
3923 30 90	<i>Carboys, bottles, flasks and similar articles for the conveyance or packaging of goods, of plastics, with a capacity of $> 2\text{ l}$</i>	3923 30 70	<i>Carboys, bottles, flasks and similar articles for the conveyance or packaging of goods, of plastics, with a capacity of $> 0,6\text{ l}$ for multiple-use.</i>
		3923 30 80	<i>Carboys, bottles, flasks and similar articles for the</i>

			<i>conveyance or packaging of goods, of plastics, with a capacity of > 0,6 l for single-use.</i>
3923 90	<i>Other articles for the conveyance or packing of goods, of plastics; stoppers, lids, caps and other closures, of plastics</i>	3923 90 30	<i>Bubblewrap, straps, plastic coverage for pallets, bundles and non-adhesive packaging tape of plastics for single-use</i>
3924 10 00	<i>Tableware and kitchenware, of plastics.</i>	3924 10 10	<i>Tableware and kitchenware, of plastics, for multiple-use.</i>
		3924 10 20	<i>Single-use cups and glasses of plastic or with plastic coating.</i>
		3924 10 30	<i>Other tableware and kitchenware, of plastics, for single-use.</i>
3926 90	<i>Other articles of plastics and articles of other materials of headings 3901 to 3914.</i>	3926 90 30	<i>Cover nets for agricultural purposes. (Excl. nets from 5608 19 12 below)</i>
5608 19	<i>Other knotted netting of twine, cordage or rope; made-up fishing nets and other made-up nets, of textile materials</i>	5608 19 12	<i>Cover nets for agricultural purposes.</i>
9503 00	<i>Tricycles, scooters, pedal cars and similar wheeled toys;</i>	9503 00 89	<i>Balloons of plastic or rubber.</i>

	<i>dolls' carriages; dolls; other toys; reduced-size "scale" recreational models, working or not; puzzles of all kinds</i>		
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Clarifications:

The change results in the following new CN codes:

3920 10 22
 3920 10 26
 3923 10 40
 3923 10 50
 3923 21 10
 3923 21 20
 3923 21 30
 3923 21 40
 3923 30 20
 3923 30 30
 3923 30 70
 3923 30 80
 3923 90 30
 3924 10 10
 3924 10 20
 3924 10 30
 3926 90 30
 5608 19 12
 9503 00 89

The following CN codes are suggested to be removed:

3920 71 00
 3923 10 90
 3923 30 10
 3923 30 90
 3924 10 00

3923 21 00

Single use bottles are suggested to be separated into small bottles (≤ 0.6 l) and large (> 0.6 l) since this is the distinction made by EU: single-use plastic directive.

Two types of codes for nets used for agricultural purposes have been suggested in order to cover extruded nets made by plastics (3926 90 30) and knotted nets (5608 19 12).

Proposal for explanatory notes:

3924 10 10 – Such as cups, boxes, glasses, knives, forks, spoons, ladles, trays, stirring sticks, plates, and straws.

3924 10 30 – Such as knives, forks, spoons, ladles, trays, stirring sticks, plates, and straws

3920 10 22 – Shrink film used for transporting goods, usage such as wrapping around pallets, boxes, crates, and similar.

Reason for proposed change

Single-use plastics products are commonly used all over Europe within several industries such as fast food, logistics, transportation, and agriculture. The products are large in volume and has short lifecycles. Common single-use products are displayed below such as boxes for carrying (fast) food, bottles, knives, forks, glasses, balloons, stretch and shrink film, straps, and others.



Figure 17. Example of single-use products mentioned in this suggested change²⁷

Products for single-use are important to separate clearly within CN due to their large trade volume. Manufacturers would benefit by being able to identify, separate and measure specific products and material flows, both for general statistics purposes but also since there is a strong interest of knowing more about these specific products and learn how to reduce its environmental footprint, and an interest to follow the trade volumes more closely. To achieve this, there is a need for an improved traceability and transparency regarding the specific trade volumes of the products and materials so that the recycling industry can identify that there is a continuous flow of these products and materials which is a strong incentive for investment in a larger recycling capacity. The products are also a common source microplastics since they are single-use, fragile and

²⁷

Swedish Environmental Protection Agency,
IVL Swedish Environmental Research Institute, Pixabay, 2022

sometimes loosely composited. Furthermore, the products are often handled poorly in its end-of-life which results in the material being a common litter later found on land and in the sea.

Practical Reasons and Declaration Issues

The existing CN codes above suggest that many different types of products may be declared within each code, both for single-use and multiple use. The current descriptions include a broad range of products with different shapes and level of development and without the usage purpose clarified. This makes it difficult for both companies, governments, and customs to understand the exact type of products declared in the CN. Companies within the plastic industry strive for a clearer structure to understand their product flows in more detail, while governments and customs wants to be able to observe the effects of any applied policy instruments, regulations, or targeted changes for consumption behavior on a national or international level. Today, neither can be measured clearly for the products mentioned in this suggestion.

The suggestion of adding new CN and one clarification separates mainly single-use products from multiple use allowing companies to declare a clearer purpose allowing an enhanced traceability within the European and international market. The new descriptions are simple and clear, providing examples and allowing a better and more clear declaration.

Trading Volumes

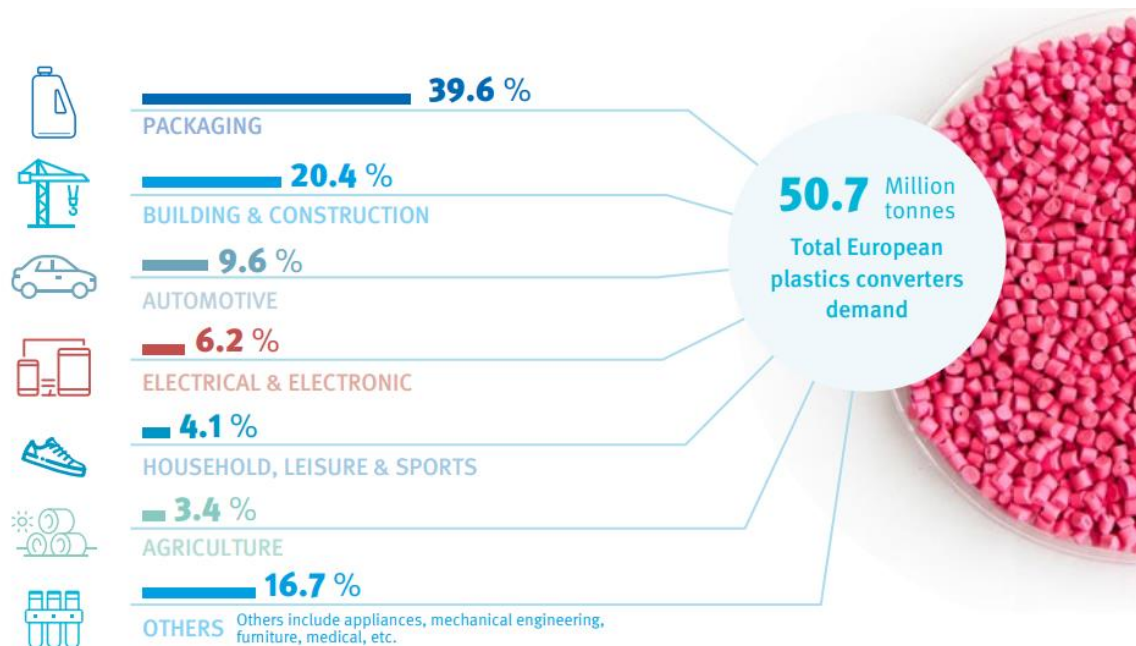


Figure 18. European plastic converters demand in 2019²⁸

Plastics has been a continuously growing market since the early 1950s. In 2019, the world plastic production is estimated to a staggering 368 million tonnes where more than half of all plastics are produced in Asia and exported. The demand for plastics in Europe is over 50.7 million tonnes yearly and is mainly related to packaging (see Figure 2 above). Products mentioned in the suggested change such as food packaging, stretch and shrink film for agricultural purposes and bottles are explicitly mentioned by PlasticsEurope as commonly produced products by resin type which indicates large trade volumes each year (see Figure 3 below). Many of these products are well known, commonly used products that many people encounter daily.²

²⁸ PlasticsEurope, 2020

PLASTICS DEMAND DISTRIBUTION BY RESIN TYPE 2019

Data for EU28+NO/CH.

SOURCE: PlasticsEurope
Market Research Group
(PEMRG) and Conversio Market
& Strategy GmbH

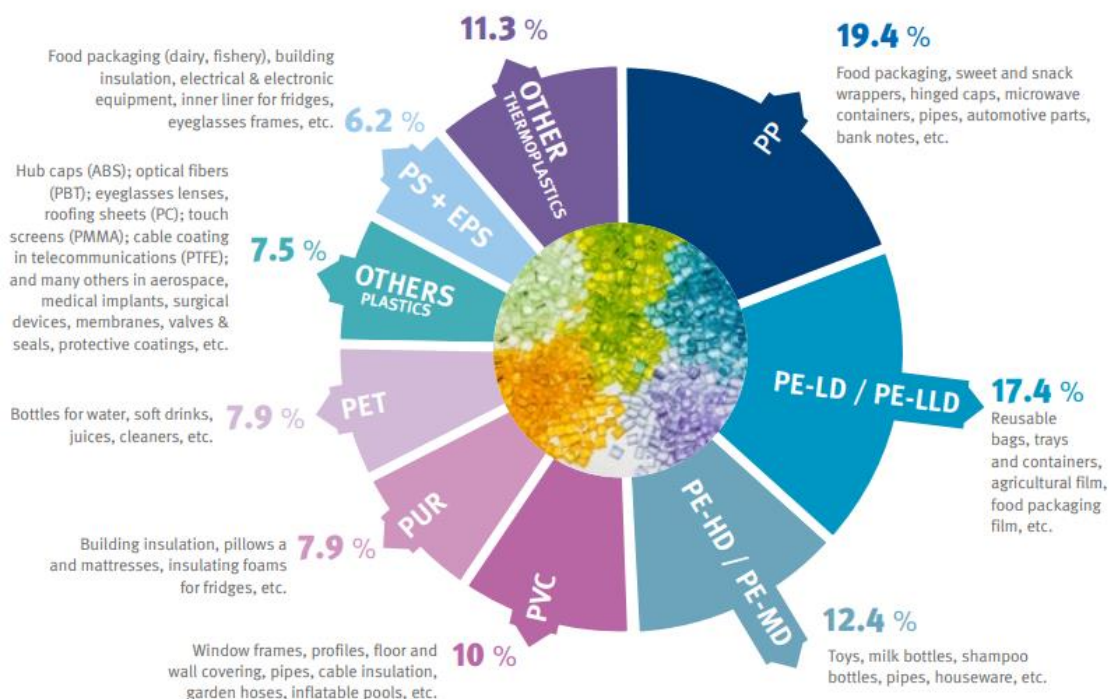


Figure 19. Plastics demand distribution by resin type 2019²⁹

Eurostat data confirms that trade volumes for 2020 related to the existing CN codes exceeds hundreds of million euro including import, export, and internal EU trade (see **Eurostat Trade Data** at the end of this document).

²⁹ PlasticsEurope, 2020

PLASTICS DEMAND BY SEGMENT AND POLYMER TYPE IN 2019

Data for EU28+NO/CH.

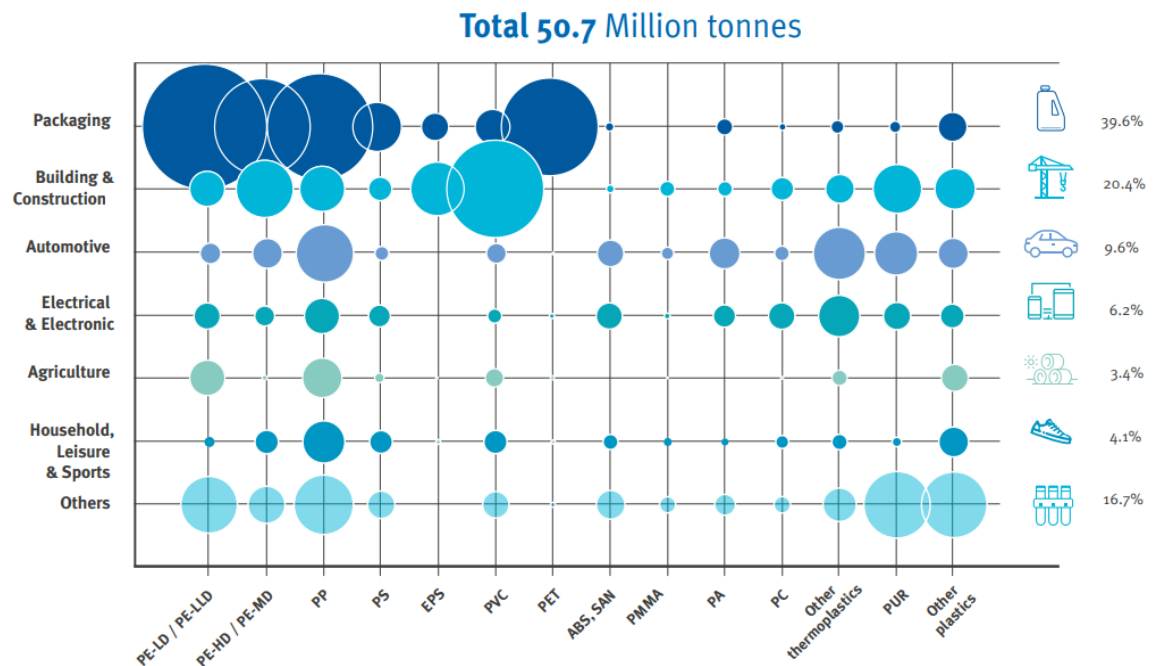


Figure 20. Plastics demand by segment and polymer type in 2019³⁰

PP, PE and PET are polymers which has a large demand both in the packing industry (see Figure 4). Note that the packaging industry alone almost represent half of all plastics demand in the world.

Sustainability

98% of all plastics made today are fossil-based, only 2% are made from biobased material. As mentioned above, single-use products have short lifecycles, and due to the products fragile structure which is also a reason why it is often related to littering on land and sea. In the oceans, the products break down into tiny fragments that are eaten by plankton, fish, and seabirds and as such enter the food chain. This is one of the reasons why plastics nowadays can be found in most humans as well.³¹

Many Single-use products are often technically simplistic and solely made of one type of polymer which makes it recyclable, especially if it has not been contaminated or soiled by other materials, especially if collected separately. In order to increase the recycling capacity of these products, the

³⁰ PlasticsEurope, 2020

³¹ Ocean Wise, 2018

recycling industry needs clear information regarding specific product flows since different products require different pre-efforts to fit a mechanical recycling line (i.e., washing, cutting and sorting). Knowing the origin of a product is also important if the recycled product will be used in healthcare, hygiene products or come in contact with food.

The ideal recycling is often done in so called “closed loops” where a type of product is collected, recycled, and re-made into the same type of product. This type of circular flow often requires close collaboration with different stakeholders (manufactures, distributors, waste management companies, etc.) and often when this type of collaboration is discussed, measuring the product flow as a feedstock for the loop is an important component as this often decides if the efforts required in terms of logistics, recycling and similar.

Directive on single-use plastics

EU has implemented a new Directive on single-use plastics (SUP directive). The objectives of the Directive are to prevent and reduce the impact of certain plastic products on the environment, in particular the aquatic environment, and on human health, as well as to promote the transition to a circular economy with innovative and sustainable business models, products and materials, thus also contributing to the efficient functioning of the internal market.

Through the SUP directive different measures are being applied to different products. These measures are proportionate and tailored to get the most effective results, and also take into account if more sustainable alternatives are available.

The 10 items being addressed by the Directive are

- Cotton bud sticks
- **Cutlery, plates, straws and stirrers**
- **Balloons and sticks for balloons**
- **Food containers**
- **Cups for beverages**
- **Beverage containers**
- Cigarette butts
- **Plastic bags**
- Packets and wrappers
- Wet wipes and sanitary items

Where sustainable alternatives are easily available and affordable, single-use plastic products cannot be placed on the markets of EU Member States. This applies to cotton bud sticks, cutlery, plates, straws, stirrers, and sticks

for balloons. It will also apply to cups, food and beverage containers made of expanded polystyrene, and on all products made of oxo-degradable plastic.

For other single-use plastic products, the EU is focusing on limiting their use through different approaches such as:

- reducing consumption through awareness-raising measures
- introducing design requirements, such as a requirements to connect caps to bottles
- introducing labelling requirements, to inform consumers about the plastic content of products, disposal options that are to be avoided, and harm done to nature if the products are littered in the environment
- introducing waste management and clean-up obligations for producers, including Extended Producer Responsibility (EPR) schemes

Specific targets include

- a 77% separate collection target for plastic bottles by 2025 – increasing to 90% by 2029
- incorporating 25% of recycled plastic in PET beverage bottles from 2025, and 30% in all plastic beverage bottles from 2030

More targets or binding measures for reduction of the post-consumption waste of single-use plastic products may come in the future after the Commission has evaluated and reviewed the directive.

In order for Member States to be able to follow up targets set in the Directive or on Member State level (as part of the implementing of the Directive) and check compliance with the regulations, the Member States need to be able to find the product streams and responsible companies covered by the regulations.

Eurostat Trade Data

Eurostat trade data from Eurostat Comext System³² for CN codes affected by the suggested changes.

Eurostat Trade Data

Reporter: European Union – 27 countries*

Period: Jan.-Dec. 2020

* AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK

** AT, BE, BG, CY, CZ, DE, DK, EE, ES, FI, FR, GR, HR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, QR, QV, QY

CN	PRODUCT	FLOW	VALUE_IN_ EUROS/ PARTNER	Extra-EU27 (= 'WORLD' - 'EU27_2020_INT RA')	Intra-EU27**	Related to suggested change
63053219	63053219 Flexible intermediate bulk containers, for the packing of goods, of polyethylene or polypropylene strip or the like (excl. knitted or crocheted)	IMPORT	VALUE_IN_ EUROS	532 755 539	219 043 434	Flexible Intermediate Bulk Containers
		IMPORT	QUANTITY_ IN_100KG	2 280 609	887 041	
		EXPORT	VALUE_IN_ EUROS	33 633 531	289 997 276	
		EXPORT	QUANTITY_ IN_100KG	94 547	947 706	
39211390	39211390 Plates, sheets, film, foil and strip, of rigid cellular polyurethane, unworked or not further worked than surface-worked or merely cut into squares or rectangles (excl. such self-adhesive products, and floor, wall and ceiling coverings of heading 3918 and sterile surgical or dental adhesion barriers of subheading 3006.10.30)	IMPORT	VALUE_IN_ EUROS	86 442 450	459 469 175	Building and Construction
		IMPORT	QUANTITY_ IN_100KG	163 260	1 373 441	
		EXPORT	VALUE_IN_ EUROS	246 427 331	591 972 537	
		EXPORT	QUANTITY_ IN_100KG	621 630	1 873 355	
39259010	39259010 Fittings and mountings intended for permanent installation in or on doors, windows, staircases, walls or other parts of buildings, of plastics	IMPORT	VALUE_IN_ EUROS	132 933 759	575 873 232	Building and Construction
		IMPORT	QUANTITY_ IN_100KG	294 962	1 117 230	
		EXPORT	VALUE_IN_ EUROS	166 232 761	532 414 865	
		EXPORT	QUANTITY_ IN_100KG	270 955	970 518	

³² <https://ec.europa.eu/eurostat/web/international-trade-in-goods/data/focus-on-comext>

39259080	39259080 Builders' ware for the manufacture of flooring, walls, partition walls, ceilings, roofing, etc. guttering and accessories, banisters, fences and the like, fitted shelving for shops, factories, warehouses, storerooms, etc., architectural ornaments such as fluting, vaulting and friezes, of plastics, n.e.s.	IMPORT	VALUE_IN_ EUROS	298 558 486	1 238 826 643	Building and Construction
		IMPORT	QUANTITY_ IN_100KG	1 264 038	3 910 032	
		EXPORT	VALUE_IN_ EUROS	426 582 050	1 337 405 528	
		EXPORT	QUANTITY_ IN_100KG	1 131 494	4 544 075	
39211100	39211100 Plates, sheets, film, foil and strip, of cellular polymers of styrene, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, floor, wall and ceiling coverings of heading 3918 and sterile surgical or dental adhesion barriers of subheading 3006.10.30)	IMPORT	VALUE_IN_ EUROS	80 371 615	546 803 021	EPS and XPS
		IMPORT	QUANTITY_ IN_100KG	378 184	2 413 653	
		EXPORT	VALUE_IN_ EUROS	123 403 788	587 509 673	
		EXPORT	QUANTITY_ IN_100KG	393 740	2 430 491	
39231090	39231090 Boxes, cases, crates and similar articles for the conveyance or packaging of goods, of plastics (excl. special ones for semiconductor wafers, masks or reticles)	IMPORT	VALUE_IN_ EUROS	759 239 020	2 359 119 718	EPS and XPS Equipment for sports, physical exercise, and leisure
		IMPORT	QUANTITY_ IN_100KG	2 246 504	9 253 175	
		EXPORT	VALUE_IN_ EUROS	1 182 672 013	2 695 212 940	
		EXPORT	QUANTITY_ IN_100KG	3 613 796	8 663 022	
39239000	39239000 Articles for the conveyance or packaging of goods, of plastics (excl. boxes, cases, crates and similar articles; sacks and bags, incl. cones; carboys, bottles, flasks and similar articles; spools, spindles, bobbins and similar supports; stoppers, lids, caps and other closures)	IMPORT	VALUE_IN_ EUROS	664 645 927	1 651 544 802	EPS and XPS Single-Use Plastics
		IMPORT	QUANTITY_ IN_100KG	2 520 182	5 441 835	
		EXPORT	VALUE_IN_ EUROS	735 682 760	1 652 707 328	
		EXPORT	QUANTITY_ IN_100KG	1 987 154	4 993 563	
95079000	95079000 Line fishing tackle n.e.s.; fish landing nets, butterfly nets and similar nets; decoys and similar hunting or shooting requisites (excl. decoy calls of all kinds and stuffed birds of heading 9705)	IMPORT	VALUE_IN_ EUROS	183 382 655	141 581 602	EPS and XPS
		IMPORT	QUANTITY_ IN_100KG	127 435	64 046	

		EXPORT	VALUE_IN_ EUROS	75 384 184	187 050 728	
		EXPORT	QUANTITY_ IN_100KG	31 961	99 732	
39241000	39241000 Tableware and kitchenware, of plastics	IMPORT	VALUE_IN_ EUROS	855 877 675	1 524 184 072	Equipment for sports, physical exercise, and leisure
		IMPORT	QUANTITY_ IN_100KG	1 865 786	3 486 132	
		EXPORT	VALUE_IN_ EUROS	419 097 507	1 576 273 064	Single-Use Plastics
		EXPORT	QUANTITY_ IN_100KG	645 669	2 972 112	
39269097	39269097 Articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s.	IMPORT	VALUE_IN_ EUROS	6 716 167 163	14 630 157 985	Equipment for sports, physical exercise, and leisure
		IMPORT	QUANTITY_ IN_100KG	7 733 685	21 745 615	
		EXPORT	VALUE_IN_ EUROS	7 667 463 885	15 893 235 041	Single-Use Plastics
		EXPORT	QUANTITY_ IN_100KG	6 204 328	21 852 263	
87149990	87149990 Parts and accessories for bicycles, and parts thereof, n.e.s.	IMPORT	VALUE_IN_ EUROS	786 035 935	1 017 209 925	Equipment for sports, physical exercise, and leisure
		IMPORT	QUANTITY_ IN_100KG	445 360	596 669	
		EXPORT	VALUE_IN_ EUROS	219 403 461	853 903 117	
		EXPORT	QUANTITY_ IN_100KG	73 660	458 417	
95069190	95069190 Articles and equipment for general physical exercise, gymnastics or athletics (excl. exercising apparatus with adjustable resistance mechanisms)	IMPORT	VALUE_IN_ EUROS	822 331 211	836 301 219	Equipment for sports, physical exercise, and leisure
		IMPORT	QUANTITY_ IN_100KG	3 497 832	1 686 085	
		EXPORT	VALUE_IN_ EUROS	292 329 675	710 821 563	
		EXPORT	QUANTITY_ IN_100KG	392 937	1 904 773	
95069990	95069990 Articles and equipment for sport and outdoor games n.e.s; swimming and paddling pools	IMPORT	VALUE_IN_ EUROS	1 090 538 935	1 225 144 793	Equipment for sports, physical exercise, and leisure
		IMPORT	QUANTITY_ IN_100KG	2 536 334	1 824 271	
		EXPORT	VALUE_IN_ EUROS	622 789 264	1 407 663 550	
		EXPORT	QUANTITY_ IN_100KG	815 547	2 104 137	
39201024	39201024 Stretch film of non-cellular polyethylene, not printed, of a thickness	IMPORT	VALUE_IN_ EUROS	231 571 649	940 983 995	Single-Use Plastics

	of <= 0,125 mm and of a specific gravity of < 0,94	IMPORT	QUANTITY_ IN_100KG	1 793 256	6 076 216	
		EXPORT	VALUE_IN_ EUROS	260 146 892	987 047 966	
		EXPORT	QUANTITY_ IN_100KG	1 511 734	6 545 746	
39232100	39232100 Sacks and bags, incl. cones, of polymers of ethylene	IMPORT	VALUE_IN_ EUROS	984 260 740	1 939 513 440	Single-Use Plastics
		IMPORT	QUANTITY_ IN_100KG	4 568 005	9 410 694	
		EXPORT	VALUE_IN_ EUROS	715 424 739	2 065 585 631	
		EXPORT	QUANTITY_ IN_100KG	2 624 431	9 115 286	
39233010	39233010 Carboys, bottles, flasks and similar articles for the conveyance or packaging of goods, of plastics, with a capacity of <= 2 l	IMPORT	VALUE_IN_ EUROS	644 303 447	2 013 891 613	Single-Use Plastics
		IMPORT	QUANTITY_ IN_100KG	1 185 177	8 796 707	
		IMPORT	SUPPLEMEN TARY_QUA NTITY	4 413 803 643	27 024 928 712	
		EXPORT	VALUE_IN_ EUROS	688 893 666	2 301 141 422	
		EXPORT	QUANTITY_ IN_100KG	1 708 275	7 917 741	
		EXPORT	SUPPLEMEN TARY_QUA NTITY	7 271 667 685	30 295 042 549	
39233090	39233090 Carboys, bottles, flasks and similar articles for the conveyance or packaging of goods, of plastics, with a capacity of > 2 l	IMPORT	VALUE_IN_ EUROS	140 496 918	575 813 761	Single-Use Plastics
		IMPORT	QUANTITY_ IN_100KG	389 632	2 653 921	
		IMPORT	SUPPLEMEN TARY_QUA NTITY	98 892 996	985 064 101	
		EXPORT	VALUE_IN_ EUROS	142 455 265	481 083 335	
		EXPORT	QUANTITY_ IN_100KG	404 691	2 048 646	
		EXPORT	SUPPLEMEN TARY_QUA NTITY	296 395 505	450 101 931	
56081990	56081990 Knotted netting of twine, cordage, ropes or cables, by the piece or metre, of man-made textile materials (excl. made-up nets)	IMPORT	VALUE_IN_ EUROS	32 790 080	35 640 739	Single-Use Plastics
		IMPORT	QUANTITY_ IN_100KG	90 841	69 829	
		EXPORT	VALUE_IN_ EUROS	25 571 017	37 472 274	

		EXPORT	QUANTITY_ IN_100KG	42 935	53 571	
95030095	95030095 Plastic toys, n.e.s.	IMPORT	VALUE_IN_ EUROS	860 688 886	1 284 874 989	Single-Use Plastics
		IMPORT	QUANTITY_ IN_100KG	1 166 172	1 407 672	
		EXPORT	VALUE_IN_ EUROS	206 214 006	1 441 117 759	
		EXPORT	QUANTITY_ IN_100KG	225 542	1 693 705	
39172110	39172110 Rigid tubes, pipes and hoses, of polymers of ethylene, seamless and of a length > the maximum cross-sectional dimension, whether or not surface-worked, but not otherwise worked	IMPORT	VALUE_IN_ EUROS	70 179 097	491 886 006	Tubes, pipes and hoses
		IMPORT	QUANTITY_ IN_100KG	290 470	2 011 678	
		EXPORT	VALUE_IN_ EUROS	206 563 142	519 404 275	
		EXPORT	QUANTITY_ IN_100KG	718 389	2 201 438	
39172210	39172210 Rigid tubes, pipes and hoses, of polymers of propylene, seamless and of a length > the maximum cross-sectional dimension, whether or not surface-worked, but not otherwise worked	IMPORT	VALUE_IN_ EUROS	26 654 050	171 794 981	Tubes, pipes and hoses
		IMPORT	QUANTITY_ IN_100KG	101 956	699 066	
		EXPORT	VALUE_IN_ EUROS	117 087 066	196 731 651	
		EXPORT	QUANTITY_ IN_100KG	394 172	721 644	
39172310	39172310 Rigid tubes, pipes and hoses, of polymers of vinyl chloride, seamless and of a length > the maximum cross-sectional dimension, whether or not surface-worked, but not otherwise worked	IMPORT	VALUE_IN_ EUROS	41 726 164	253 693 836	Tubes, pipes and hoses
		IMPORT	QUANTITY_ IN_100KG	213 672	1 598 409	
		EXPORT	VALUE_IN_ EUROS	81 147 880	275 587 008	
		EXPORT	QUANTITY_ IN_100KG	322 362	1 751 709	
39172900	39172900 Rigid tubes, pipes and hoses, of plastics (excl. those of polymers of ethylene, propylene and vinyl chloride)	IMPORT	VALUE_IN_ EUROS	206 617 436	365 046 314	Tubes, pipes and hoses
		IMPORT	QUANTITY_ IN_100KG	266 328	576 440	
		EXPORT	VALUE_IN_ EUROS	279 054 354	723 107 606	
		EXPORT	QUANTITY_ IN_100KG	426 265	762 374	
39173100		IMPORT	VALUE_IN_ EUROS	77 823 452	275 587 085	Tubes, pipes and hoses

	39173100 Flexible tubes, pipes and hoses, of plastics, burst pressure >= 27,6 MPa	IMPORT	QUANTITY_ IN_100KG	122 800	535 871	
		EXPORT	VALUE_IN_ EUROS	147 766 642	257 062 309	
		EXPORT	QUANTITY_ IN_100KG	126 807	414 363	
39173200	39173200 Flexible tubes, pipes and hoses of plastics, not reinforced or otherwise combined with other materials, without fittings	IMPORT	VALUE_IN_ EUROS	359 658 458	1 134 014 970	Tubes, pipes and hoses
		IMPORT	QUANTITY_ IN_100KG	340 622	2 342 658	
		EXPORT	VALUE_IN_ EUROS	768 706 476	1 200 511 347	
		EXPORT	QUANTITY_ IN_100KG	1 058 156	2 128 216	
39173300	39173300 Flexible tubes, pipes and hoses of plastics, not reinforced or otherwise combined with other materials, with fittings, seals or connectors	IMPORT	VALUE_IN_ EUROS	198 945 906	258 444 849	Tubes, pipes and hoses
		IMPORT	QUANTITY_ IN_100KG	176 325	450 603	
		EXPORT	VALUE_IN_ EUROS	167 446 944	269 688 549	
		EXPORT	QUANTITY_ IN_100KG	119 114	445 156	
39173900	39173900 Flexible tubes, pipes and hoses, of plastics, reinforced or otherwise combined with other materials (excl. those with a burst pressure of >= 27,6 MPa)	IMPORT	VALUE_IN_ EUROS	402 095 441	950 888 822	Tubes, pipes and hoses
		IMPORT	QUANTITY_ IN_100KG	606 154	1 856 473	
		EXPORT	VALUE_IN_ EUROS	711 619 932	1 111 274 913	
		EXPORT	QUANTITY_ IN_100KG	867 544	2 025 685	
39174000	39174000 Fittings, e.g. joints, elbows, flanges, of plastics, for tubes, pipes and hoses	IMPORT	VALUE_IN_ EUROS	700 682 191	1 863 431 612	Tubes, pipes and hoses
		IMPORT	QUANTITY_ IN_100KG	616 551	2 610 637	
		EXPORT	VALUE_IN_ EUROS	1 082 149 769	1 742 347 036	
		EXPORT	QUANTITY_ IN_100KG	958 223	1 987 744	

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