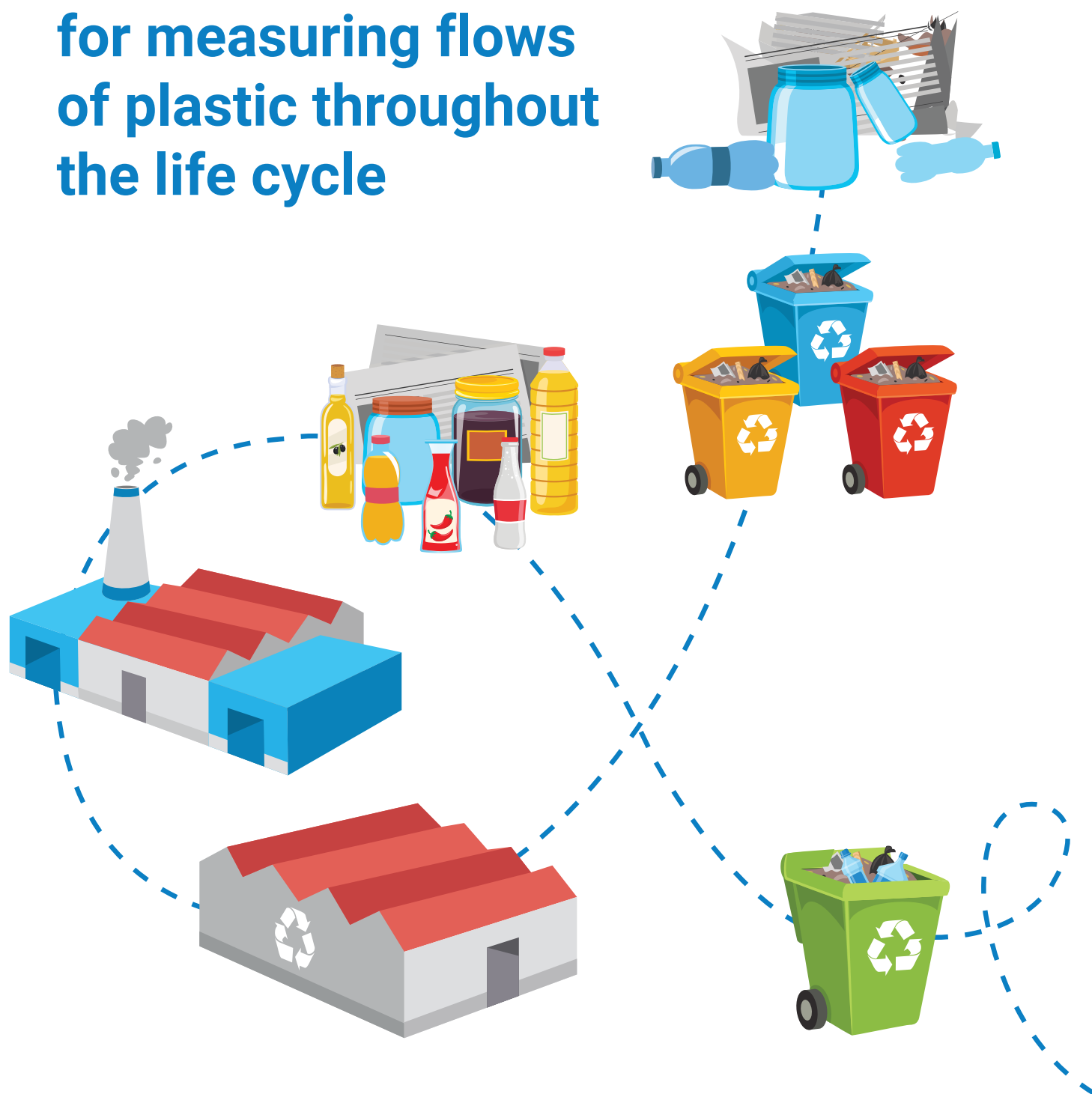


Statistical guideline for measuring flows of plastic throughout the life cycle





© 2026 United Nations Environment Programme and United Nations Institute for Training and Research

ISBN: 978-92-807-4260-2

Job number: DEW/2742/NA

DOI: <https://doi.org/10.59117/20.500.11822/49173>

This publication may be reproduced in whole or in part and in any form for educational or non-profit services without special permission from the copyright holder, provided acknowledgement of the source is made. The United Nations Environment Programme and the United Nations Institute for Training and Research would appreciate receiving a copy of any publication that uses this publication as a source.

No use of this publication may be made for resale or for any other commercial purpose whatsoever without prior permission in writing from the United Nations Institute for Training and Research. Applications for such permission, with a statement of the purpose and extent of the reproduction, should be addressed to the Senior Manager of the Sustainable Cycles Programme, United Nations Institute for Training and Research, scycle@unitar.org.

Third-party materials. Users wishing to reuse material from this work that is attributed to a third party, such as tables, figures or images, are responsible for determining whether permission is needed for that reuse and for obtaining permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

Disclaimers

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory or city or area or its authorities, or concerning the delimitation of its frontiers or boundaries.

The mention of a commercial company or product in this document does not imply endorsement or recommendation by the United Nations Environment Programme, United Nations Institute for Training and Research or the authors. The use of information from this document for publicity or advertising is not permitted. Trademark names and symbols are used in an editorial fashion with no intention on infringement of trademark or copyright laws.

The views expressed in this publication are those of the authors and do not necessarily reflect the views of the United Nations Environment Programme and the United Nations Institute for Training and Research. We regret any errors or omissions that may have been unwittingly made.

© Maps, photos, and illustrations as specified

Suggested citation: United Nations Environment Programme and United Nations Institute for Training and Research (2026). Statistical guideline for measuring flows of plastic throughout the life cycle. Nairobi & Bonn.

Design and layout: UNON Publishing Services Section.

Acknowledgments

The preparation of the Statistical Guideline for Measuring Flows of Plastic Throughout the Life Cycle was led by the United Nations Environment Programme (UNEP) and the United Nations Institute for Training and Research (UNITAR). The preparation involved consultations with statisticians outside of UNEP and UNITAR and several formal cycles of consultations, including the Community of Practice on the Harmonization of Models and Methodologies on Plastics, the System of Environmental-Economic Accounting – Central Framework Technical Committee of the United Nations Committee of Experts on Environmental-Economic Accounting (UNCEEA), and a Global Consultation covering all UN Member States.

UNEP and UNITAR would like to thank the many experts who contributed to this report through various forms of input – specifically, the work of preparing this guideline was led by the following experts: Zhijie Li (UNITAR), Ekaterina Poleshchuk (UNEP), and Cornelis Peter Baldé (UNITAR).

The following experts contributed to this statistical guideline through individual consultations or consultations with the Community of Practice on the Harmonization of Models and Methodologies on Plastics and the System of Environmental-Economic Accounting – Central Framework Technical Committee: Lucia Maier (Federal Statistical Office of Germany); Isabella Mehlin (Federal Statistical Office of Germany); Steffen Blume (GIZ); Roman Bertoldo Coutinho (GIZ); Jordan Gacutan (Global Ocean Accounts Partnership); Randika Jayasinghe (Global Ocean Accounts Partnership); Golnoush Abbasi (Norwegian Institute for Air Research); Daniel Clarke (OECD); Sarah Miet (OECD); Melisa Tin Siong Lim (Secretariat of the Basel, Rotterdam and Stockholm Conventions); Michele McMillan (Statistics Canada); Ole Gravgård Pedersen (Statistics Denmark); Roel Delahaye (Statistics Netherlands); Sjoerd Schenau (Statistics Netherlands); Gisle Berge (Statistics Norway); Terje Lorentzen Landsem (Statistics Norway); Camilla Skjerpen (Statistics Norway); Diana Vivienne Barrowclough (UNCTAD); Sonia Blachier (UNCTAD); Henrique Silva Pacini Costa (UNCTAD); Anu Peltola (UNCTAD); Michael Nagy (UNECE); Felipe Dall (UNEP); Nao Takeuchi (UNEP); Feng Wang (UNEP); Karen Raubenheimer (University of Wollongong, Australia); Jessica Ying Chan (UNSD); Marcus Newbury (UNSD); and Reena Shah (UNSD).

During the global consultation with UN Member States, comments and feedback were received from the following organisations: Blue Environment, Australia; State Institution 'Operator of secondary material resources', Ministry of Housing and Communal Services of the Republic of Belarus; Ministry of Natural Resources and Environmental Protection of the Republic of Belarus; National Statistical Committee of the Republic of Belarus (Belstat); Statistics Canada; Research Center for Eco-

Environmental Sciences, Chinese Academy of Sciences; National Administrative Department of Statistics (DANE), Colombia; Instituto Nacional de Estadística y Censos (INEC), Costa Rica; Instituto Nacional de Estadística y Censos, Ecuador; Statistics Estonia; Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Germany; Federal Statistical Office of Germany; Bureau of National Statistics of Agency for Strategic planning and reforms of the Republic of Kazakhstan; Bureau of Statistics, Lesotho; Department of Environment, Lesotho; Environment and Resources Authority, Malta; National Statistics Office, Malta; Ministry of Environment, Solid Waste Management and Climate Change (Plastic Management Division), Mauritius; Ministry of Environment, Solid Waste Management and Climate Change, Mauritius; Ministry of Environment and Natural Resources, Mexico; National Institute of Statistics and Geography (INEGI), Mexico; National Bureau of Statistics, Republic of Moldova; Statistics Norway; Environment Quality Authority (EQA), Palestine; Statistics Poland; General Authority for Statistics (GASTAT), Saudi Arabia; Slovak Environment Agency; Guernsey Waste, States of Guernsey; Central Water and Sewerage Authority (CWSA), St. Vincent and the Grenadines; Federal Department of Home Affairs (FDHA), Switzerland; Federal Office for the Environment, Switzerland; Turkish Statistical Institute; Federal Competitiveness and Statistics Centre, United Arab Emirates; Department For Environment, Food and Rural Affairs, United Kingdom of Great Britain and Northern Ireland; Secretariat of the Basel, Rotterdam and Stockholm Conventions (BRS Secretariat); International Union for Conservation of Nature (IUCN); Organisation for Economic Co-operation and Development (OECD); and United Nations Environment Programme (UNEP).

The following experts also contributed significantly to the final version of the guideline: Francis Mwangi Kariuki (UNEP) facilitated global consultation, Ruoxi Li (UNEP) copublished the agreement, Audrey Ringler (UNEP) designed the cover, Catherine Onyango (UNON) completed the layout.

A special thank you is extended to the General Statistics Office of Vietnam, which was involved in the pilot testing of the statistical guideline.

Financial support to produce this statistical guideline, which is gratefully acknowledged, came from the Environment Fund, the core fund of UNEP; the Global Partnership on Plastic Pollution and Marine Litter (GPML), including the funding from the Government of the United States of America and Japan; and the project 'Strengthening national capacities of nine Asia-Pacific countries to address plastic pollution by developing, updating, monitoring and reporting on National Action Plans, in the context of the negotiation for a global agreement', which is funded by the United Nations Peace and Development Trust Fund (UNPDF) 2030 Agenda for Sustainable Development Sub-Fund.

List of Abbreviations and Acronyms

CES	Conference of European Statisticians
CPC	Central Product Classification
CSA	Classification of statistical activities
EC	European Commission
EEE	Electrical and Electronic Equipment
EPR	Extended Producer Responsibility
Eurostat	Statistical Office of the European Union
EWC-Stat	European Waste Classification for Statistics
FDES	Framework for the Development of Environment Statistics
GPML	Global Partnership on Plastic Pollution and Marine Litter
HS	Harmonized Commodity Description and Coding System
INC	Intergovernmental Negotiating Committee
ISIC	International Standard Industrial Classification of All Economic Activities
IUCN	International Union for Conservation of Nature
LoW	European List of Wastes
MSW	Municipal Solid Waste
OECD	Organisation for Economic Co-operation and Development
NA	Not applicable
NACE	Statistical classification of economic activities in the European Community
n.d.	No date
n.e.c.	Not elsewhere classified
n.e.s.	Not elsewhere specified
POM	Placed on Market
PSUT	Physical Supply and Use Tables
SEEA	System of Environmental-Economic Accounting
SDG	Sustainable Development Goal
SEEA CF	System of Environmental-Economic Accounting Central Framework
SEEA EA	System of Environmental-Economic Accounting Ecosystem Accounting
SITC	Standard International Trade Classification
SNA	System of National Accounts
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UN-Habitat	United Nations Human Settlements Programme
UNITAR	United Nations Institute for Training and Research
UNSD	United Nations Statistics Division
USD	United States dollar
WaCT	Waste Wise Cities Tool
WFD	Waste Flow Diagram

Table of Contents

ACKNOWLEDGMENTS	i
LIST OF ABBREVIATIONS AND ACRONYMS	ii
LIST OF TABLES	iv
LIST OF FIGURES	iv
LIST OF BOXES	iv
SUMMARY	v
01 INTRODUCTION.....	1
1.1 The Necessity of a Global Statistical Guideline on Plastic	2
1.2 Brief Instructions on the Statistical Guideline and How to Start	2
02 THE PHYSICAL FLOW ACCOUNTING FRAMEWORK FOR PLASTIC	5
2.1 The Scope and Boundary of Plastic's Life Cycle.....	5
2.2 Terms and Definitions	6
2.3 Flows of plastic through the System of Environmental-Economic Accounting	10
2.4 Classifications to Support Plastic Statistics	17
03 ACCOUNTING FOR PLASTIC SUPPLY.....	24
3.1 Production	24
3.2 Imports	25
04 ACCOUNTING FOR PLASTIC USE	27
4.1 Consumption	27
4.2 Exports.....	31
05 ACCOUNTING FOR PLASTIC WASTE.....	33
5.1 Plastic Waste Generated	33
5.2 Plastic Waste Handling	37
5.3 Plastic Waste Trade	39
5.4 Plastic to the Environment	39
06 POTENTIAL DATA SOURCES AND UNITS OF MEASUREMENT	44
6.1 Data Sources of Plastic Supply and Use	44
6.2 Data Sources of Plastic Waste.....	45
6.3 Units of Measurement	49
07 CORE INDICATORS AND RELEVANT POLICIES	51
7.1 Core Indicators.....	51
7.2 Relevant Policies.....	53
08 PROSPECTS FOR THE NEXT VERSION OF THE STATISTICAL GUIDELINE.....	56
ANNEX 1: CPC CODES RELEVANT TO PLASTIC	58
ANNEX 2: SITC CODES RELEVANT TO PLASTIC	74
ANNEX 3: LINKS BETWEEN HS CODES RELEVANT TO PLASTIC AND PLASTIC-KEYS.....	88
ANNEX 4: LINKS BETWEEN HS CODES RELEVANT TO PLASTIC AND UNU-KEYS	109
ANNEX 5: LINKS BETWEEN PLASTIC-KEYS AND EWC-STAT	121
REFERENCES.....	122

List of Tables

Table 2.1:	Physical supply and use tables for plastic.....	12
Table 2.2:	The European List of Waste (LoW) codes that refer to source-separated plastic waste	18
Table 2.3:	Detailed description of the Plastic-KEYs.....	20
Table 3.1:	Basic form of a physical supply table for plastic	24
Table 4.1:	Basic form of a physical use table for plastic	27
Table 5.1:	Basic form of a physical supply and use table for plastic waste	33
Table 5.2:	The usage of classifications in the plastic waste statistics	34
Table 5.3:	Lifespans of some Plastic-KEYs (groups)	35
Table 6.1:	Average polymer composition for Plastic-KEY groups (percent)	48
Table 6.2:	Share of additive type in global plastic production	49

List of Figures

Figure 2.1:	Proposed measurement framework for the plastic life cycle.....	5
Figure 2.2:	Key plastic related terms and their plastic content.....	9
Figure 2.3:	Physical flows of natural inputs, products, and residuals	10
Figure 2.4:	Danish flows of plastic 2016 (1000 tonnes).....	15
Figure 2.5:	Structure of the physical flow account for plastic material, applied in Canada	16
Figure 2.6:	Correlations between various classifications for gathering and disseminating data for plastic waste statistics	22
Figure 4.1:	Apparent consumption of plastic bags (million tonnes).....	30
Figure 5.1:	Lifespan distributions of some Plastic-KEYs (or Plastic-KEY groups).....	36
Figure 5.2:	Flow chart of losses at the different stages of plastic life cycle.....	40

List of Boxes

Box 1:	National experience on physical flow account for plastic	15
Box 2:	UNCTAD example on plastic import statistics	25
Box 3:	Example of calculation of apparent consumption	30
Box 4:	UNCTAD example on plastic export statistics.....	31
Box 5:	Lifespan assumptions of plastic products/plastic-containing products.....	36
Box 6:	UN-Habitat guide to collect data on municipal solid waste at city level	38
Box 7:	UNCTAD example on statistics on plastic waste trade flows	39
Box 8:	Example of estimation of plastic waste flows into the environment	41
Box 9:	Example of estimation of plastic waste in the environment	42
Box 10:	National examples of statistics on plastic waste management	46
Box 11:	Regional and global data collection tools that include plastic waste indicators	47

Summary

With the continued increase in production and consumption of plastic in recent decades, the linear plastic economy and insufficient waste management, plastic pollution has become a global issue. In March 2022, the United Nations Environment Assembly adopted resolution 5/14, entitled 'End plastic pollution: towards an international legally binding instrument', to develop an international legally binding instrument on plastic pollution, including in the marine environment. The resolution also requests strengthening of methodologies for monitoring and calls upon all UN Member States to provide statistical information on the environmentally sound management of plastic waste with national conditions in consideration.

This statistical guideline addresses the gap that there is a lack of a detailed, globally agreed-upon statistical methodology for measuring flows of plastic at national, regional, and global levels. In the guideline, maximum attention has been paid to the existing internationally agreed statistical standards, classifications, methodologies and available data sources to provide the complete picture of flows of plastic throughout the life cycle. As an accounting system, it enables the organisation of information into tables and accounts in an integrated and conceptually coherent manner. This information can be used to create coherent indicators that can be used to facilitate evidence-based policies and action relating to plastic agendas at the local, national, and global level.

Within the proposed boundary of plastic's life cycle and key terms and definitions, this statistical guideline details the key elements in accounting for plastic supply, plastic use, and plastic waste, and provides recommendations on potential data sources. In particular, this guideline is structured as follows: Chapter 2 introduces the overall system boundary of plastic's life cycle, defines key terms

and definitions, proposes the structure of supply and use tables for plastic, and introduces the relevant statistical classifications; Chapters 3, 4, and 5 elaborate on the key elements in accounting for plastic supply, plastic use, and plastic waste, respectively; Chapter 6 focuses on potential data sources and units of measurement; Chapter 7 provides a list of core indicators such as 'Plastic Production', 'Plastic Imports, excluding waste', 'Plastic Exports, excluding waste', 'Apparent Consumption of Plastic', 'Plastic Waste Generated' and others, which can be built via this guideline to support policymakers and plastic-related policies; Chapter 8 presents the prospects for the development of the next version of the statistical guideline.

The target users of this statistical guideline are statistical offices and other relevant organisations responsible for production of statistics on plastic at national, regional and global levels. It aims to guide practitioners in producing high-quality, national-level statistics on plastic that are comparable among various countries. These statistics inform decision-makers and the general public on the effectiveness of policies on plastic along the life cycle, various SDGs such as SDG 12 on responsible consumption and production and SDG 14 on life below water, the circular economy, and many other policy domains.

This statistical guideline has been publicly consulted on with experts from international organisations, as well as national statistical offices, relevant ministries, academia, research institutes and other entities of UN Member States.

In implementing the various recommendations set forth in this guideline, countries are advised to consider the national regulations and circumstances developed according to international standards.



01 Introduction

Global production of plastic has increased 230-fold from 2 million tonnes in 1950 to 460 million tonnes in 2019 (OECD, 2022b). Consequently, plastic waste generated is also soaring and has more than doubled in the last two decades, from 156 million tonnes in 2000 to 353 million tonnes in 2019 (OECD, 2022b). This growth trend is ongoing. It is expected that in 2060, without progressive new policies, global plastic consumption could be as high as 1.231 billion tonnes (OECD, 2022a).

The growing levels of plastic waste generated have increased the necessity for adequate waste management, as well as reduction of waste from source. It is estimated that of the total plastic waste generated worldwide between 1950 and 2015, only about 9 percent has been recycled worldwide (Geyer et al., 2017). A large amount of plastic waste has not been managed properly and became the main source of plastic leakage into the environment. In 2019, 22 million tonnes of plastic materials are estimated to leak into the environment (OECD, 2022b). The presence of thousands of chemical additives in plastic products also exceeds hurdles the target achievement in plastic recycling, mainly due to concerns regarding the recycling and unknown fate of chemicals of concern in new recycled products (Aurisano et al., 2021).

Because of its versatile properties, plastic is used in all kinds of industries and economic sectors. Plastic is in nearly all aspects of our daily lives, with the vast majority of individuals using it daily. For example, plastic is used both as a packaging material and as a building material, but it is also frequently applied in durable goods, which often have plastic components. There are more than 13,000 chemicals associated with plastics and plastic production, which collectively have a wide range of applications (UNEP, 2023a). As a result, plastic waste can be found in various waste streams. This complexity increases the significance of quantifying the plastics in different product flows to be able to identify plastic waste in different waste streams and further improve plastic waste management.

To improve understanding of plastic's fate and reduce the environmental impact of plastic along the entire life cycle, governments, UN organisations, non-governmental organisations, scientific communities, relevant industries, and many other groups have put in a great deal of effort, from various perspectives. More and more reports and publications are bringing new insights into the status of plastic pollution, possible technical solutions, policy recommendations, etc. Efforts have been made to quantify global plastic production and consumption, plastic emissions into the ocean, national flows of plastic in commodities, etc. (Aurisano et al., 2021; Cottom et al., 2024; Geyer, 2020; Kawecki et al., 2018; Lebreton et al., 2017; OECD, 2018; Plastics Europe, 2019). To mitigate plastic pollution, urgent and coordinated global action is necessary (Lau et al., 2020).

In March 2022, at the resumed fifth session of the UN Environment Assembly (UNEA-5.2), a historic resolution was adopted to develop an international legally binding instrument on plastic pollution, including in the marine environment. The resolution (5/14) asked the Executive Director of the United Nations Environment Programme (UNEP) to convene an Intergovernmental Negotiating Committee (INC) to develop 'the instrument,' which is to be based on a comprehensive approach that addresses plastic's full life cycle, including its production, design, and disposal. The INC began its work during the second half of 2022, with the ambition of completing negotiations by the close of 2024 (UNEP, 2023).

The impact of chemicals, waste, and pollution on human health is also significant. As a result, in May 2023, the seventy-sixth World Health Assembly (WHA76) adopted a resolution on the impact of chemicals, waste, and pollution on human health. Among others, the resolution is emphasizing the cross-cutting nature and relevance of the sound management of chemicals and waste and the prevention of pollution to many of the goals and targets of the 2030 Agenda for Sustainable Development, including for human health, gender equality, nutrition, sustainable consumption and production patterns, climate change, oceans and seas, clean air and water and biodiversity.

1.1 The Necessity of a Global Statistical Guideline on Plastic

Despite these efforts, there are multiple challenges in producing statistics on plastic along the entire life cycle. No global guideline yet exists for producing statistics on plastic from the life cycle of production, consumption, waste collection, waste treatment, and releases into the environment. To produce statistics, clarity on the scoping and definition of plastic across society is needed. The main reasons statistical guidelines are needed are as follows:

- ▶ Each stage of the life cycle uses different classifications and has different datasets in different levels of detail. These variations indicate the need for international agreed-upon correspondence tables between the classification tables, which currently do not exist.
- ▶ Plastic can be used as a component in various products, so it is necessary to trace the embedded plastic in all product flows in order to identify their existence in all the stages throughout the life cycle. There is not yet any guidance on how to classify or quantify plastic embedded in products, which includes not only pure plastic products such as plastic tubes but also products containing plastic, such as laptops.
- ▶ When integrating all statistics and data sources, there may be no unified units of measurement for plastic in statistics. For example, some statistics or datasets are counted in mass (kilogram) while others are counted in number of items, or plastic waste is mixed in with other types of waste. These need to be coaligned with unit weights, waste composition, etc.

To tackle the challenges of producing plastic statistics, and to further understand plastic statistics in different phases throughout the life cycle and support tackling plastic pollution from a statistical perspective, a globally agreed-upon detailed statistical guideline for flows of plastic at the national level is necessary. The main goal of this guideline is to provide guidance to data producers in national statistical offices, waste management authorities, international organisations, academia, or other organisations for producing high-quality statistics on plastic that are comparable at the national, regional, and global levels. Such systemic alignment will facilitate better datasets and understanding of plastic flows to, in turn, facilitate decision-making at national, regional, and global levels that can lead to responsible plastic production and consumption, environmentally sound plastic waste management, and safe and just circularity of plastic.

This version of the statistical guideline, or manual, on plastic provides guidelines on flows of plastic in physical terms. The statistical guideline on plastic is based on internationally agreed-upon concepts, definitions, classifications, and accounting rules. As an accounting system, it enables the organisation of information into tables and accounts in an integrated and conceptually coherent manner. This information can be used to create coherent indicators that can be used to facilitate evidence-based policies and action relating to plastic agendas at the local, national, and global level.

This guideline was designed to cohere with and complement other international statistical standards and recommendations, such as the System of National Accounts 2008 (SNA), the System of Environmental-Economic Accounting Central Framework 2012 (SEEA CF), the Framework for the Development of Environment Statistics (FDES), and the Conference of European Statisticians Framework on Waste Statistics. The guideline also aligns with such statistical classifications as the International Standard Industrial Classification of All Economic Activities (ISIC), the Central Product Classification (CPC), Standard International Trade Classification (SITC), and other classifications, including the European Waste Classification for Statistics, since there is no globally agreed statistical classification of waste. Existing statistical and technical studies on plastic were consulted as well, such as ‘Global trade in plastics: insights from the first life-cycle trade database’ from UNCTAD (Barrowclough, Birkbeck, and Christen, 2020), ‘Secondary raw materials and waste accounting’ from Eurostat (Gonser et al., 2022), and ‘Technical guidelines on the environmentally sound management of plastic wastes’ (UNEP, 2023c).

1.2 Brief Instructions on the Statistical Guideline and How to Start

In the guideline, maximum use has been made of the existing statistical methodologies and available data sources to provide the complete picture of flows of plastic throughout the life cycle. This guideline is structured as follows: Chapter 2 introduces the overall system boundary of plastic’s life cycle, defines key terms and definitions, proposes the structure of supply and use tables for plastic, and introduces the relevant statistical classifications; Chapters 3, 4, and 5 elaborate on the key elements in accounting for plastic supply, plastic use, and plastic waste, respectively; Chapter 6 focuses on potential data sources and units of measurement; Chapter 7 provides a list of core indicators, which can be built via this guideline to support policymakers and plastic-related policies; Chapter 8 presents the prospects for the development of the next version of the statistical guideline.

Developing the full set of plastic statistics throughout the life cycle requires numerous resources, and some portions of the guideline are essential before other parts can be developed. Hence, the guideline is set up modularly. It is recommended that countries embarking on producing plastic statistics work toward developing the core indicators (see Chapter 7.1). The core indicators can capture the overall picture of plastic flows through the life cycle, representing the key elements in each life stage, so they can serve as the basis for policy making. The core indicators can be calculated using the following statistical datasets:

Step 1: Development of datasets on plastic production and consumption:

- ▶ Collecting statistics on production of plastic (see Chapter 3);
- ▶ Collecting statistics on trade of plastic (see Chapter 3 and Chapter 4);
- ▶ Estimating consumption based on the 'apparent consumption' methodology (see Chapter 4).

Step 2: Development of plastic waste datasets (see Chapter 5):

- ▶ Estimating plastic waste generated based on 'product lifetime' methodology;
- ▶ Collecting statistics on plastic waste collection;
- ▶ Collecting statistics on trade of plastic waste and trade of plastic embedded in waste (see Chapter 5).

Optional steps (which can be performed independently):

- ▶ Building physical supply and use tables (PSUT) for plastic. It is recommended that countries with more experience with plastic statistics build PSUT for plastic. More information about PSUT can be found in Chapter 2.3, with a sample of PSUT for plastic provided.
- ▶ Adding polymer type to the datasets in step 1 or 2. Estimating polymer types in different product groups with information in Chapter 6.



02

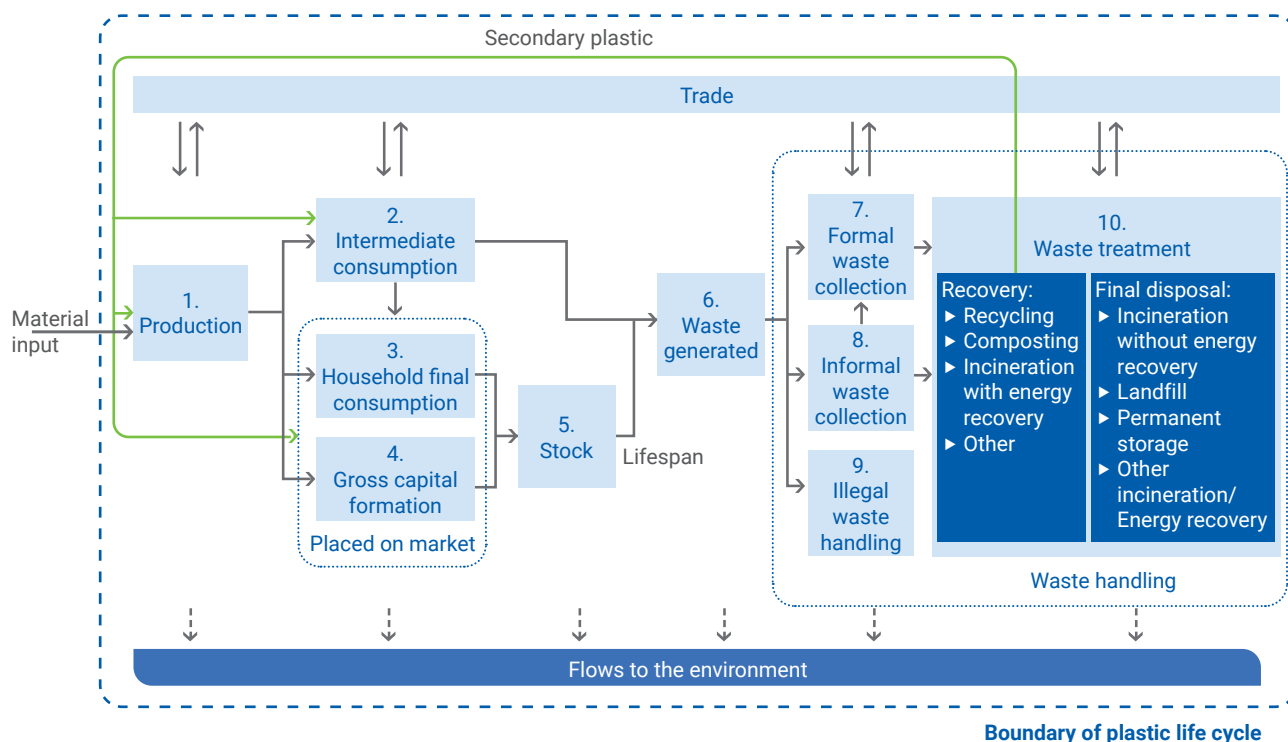
The Physical Flow Accounting Framework for Plastic

2.1 The Scope and Boundary of Plastic's Life Cycle

The plastic life cycle includes all stages or processes, from production of plastic in primary forms to final disposal. The plastic life cycle entails a full range of activities – from extracting raw materials and production to distribution, use, and, ultimately, disposal as waste. Environmental problems may be caused at any stage in plastic's life cycle, inter alia from point source emissions to air, water, and soil from production processes, loss during use, and plastic waste not managed in an environmentally sound manner (UNEP, 2023c).

The plastic life cycle proposed in this framework is presented in Figure 2.1.

Figure 2.1: Proposed measurement framework for the plastic life cycle



Plastic's life cycle begins with raw material extraction. The raw materials for plastic production mainly include crude oil, natural gas, and coal, going through main processes such as a refining process, polymerisation, polycondensation, and compounding. Depending on the polymer types and functionalities, the material inputs for plastic manufacturing are very diverse. The focuses in this guideline are on the activities around the flows of plastic within the economy and on flows to the environment, excluding the material inputs into the economy.

In this guideline, the proposed boundary of the plastic life cycle for the sake of measuring plastic flows is for it to start from plastic in its primary forms. In this framework, the plastic life cycle has been divided into three stages: (1) supply, including production and imports; (2) use, including consumption and exports; and (3) waste. Each stage is built out in more detail in the chapters to follow.

The proposed measurement framework starts with tracking 'production'. Here, production represents:

- ▶ The production of plastic that goes to the 'intermediate consumption';
- ▶ The production of plastic into final goods, which go to:
 - ▶ 'household final consumption' (e.g. clothing consumption from households);
 - ▶ 'gross capital formation' (e.g. equipment purchases from producers).

After the 'production' phase, semi-finished plastic products are consumed by industries as inputs with further processing, and final plastic goods are placed on the market and sold to consumers either as household final consumption or gross capital formation. Consumers can be households, businesses, or public sectors. Before a consumer buys, e.g., a plastic toy from the market, plastic in primary forms (such as pellets, flakes, etc.) are first produced and transported to manufacturers, where they can be further processed into pellets and are eventually molded into toys. After 'consumption', plastic products stay in use for their 'lifespans' until they are disposed of. Plastic products' lifespans can vary significantly and can be expressed as a probability function of time. For instance, the lifespan of a single-use plastic bag could be as brief as a few days, while a plastic toy could stay functional, and remain in use, for years. During the period of plastic products staying in the system, they can be referred to as the 'stock'.

After the product's 'lifespan', it is disposed of and becomes waste, which is referred to 'waste generated'. Waste generated is defined as the annual supply of domestically generated waste prior to collection, and it is an important aspect of plastic waste datasets, as it is the basis for linking production and consumption to waste generation and further mapping waste handling.

Waste handling includes waste management and other waste-related activities (informal and illegal waste handling). Plastic waste management consists of various activities, usually including collection, transport, recovery, and disposal. Plastic waste treatment usually includes recovery (recycling, composting, incineration with energy recovery, etc.) and final disposal (incineration without energy recovery, landfill, permanent storage, etc.) (UNECE, 2022). For example, it includes formal activities that treat plastics into recyclable pellets or controlled incineration for energy recovery. This plastic waste goes into a waste management system; it is collected and treated under local legislation, and the waste-related activities are carried out mostly by formal economic sectors. However, some plastic is treated without consideration of such provisions in the waste management system. In addition to formal waste management, there are also informal waste-handling activities such as waste-picking for sellable parts, which may be sold to formal sectors, but may also stay within the informal sphere. There are also illegal waste-handling activities, such as dumping or illegal handling of plastic waste or hazardous plastic waste that does not undergo the necessary depollution steps.

After recovery, some plastic waste can be diverted and used again in production and consumption (see Figure 2.1); this part of recovered plastic waste can be regarded as secondary plastic. Secondary plastic can be used again as inputs and as substitute for virgin plastic and new plastic products. There are two main types of secondary plastic: (1) reused plastic, and (2) recycled plastic resin in primary form. The use of secondary plastic can reduce the extraction of primary material for plastic production, which is crucial to circularity.

Another complication is that imports and exports may occur during different phases, including production, intermediate consumption, final consumption, waste management, and even illegal waste-handling activities. International trade in different phases needs to be tracked separately.

Most plastic waste management activities nonetheless include flows to the environment. For instance, during production of plastic and during waste management, emissions into the air occur, as the production of plastic requires energy, and during waste management, plastic may be incinerated under suboptimal conditions, leading to emissions. Another example is unmanaged plastic waste, which may lead to the release of plastic into the land or marine environment. More details about plastic waste and waste-related activities are discussed in Chapter 5.

2.2 Terms and Definitions

Because of its versatility, plastic exists in different flows and in different forms. Plastic can be used for packaging, such as plastic bags, which are pure plastic. It can also be used as a component embedded in a product, such as a laptop's plastic keyboard. Thus, the term 'plastic' is not sufficient, in reality, to describe plastic's complexity. Within this guideline for the purpose of calculation of indicators, the following terms and definitions are employed and, as closely as feasible, align with existing standards:

- ▶ Plastic;
- ▶ Plastic in primary forms;

- ▶ Plastic in semi-finished plastic products;
- ▶ Plastic in finished products;
- ▶ Finished plastic products;
- ▶ Plastic-containing products;
- ▶ Plastic embedded in plastic-containing products;
- ▶ Plastic content in products;
- ▶ Lifespan;
- ▶ Plastic waste.

2.2.1 Plastic

Plastic is a term derived from the Latin 'plasticus', which is derived from the Greek 'plastikos'; the term was used to describe materials able to be molded or fit for molding (Plastics Europe, 2018). Plastic is either a synthetic or modified natural material and is either a polymer or combination of polymers of high molecular mass modified or compounded with additives such as fillers, plasticizers, stabilisers, flame retardants, and colourants. Due to plastic's high functionality, it is part of everyday life as part of products we regularly use, either wholly or in part. Plastics addressed in this guideline include thermoplastics and thermosets. Rubber materials are also from the same families of polymers, but rubbers are elastomers, i.e. polymers with an elastic property. This elasticity differentiates rubber from plastic. As well, rubber and plastic have different uses in society. As such, rubber is not covered in the scope of the plastic life cycle. There are different definitions of plastic in current international or national documents (UNEP, 2023c). Per the International Organization for Standardization, plastic is 'a material that contains as an essential ingredient a high polymer and which, at some stage in its processing into finished products, can be shaped by flow (International Standards Organisation (ISO) 2013).

Plastic is currently almost exclusively made from fossil fuels such as crude oil, natural gas, or coal. Plastic is lightweight, with varying degrees of strength and durability; it can be both thermal and electrical insulators and molded in various ways, and they can offer a large range of characteristics and colours achieved through additives. Two broad categories of plastics are thermoplastics which can be melted when heated and hardened when cooled and thermosets which undergo a chemical change when heated and cannot be re-melted and reformed after heated and formed (Plastics Europe, 2018). Plastic is commonly used for packaging, vehicles, building and construction, textiles, electrical and electronic equipment, healthcare equipment, sporting equipment, and energy generation infrastructure (UNEP, 2023c).

2.2.2 Plastic in primary forms

All plastics are essentially polymers, which can eventually be converted and processed, with additives, into plastic goods. The expression 'primary forms' applies to the following:

- ▶ Liquids and pastes, including dispersions (emulsions and suspensions) and solutions;
- ▶ Blocks of irregular shape, lumps, powders (including moulding powders), granules, flakes, and similar bulk forms (European Commission, n.d.).

The Central Product Classification (CPC) version 2.1 considers plastic in primary forms as a product and lists them in Group 347, which includes:

- ▶ Polymers of ethylene, in primary forms;
- ▶ Polymers of styrene, in primary forms;
- ▶ Polymers of vinyl chloride or other halogenated olefins, in primary forms;
- ▶ Polyacetals, other polyethers and epoxide resins, in primary forms; polycarbonates, alkyd resins, polyallyl esters and other polyesters, in primary forms;
- ▶ Other plastics, in primary forms.

2.2.3 Plastic in semi-finished plastic products

Semi-finished plastic products are usually used as input for further manufacturing. They are referred to as being in the 'intermediate consumption' stage, as shown in Figure 2.1, such as plastic tubes, plastic plates, and plastic strips. More specifically, in this guideline, based on CPC version 2.1, semi-finished plastic products include, for example:

- ▶ Group 363 'Semi-manufactures of plastics':
 - ▶ Monofilament of which any cross-sectional dimension exceeds 1mm, rods, sticks and profile shapes, of plastics;
 - ▶ Tubes, pipes and hoses, and fittings therefor, of plastics;
 - ▶ Plastics plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported or similarly combined with other materials;
 - ▶ Other plates, sheets, film, foil and strip, of plastics.

Other groups are also considered in this guideline, including Group 262 'Man-made textile staple fibres processed for spinning'; Group 264 'Textile yarn and thread of man-made filaments or staple fibres'; Group 267 'Woven fabrics (except special fabrics) of man-made filaments and staple fibres'; Group 279 'Textiles n.e.c.'; and Group 355 'Man-made fibres'.

In order to avoid double-counting when calculating the total amounts of plastic in products and monitoring plastic waste, plastic in primary forms and in semi-finished plastic products are considered separate from plastic in finished products for the purposes of this guideline and is not suggested summed, as the same plastic may be reflected in plastic in primary forms, semi-finished plastic products and finished products. A full recommendation list is provided in Annex 1.

2.2.4 Plastic in finished products

Finished products are consumed in the final consumption phase. Plastic in finished products represents all plastic other than plastic in primary forms or plastic in semi-finished plastic products. In this guideline, plastic in finished products is categorised and disaggregated into two mutually exclusive categories: 'finished plastic products' and 'plastic embedded in plastic-containing products'.

Finished plastic products

Finished plastic products are finished products made of plastic, excluding plastic in primary forms and plastic in semi-finished plastic products. The weight percentage of plastic in finished plastic products is 100 percent. More specifically, in this guideline, based on CPC version 2.1, finished plastic products include:

- ▶ Group 364 'Packaging products of plastics':
 - ▶ Sacks and bags, of plastics;
 - ▶ Other articles for the conveyance or packaging of goods, of plastics; stoppers, lids, caps and other closures, of plastics;
- ▶ Group 369 'Other plastics products';
- ▶ Subclass 28243 'Apparel and clothing accessories of plastics (incl. gloves)';
- ▶ Subclass 38703 'Prefabricated buildings, of plastics'.

More details about finished plastic products in CPC codes and SITC codes are presented in Annex 1 and Annex 2.

Plastic-containing products

The finished products that contain plastic and are not included in the category of finished plastic products are referred to as plastic-containing products. They are products in which plastic is used as a component along with other non-plastic materials. For example, office supplies are often made of both metal and plastic; many small plastic parts are part of laptops, which also contain metals and a glass screen; motorcycles contain plastic components, such as fork guards and windscreens, but other materials are also used in motorcycles.

Plastic embedded in plastic-containing products

Plastic embedded in plastic-containing products refers to the amount (i.e. mass) of plastic in plastic-containing products. The plastic embedded in plastic-containing products can range very broadly, and it is sometimes very difficult to determine and construct homogeneous material composition. It is possible for the plastic embedded in a single product type to differ by brand or manufacture time. The section below, 'Plastic content in products', discusses this in greater detail.

Plastic content in products

The plastic content in products represents the mass percentage of plastic in different products. Such a percentage is important in estimating the amount of plastic embedded in products. For some products, such as plastic bags, the plastic content can be as high as 100 percent. However, for a laptop, the plastic content can be lower, around 12 percent, which includes the keyboard, plastic casing, and other components. To more accurately estimate the amount of plastic embedded in a product, knowing the product's plastic percentage is necessary. Surveys of product manufacturing can be a useful data source, and some research has been conducted in this regard (Berge et al., 2023; UNEP, 2022). A draft overview of the plastic content for various finished plastic products and plastic-containing products can be found in Annex 1, Annex 3, and Annex 4. The plastic contents will require ongoing improvement and validation, with periodic updates, as material contents often change over time. It is dynamic and involves with technology development and different geographically.

Lifespan

There are many possible definitions of 'lifespan'. The term could refer to the technical lifespan of a product, or a lifespan may also include the time period during which products remain in use (so, technical lifespan plus storage/hoarding time) (Murakami et al., 2017). In this guideline, the lifespan is the period between the moment the product is placed on the market (consumption) and the discard moment – the end-of-life (EOL) of a product. During a plastic product's lifespan, it stays within the system and accumulates as part of the plastic in-use stock to provide its function and service. When a product's lifespan ends, it is disposed of or discarded. The words 'dispose of' and 'discard' are interpreted as synonyms in this guideline, unless stated otherwise. The lifespan includes dormant time and reuse between a country's households and businesses. Lifespans for finished plastic products and plastic-containing products can differ significantly. More information about lifespan is discussed in Chapter 5.

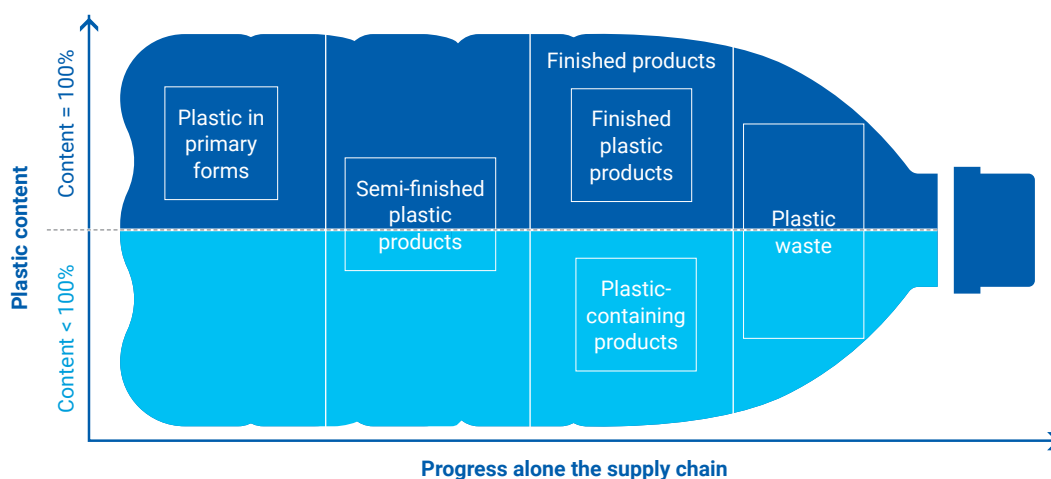
2.2.5 Plastic waste

Waste is defined differently in the policy frameworks, laws, and regulations of various countries and can sometimes be inconsistently defined across a single country's various policies. The CES Framework on Waste Statistics analysed various definitions of waste, including those in the Basel Convention, and proposed the following conceptual definition: 'Waste is any material which the holder discards or intends or is required to discard' (UNECE, 2022). Based on the conceptual definition of waste proposed in the CES Framework on Waste Statistics, plastic waste is defined as plastic in primary forms, semi-finished plastic products, finished plastic products, or plastic embedded in plastic-containing products, which the holder discards, intends to discard, or is required to discard.

The terms discussed above and their plastic content are presented in Figure 2.2. Plastic in primary forms and most of the semi-finished plastic products consist of plastic. In finished products, the category finished plastic products consists of plastic, while plastic-containing products are made from plastics together with other materials. Depending on the product flows, plastic waste can come from finished plastic products, or plastic-containing products, or even during the manufacturing processes, so the plastic content in plastic waste can be very diverse. More information is provided in Table 2.3, Chapter 2.4.

The model proposed to estimate the amount of plastic waste is discussed in detail in Chapter 5.1. It should be noted that the proposed model in this guideline is for estimating plastic waste generated. The measurement of emissions of microplastics and nanoplastics is not yet determined as of this guideline. Relevant information about plastic's impact on the environment can be found in Chapter 5.4.

Figure 2.2: Key plastic related terms and their plastic content



2.3 Flows of plastic through the System of Environmental-Economic Accounting

The System of Environmental-Economic Accounting is a multipurpose statistical system that describes the interactions between the economy and the environment. The System of Environmental-Economic Accounting 2012 - Central Framework (SEEA CF), adopted in 2012 by the United Nations Statistical Commission as an international statistical standard, describes the stocks and changes in stocks of environmental assets. Using a wide range of information, the SEEA CF, through its structure, enables source data to be compared and contrasted and allows for the development of aggregates, indicators, and trends across a broad spectrum of environmental and economic issues (United Nations, 2014).

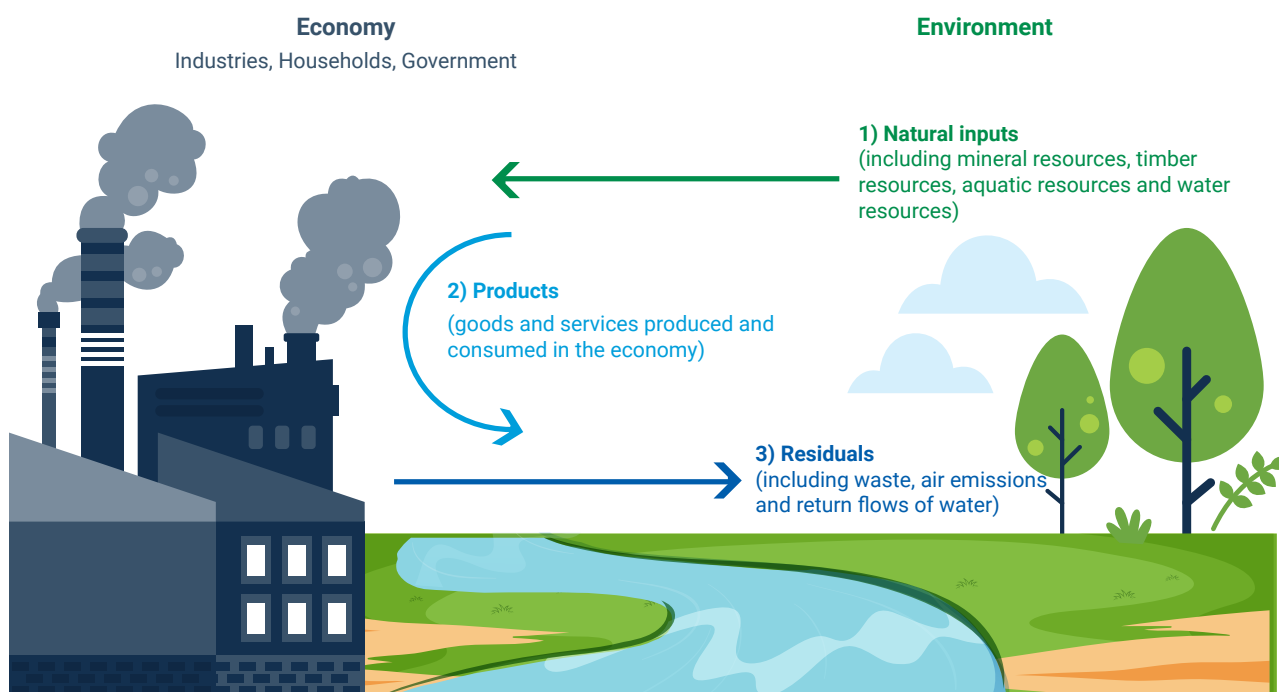
The key features of the SEEA CF are as follows:

- ▶ The SEEA CF applies the accounting concepts, structures, rules, and principles of the SNA to environmental information. In general, the SEEA CF is consistent with the SNA, with some limited differences, given the specific analytical focus of the SEEA CF on the environment and its linkages with the economy, as well as its focus on the measurement of stocks and flows in physical and monetary terms.
- ▶ The SEEA CF has the capacity to organise physical and monetary data that have common scope, definitions, and classifications into combined presentations.
- ▶ The SEEA CF can be implemented with flexibility. Its design is such that it can be implemented equally well in part or as a whole. This also applies when countries build the physical supply and use tables for plastic of their own.

As an international statistical standard for measuring the environment and its relationship with the economy, the SEEA CF measures three main areas: environmental flows, stocks of environmental assets, and economic activity related to the environment.

In turn, environmental flows cover: 1) flows from the environment into the economy as natural inputs, 2) flows within the economy as product flows, and 3) flows from the economy to the environment as residuals, as illustrated in Figure 2.3.

Figure 2.3: Physical flows of natural inputs, products, and residuals



The measurement boundary that is used to distinguish between these flows is defined by the production boundary described in the SNA. As a corollary, the products' definition aligns to the SNA definition of products as being those goods and services created through a production process and having economic value.

Also, from a geographical perspective, the measurement boundary for flows aligns to the economic territory of a country as defined in the SNA, and economic activity is attributed based on the residence of economic units rather than on the location of the economic units at the time of their production, consumption, or accumulation. The economic territory is comprised of a country's land area, including islands, airspace, territorial waters, and territorial enclaves in the rest of the world. Economic territory excludes territorial enclaves of other countries and international organisations located in the reference country (United Nations, 2014).

To describe the flows of plastic throughout the life cycle from a statistical perspective, the concept of flow accounts through the physical supply and use tables from the SEEA CF can be used, since plastics' life cycle covers the process from the extraction of natural resources to the production of products, and then their consumption and disposal, as well as the sources of plastic pollution in the environment.

An advantage of the SEEA CF is its capacity to present information in both physical and monetary terms. This guideline describes measurement of flows of plastic in physical terms. The physical supply and use tables for plastic are represented in Table 2.1 on the next page.

Physical supply and use tables (PSUT) for plastic contain information about supply and use of plastic and provide an overview of flows of plastic. The PSUT for plastic are divided into three sections that organise information on (a) extraction of natural resources from the environment to produce plastic; (b) production and consumption of plastic, including plastic in primary forms, semi-finished plastic products, and plastic in finished products; and (c) residues of plastic, presented by waste and plastic pollution.

Extraction of natural resources to produce plastic is not covered in this version of the guideline, due to insufficient information; it will be discussed in detail in the follow-up version. A more complete PSUT with natural resources extraction would be necessary to provide a more complete conceptual perspective on plastic flows. In practice, though, building such PSUT can be difficult and challenging.

The physical supply and use tables in Table 2.1 do not contain the other inputs to plastic production processes, such as additives and colourants, whose mass percentage in the products can range widely. The presence of such additives and colourants in plastic products may lead to imbalances in the PSUT columns. Countries can include balancing elements in their PSUT as a way of dealing with additives and colourants.

Production and consumption of plastic is discussed in Chapter 3 and Chapter 4; and residuals of plastic are discussed in Chapter 5.

In the compilation of PSUT, an important factor is the use of consistent classifications for the main economic units and products. The breakdown of the industries in the PSUT for plastic are classified according to the International Standard Industrial Classification of All Economic Activities (ISIC) and distinguishes between the following groups:

- ▶ ISIC Division 20 'Manufacture of chemicals and chemical products';
- ▶ ISIC Division 22 'Manufacture of rubber and plastics products';
- ▶ ISIC Division 38 'Waste collection, treatment and disposal activities; materials recovery';
- ▶ ISIC Divisions 01-19, 21, 23-37, and 39-99: Other industries.

Divisions 20, 22, and 38 are specifically identified because of their importance in the supply and use of plastic.

Other industries can be presented in more detail by highlighting the following ISIC divisions:

- ▶ ISIC Division 10 'Manufacture of food products';
- ▶ ISIC Division 11 'Manufacture of beverages';
- ▶ ISIC Division 26 'Manufacture of computer, electronic and optical products';

Table 2.1: Physical supply and use tables for plastic

Physical supply table for plastic

	Production (including household production on own account); generation of residuals						Accumulation	Flows from the rest of the world	Flows from the environment	Total supply
	Manufacture of chemicals and chemical products	Manufacture of rubber and plastic products	Waste collection, treatment, and disposal activities; materials recovery	Other industries	Households					
Natural inputs										
Products: Plastic in primary forms										
Products: Semi-finished plastic products										
Products: Total plastic in finished products										
Finished plastic products										
Packaging										
Transport										
Building and construction										
Electrical and electronic equipment										
Consumer and institutional products										
Industrial machinery										
Apparel and textile furnishing articles										
Other										
Plastic embedded in plastic-containing products										
Packaging										
Transport										
Building and construction										
Electrical and electronic equipment										
Consumer and institutional products										
Industrial machinery										
Apparel and textile furnishing articles										
Other										
Plastic waste										
of which leakages from different stages of life cycle										
Total supply										

Physical use table for plastic

	Intermediate consumption; use of residuals				Final consumption		Accumulation	Flows to the rest of the world	Flows to the environment	Total use
	Manufacture of chemicals and chemical products	Manufacture of rubber and plastic products	Waste collection, treatment, and disposal activities; materials recovery	Other industries	Households	Exports				
Natural inputs										
Products: Plastic in primary forms										
Products: Semi-finished plastic products										
Products: Total plastic in finished products										
Finished plastic products										
Packaging										
Transport										
Building and construction										
Electrical and electronic equipment										
Consumer and institutional products										
Industrial machinery										
Apparel and textile furnishing articles										
Other										
Plastic embedded in plastic-containing products										
Packaging										
Transport										
Building and construction										
Electrical and electronic equipment										
Consumer and institutional products										
Industrial machinery										
Apparel and textile furnishing articles										
Other										
Plastic waste										
of which leakages from different stages of life cycle										
Total use										

- ▶ ISIC Division 27 'Manufacture of electrical equipment';
- ▶ ISIC Division 28 'Manufacture of machinery and equipment n.e.c.'.

At the same time, it is important to remember that the relevant columns of PSUT should only reflect plastic related flows. For example, in column relevant to ISIC Division 22 'Manufacture of rubber and plastics products', only manufacture of plastics products is included.

From a product perspective, plastics are classified using the Central Product Classification (CPC) with reference to the Standard International Trade Classification (SITC) and other classification systems, as needed. Additional information is presented in Chapter 2.4 and other relevant chapters in the guideline.

In accordance with the SEEA CF, the PSUT for plastic contain a range of important accounting and balancing identities. The starting point for balancing the PSUT is the supply and use identity, which recognises that, within the economy, the amount of a product supplied must also be used within the economy, most likely by a range of different economic units, or exported (United Nations, 2014).

Supply and use identity for plastic flows within the economy is comprised of:

$$\text{Total supply of products} = \text{Production} + \text{Imports} \quad [1]$$

is identical to

$$\begin{aligned} \text{Total use of products} = & \text{Intermediate consumption} + \text{Household final consumption} \\ & + \text{Gross capital formation} + \text{Exports}, \end{aligned} \quad [2]$$

where:

- ▶ Production represents plastic produced by industries in the national economy.
- ▶ Imports represent plastic brought in from the rest of the world.
- ▶ Intermediate consumption consists of plastic used by other industries to make different products.
- ▶ Household final consumption consists of plastic used by households to satisfy their individual or collective needs or wants.
- ▶ Gross capital formation of plastic mainly involves the plastic embedded in fixed assets, such as machinery, equipment, building, or other structures, which are used repeatedly or continuously in production over several accounting periods (more than one year) (European Commission et al., 2009).
- ▶ Exports represent plastic sold to the rest of the world.

In this guideline, products are represented by three separate flows: (1) Plastic in primary forms, (2) Semi-finished plastic products, and (3) Total plastic in finished products, which in turn includes finished plastic products and plastic embedded in plastic-containing products. These three separate flows are proposed to meet policy needs while nonetheless avoiding double-counting. For example, plastic in primary forms produced in country A can be consumed by manufacturers within that country to produce finished plastic products. In such a case, when totalling the plastic in primary forms and the finished plastic products, the amount of plastic in primary forms is counted twice. Accordingly, the supply and use identity must be applied to each of these three flows of products separately.

In the PSUT for plastic, the supply and use identity is also applied to flows of natural inputs and waste, i.e. the total supply of natural inputs must equal the total use of natural inputs, and the total supply of waste must equal the total use of waste.

Some countries have already begun building flow accounts for plastic at the national level. Examples are provided in Box 1.

Box 1: National experience on physical flow account for plastic

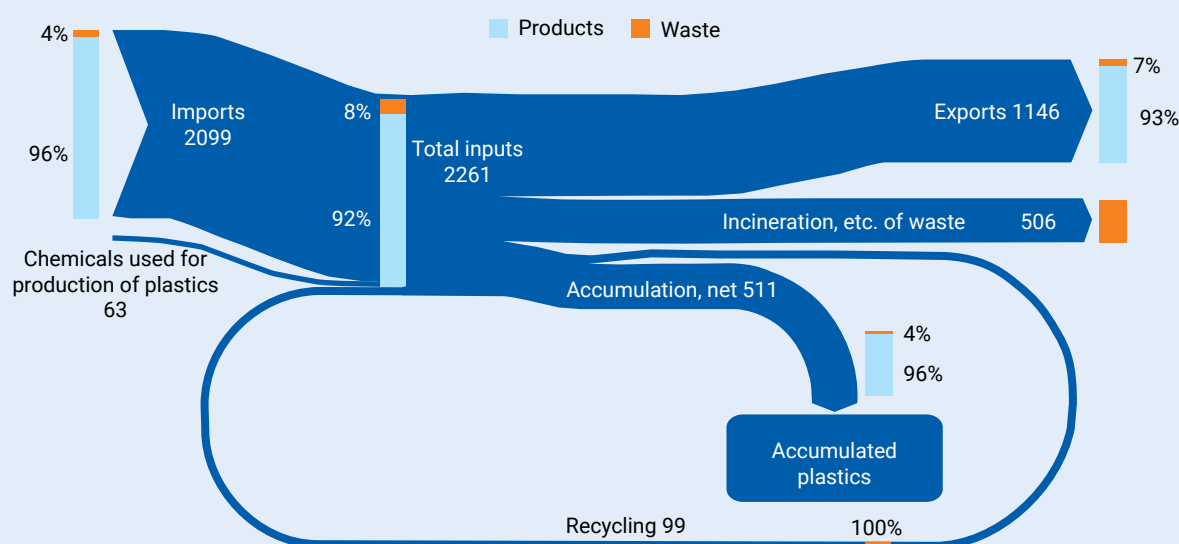
Denmark: Statistics Denmark has used the SEEA Central Framework and physical supply-use table (PSUT) methodologies to quantify and map all flows of plastic of the Danish economy in 2016. All types of plastic products and waste are included in the Danish supply-use tables for plastic. The tables include approximately 40 primary and processed plastic products, 480 groups of plastic-containing products, three types of separately collected plastic waste, and 14 types of mixed waste. Economic activities by industries and households, etc. are classified according to the national accounts' classification of activities, which at the most detailed level include 117 industries. The Sankey diagram in Figure 2.4 summarises the main aggregated flows according to the Danish PSUT for plastic.

The dominant source of plastic in the Danish economy is imports, which amounted to approximately 2.1 million tonnes in 2016. This includes primary plastics (e.g. ethylene, propylene, and polyether), processed plastics (e.g. plastic tubes, plates, and packaging material), plastics in plastic-containing products (e.g. motor vehicles, paint, and household appliances) and a minor amount of plastic in waste. Approximately 60,000 tonnes of primary plastics were produced in Denmark from inputs of various types of chemicals. As well, 99,000 tonnes of plastic waste were recycled in Denmark, thereby contributing to reducing the imports and Danish production of primary plastics.

Of the 2.3 million tonnes of plastic used in the Danish economy in total, 1.1 million tonnes left the country again through exports. Of that exported plastic, 7 percent (78,000 tonnes) consisted of exports of separately collected plastic waste or plastics in mixed waste parts. 0.5 million tonnes of plastic ended up in air emissions through waste incineration. Finally, a similar amount, corresponding to almost one-fourth of the total use of plastic, was accumulated in the economy. The accumulation of plastic is linked mainly to durable goods such as cars, machineries, equipment, and various building materials.

More results and information on the methodology used for the Danish physical supply and use tables for plastic can be found in [Accounts and indicators for Danish plastic flows](#).

Figure 2.4: Danish flows of plastic 2016 (1000 tonnes)

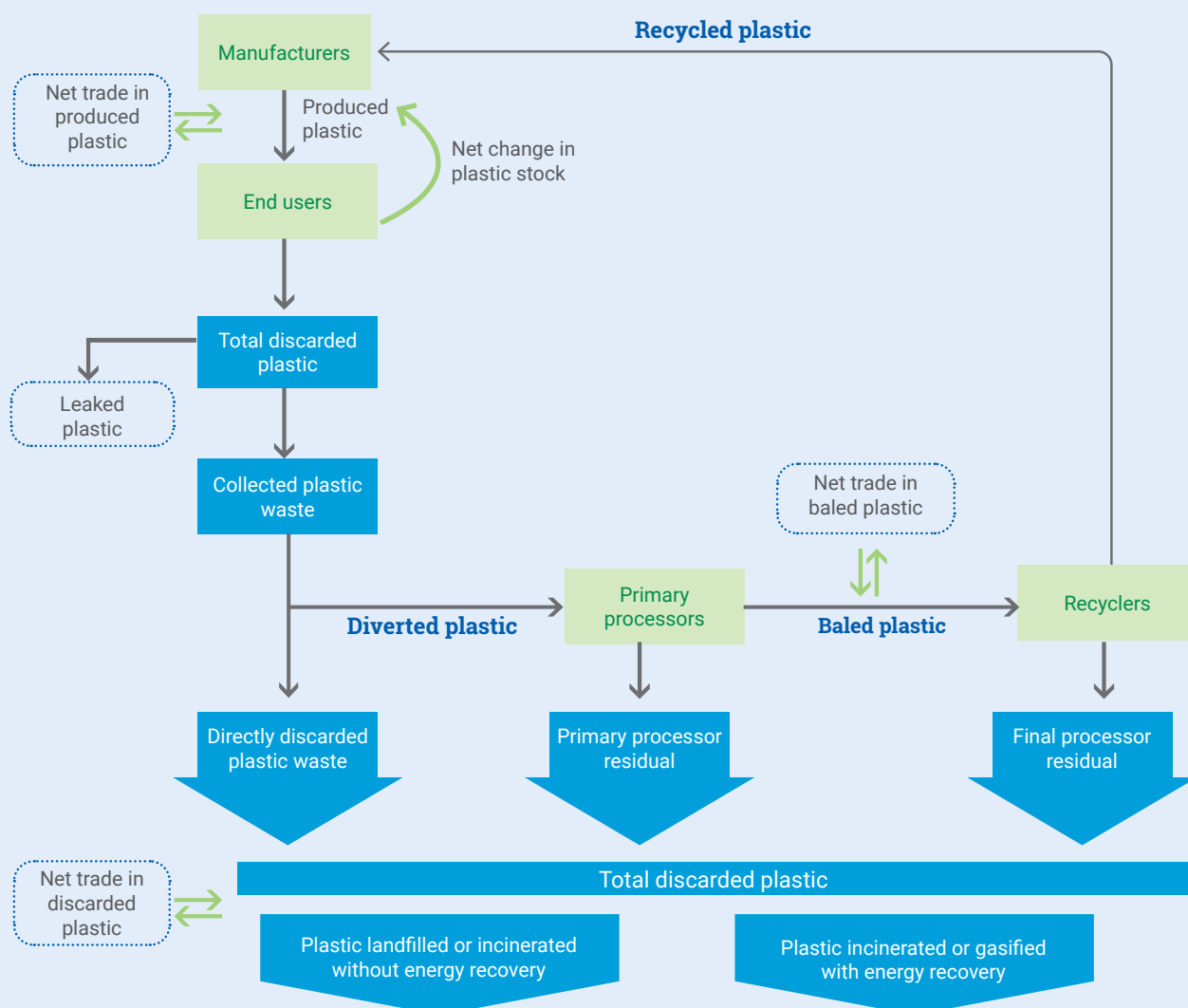


Canada: The physical flow account for plastic material (PFAPM) was created by Statistics Canada in collaboration with Environment and Climate Change Canada to support the Government of Canada's Zero Plastic Waste Agenda. Statistics Canada released its first analytical article and publicly available tables for the PFAPM in March 2022. The PFAPM is a detailed account, including 18 variables that describe the production and fate of plastic products in the Canadian economy. Statistics Canada published two tables – both presented in metric tonnes – one that includes 14 product types by Canada's 13 regions called provinces and territories, and the other that includes 19 resin types at the national level.

As of March 2024, Statistics Canada's time series covered reference years 2012-2020. The compilation of the PFAPM, which contains thousands of data points, requires the use of Statistics Canada's Supply and Use Tables and several surveys, as well as many different administrative data sources. Statistics Canada currently provides information about the mass of plastic in products produced for Canadian consumption, as well as information

about what happens to such plastic once it is discarded (e.g. whether it is diverted for material recovery, baled, recycled into pellets or flakes ready for use in new products, sent to landfills or burned with or without energy recovery, etc.; Figure 2.5). While Statistics Canada is able to provide information about the mass of recycled plastic produced each year, they are not yet able to provide estimates for trade in recycle resin and/or about how much recycled plastic resin goes into the manufacturing of new products each year.

Figure 2.5: Structure of the physical flow account for plastic material, applied in Canada



Links:

- [Physical flow account for plastic material, 2020](#) (Article in Statistics Canada's publication, The Daily.)
- [Table 38-10-0150-01: Physical Flow Account for Plastic Material, by product category](#)
- [Table 38-10-0151-01: Physical flow account for plastic material, by resin](#)
- [Link to the metadata document](#), which gives more information about how the accounts are compiled

Note: The tables can be expanded using the 'Add/Remove data' button at the top of the screen. For example, the tables contain significantly more data than what is present in the initial view. One can click on the checkmark beside all the geographies/Variables/Resins/Reference periods of interest while flipping through the various tabs and then click the 'Apply' button for the changes to take effect. The 'Download options' button allows readers to save the data to use/analyse in whichever program is chosen. Either the whole table or a particular subset can be downloaded.

2.4 Classifications to Support Plastic Statistics

Various international, regional, and national statistical classifications can be used to generate statistics on plastic. Some go-to international and regional statistical classifications are as follows:

International Standard Industrial Classification of Economic Activities (ISIC) Rev. 4

The International Standard Industrial Classification of Economic Activities (ISIC) is the international reference classification of productive activities. Its main purpose is to provide a set of activity categories that can be utilised for the collection and reporting of statistics according to such activities. Since the adoption of the original version of ISIC in 1948, ISIC has provided guidance to countries in developing national activity classifications and has become an important tool for comparing statistical data on economic activities at the international level. Wide use has been made of ISIC, both nationally and internationally, in classifying data according to the kind of economic activity in the fields of economic and social statistics, such as for statistics on national accounts, demography of enterprises, employment, and others. This fourth revision of ISIC (ISIC, Rev. 4) is more detailed than the previous version, responding to the need to identify many new industries separately (UNSD, n.d.).

In ISIC Rev. 4, some divisions are more relevant for plastic PSUT than others, such as Division 20 'Manufacture of chemicals and chemical products', Division 22 'Manufacture of rubber and plastics products' in Section C 'Manufacturing' for production, and Division 38 'Waste collection, treatment and disposal activities; materials recovery' in Section E 'Water supply; sewerage, waste management and remediation activities' for waste management.

Central Product Classification (CPC) version 2.1

The Central Product Classification (CPC) is a framework for international comparison of statistics on goods, services, and assets. It constitutes a complete product classification covering goods and services, serving as an international standard for assembling and tabulating all kinds of data requiring product detail, including industrial production, national accounts, service industries, domestic and foreign commodity trade, international trade-in services, balance of payments, consumption, and price statistics. Statistics based on CPC version 2.1 are useful in studying transactions in goods and services in detail and as a basis for developing lists of goods and services for specific purposes, such as price statistics surveys. It has broad acceptance as an international standard and facilitates the maintenance of constant categories of products (UNSD, n.d.). As a general-purpose classification, CPC provides less detail than other specific classification systems.

In CPC version 2.1, 'Plastics in primary forms' (group 347) in Division 34 'Basic chemicals', as well as 'Semi-manufactures of plastics' (group 363), 'Packaging products of plastics' (group 364), and 'Other plastics products' (group 369) in Division 36 'Rubber and plastics products' are most relevant for production. More information on the use of CPC codes for flows of plastic is provided in Annex 1.

Standard International Trade Classification (SITC) Rev. 4

The Standard International Trade Classification (SITC) is a product classification of the United Nations used for external trade statistics (export and import values and volumes of goods), allowing for international comparisons of commodities and manufactured goods. Many countries and national and international organisations continue to use SITC for various purposes, such as for the study of long-term trends in international merchandise trade and aggregation of traded commodities into classes more suitable for economic analysis.

There are SITC Rev. 4 codes for international trade of plastic in primary forms, semi-finished plastic products, and finished plastic products, imported and exported, respectively. More information on using SITC codes for flows of plastic is provided in Annex 2.

Harmonized Commodity Description and Coding System (HS)

The Harmonized Commodity Description and Coding System (HS) is an international nomenclature for the classification of products. It allows participating countries to classify traded goods on a common basis for customs purposes. At the international level, the HS for classifying goods is a six-digit code system, which is comprised of approximately 5,300 article/product descriptions. Foreign trade (import and export) statistics for each product are registered under the Harmonized Commodity Description and Coding System developed by the World Customs Organization (UNSD, 2023).

Both SITC and CPC can be linked to HS classification. The integrated system makes it possible to compile the data from different statistical frameworks and categories. The compiled data can be found at the Comtrade database (United Nations, n.d.), published by the United Nations Statistics Division and covering approximately 200 countries. More information on using HS is provided in Annex 3 and Annex 4.

UNCTAD (UNCTAD, n.d.) – jointly with the Forum on Trade, Environment & the SDGs (TESS) at the Geneva Graduate Institute – has developed an initial classification of plastic products by identifying trade in plastics across five stages of the plastic life cycle within the HS codes. This classification is refined with each review of the HS codes and is open for feedback, for further enhancement. In its current form, it enables the aggregation of trade in plastics according to primary plastic, intermediate forms of plastic, intermediate manufactured plastic products, final manufactured plastic products, and plastic waste. The resulting data, aggregated based on UN Comtrade database, is released regularly in the UNCTADstat Data Centre and is available here: <https://stats.unctad.org/plastics>. The boxes provided by UNCTAD in this document follow this UNCTAD classification.

It should be noted that the UNCTAD classification's scope differs from that of this guideline. For plastic in primary forms, the UNCTAD classification includes the HS 4002 subitems under 'Synthetic rubber and factice derived from oils, in primary forms or in plates, sheets or strip', which is excluded herein. For the category of semi-finished plastic products in this guideline, with a smaller scope as intermediate forms of plastic and intermediate manufactured plastic products in the UNCTAD classification doesn't include the HS codes related to synthetic yarn and fibres listed in the UNCTAD classification. This guideline doesn't include rubber-related products for finished plastic goods but has a broader scope, including finished plastic products and plastic-containing products in different economic sectors. More information about the coverage of finished products is provided in the section below titled 'Plastic-KEYs developed by UNITAR'.

Additional classifications recorded in the international family of classifications and other thematic classifications:

European List of Waste (LoW)

The European List of Waste (LoW) is the waste classification in the EU for administrative purposes, i.e. for permitting and supervision in the field of waste generation and management. The LoW defines 839 waste types structured into 20 chapters, mainly according to the waste's source (i.e. the economic sector or process of origin). Each waste type is characterised by a six-digit code. The allocation of wastes to the defined waste types is articulated in the introduction of Decision 2000/532/EC (EUROSTAT, 2010).

There are eight LoW codes that refer to plastic waste, as shown in Table 2.2. The codes refer to non-hazardous waste.

Table 2.2: The European List of Waste (LoW) codes that refer to source-separated plastic waste

LoW code	LoW code description	EWG-Stat code
15 01 02	Plastic packaging	W074 Plastic wastes
02 01 04	Waste plastics (except packaging) (from 02 01: wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing)	
07 02 13	Waste plastics (from 07 02: wastes from the MFSU of plastics, synthetic rubber and man-made fibres)	
12 01 05	Plastics shavings and turnings (from 12 01: wastes from shaping and physical and mechanical surface treatment of metals and plastics)	
16 01 19	Plastics (from 16 01: end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08))	
17 02 03	Plastics (from 17 02: wood, glass and plastics from construction and demolition wastes (including excavated soil from contaminated sites))	
19 12 04	Plastics and rubber (from 19 12: wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified)	
20 01 39	Plastics (from 20 01: separately collected fractions (except 15 01) of municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions)	

Source: (EUROSTAT, 2010)

European Waste Classification for Statistics (EWC-Stat) version 4

The EWC-Stat is mainly a substance-oriented aggregation of the waste types defined in the LoW. The result is a 1:n-relationship between EWC-Stat and LoW that allows for the unambiguous conversion of waste types classified according to the List of Wastes into the EWC-Stat waste categories. Whereas the Waste Statistics Regulation stipulates that the EWC-Stat must be used for the reporting of data to Eurostat, it does not prescribe a specific classification to be used for data collection. Countries are free to use any waste classification so long as they can produce the defined formats in the required quality. In practice, most countries collect their data according to the List of Waste and then convert the data into the required EWC-Stat-categories. The direct use of the EWC-Stat for data collection is applied by only a few countries (EUROSTAT, 2010).

W074 'Plastics wastes' is the EWC-Stat category for plastics wastes that are source-separated. Other waste categories can also contain plastics. Annex 5 lists the EWC-Stat waste categories with significant plastic content corresponding to the Plastic-KEYs (which is introduced in the last part of this Chapter).

Plastic-KEYs developed by UNITAR

As discussed in Chapter 2.2, finished products include finished plastic products consisting of plastic and plastic-containing products in which plastic is used as a component together with other non-plastic materials. The amount of plastic used to produce the finished plastic products can easily be measured with the weight of plastic products when manufacturing losses are not taken into consideration. However, estimating the amount of plastic used to produce plastic-containing products can be very complex and difficult because of the diverse products and their plastic contents. In practice, more finished products fall in the category of plastic-containing products than finished plastic products.

To be able to measure the amount of plastic embedded in plastic-containing products, UNITAR has developed 'Plastic-KEY'. This concept was introduced in the 'Practical guidance on the development of inventories of plastic waste' (UNEP, 2022), developed under the Basel Convention, based on technical input from UNITAR. Plastic-KEY is a classification system to help compile plastic statistics and map links between plastic consumption and waste management. As a classification system, Plastic-KEY is constructed such that products in one Plastic-KEY share:

- ▶ Similar function, comparable material composition, and related end-of-life attributes;
- ▶ Homogenous average weight and lifetime distribution.

The Plastic-KEYs can be aggregated into eight Plastic-KEY Groups (UNEP, 2022):

- ▶ P1 'Packaging';
- ▶ P2 'Transport';
- ▶ P3 'Building and construction';
- ▶ P4 'Electrical and electronic equipment';
- ▶ P5 'Consumer and institutional products';
- ▶ P6 'Industrial machinery';
- ▶ P7 'Apparel and textile furnishing articles';
- ▶ P8 'Other'.

The groups are organised around the largest plastic-related 'product groups'. All Plastic-KEYs and Plastic-KEY Groups are listed in Table 2.3.

According to UNITAR's previously developed UNU-KEYS (Wang et al., 2012, Forti et al., 2018), such a classification system can be very helpful for compiling waste statistics; serving as a link between data collection of various parameters, such as consumption of products; and waste collection in practice, material composition, lifespans, etc. Plastic-KEYs can be employed statistically in several ways. First, it can be used to collect statistical data on consumption on the market. The consumption can be calculated through the apparent consumption methodology, which is further explained in Chapter 4.1. The Plastic-KEYs can link to existing domestic production and trade statistics, which are the data sources for applying the apparent consumption methodology. The correlation between Plastic-KEYs, CPC codes for domestic production, and HS codes for trade statistics is listed in Annex 1, Annex 3, and Annex 4 (for Plastic-KEY group P4 'Electrical and electronic equipment'). Second, because of the homogeneous material composition within each category, the Plastic-KEYs can help estimate the amount of different polymer types in each category and each economic sector. Thus, the link between primary plastic and products containing plastic on the market can be explored. As well, plastic waste generated from each category can also be modelled and assessed with material flow analysis, where the main inputs are plastic consumption in different categories and the lifespans of finished plastic products and plastic-containing products. The methodology is explained in Chapter 5. The estimated plastic waste generated can even include the information of polymer types in each waste flow using the Plastic-KEYs.

Table 2.3: Detailed description of the Plastic-KEYs

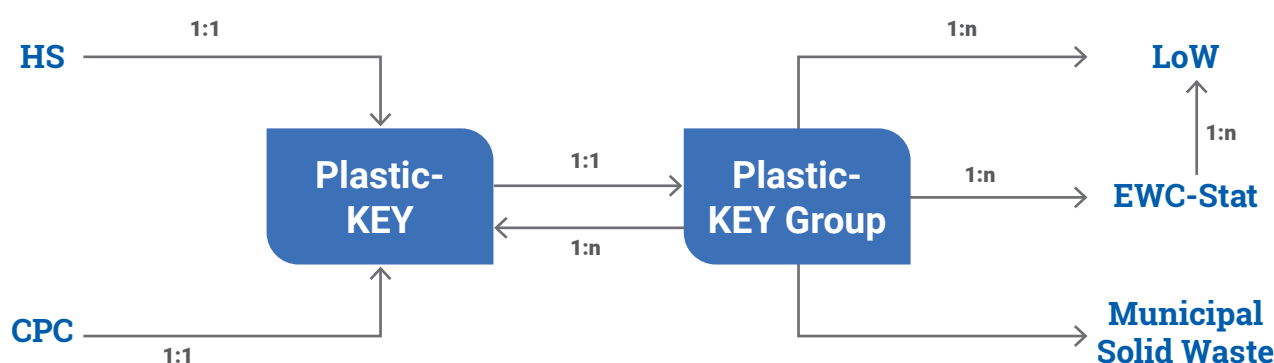
Plastic-KEY group	Plastic-KEY	Description
P1 Packaging	P101	Boxes, cases, crates, and similar packing articles made of plastic
	P102	Plastic sacks and bags
	P103	Juices
	P104	Waters
	P105	Soft drinks
	P106	Oil
	P107	Cosmetic, toilet, hair, oral, or dental hygiene preparations
	P108	Food preparations
P2 Transport	P201	Locomotives
	P202	Railway or tramway coaches, self-propelled
	P203	Railway or tramway goods vans and wagons, not self-propelled
	P204	Tractors
	P205	Public transport-type passenger motor vehicles
	P206	Passenger cars
	P207	Trucks
	P208	Special-purpose motor vehicles n.e.c.
	P209	Fork-lift trucks and other work trucks; tractors of the type used on railway station platforms
	P210	Tanks and other armoured fighting vehicles, motorised, and parts thereof
	P211	Motorcycles
	P212	Bicycles
	P213	Wheelchairs
	P214	Trailers and semi-trailers of the caravan type, for housing or camping
	P215	Balloons and dirigibles; gliders, hang gliders and other non-powered aircraft
	P216	Helicopters, aeroplanes, and other powered aircraft
	P217	Spacecraft and spacecraft launch vehicles
	P218	Large ships and vessels
	P219	(Intentionally empty) (to be updated later)
	P220	Vessels for pleasure and sport
	P221	Other vessels
	P222	Rafts, tanks, coffer-dams, landing stages, buoys, beacons, and other floating structures
	P223	Other vehicles

Plastic-KEY group	Plastic-KEY	Description
P3 Building and Construction	P301	Tubes, pipes and hoses, and fittings therefor, of plastics, used in construction sector
	P302	Floor coverings of plastics, wall or ceiling coverings of plastics
	P303	Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics
	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector
	P305	Other plates, sheets, film, foil and strip, of plastics, used in construction sector
	P306	Plastics sanitary ware (baths, wash-basins, etc.)
	P307	Other builders' ware of plastics n.e.c.
	P308	Other construction-related plastics
P4 Electrical and Electronic Equipment	P4*	These are mostly electronic and electrical equipment and could be gathered through the guidelines of e-waste statistics, through the UNU-KEYs. See the Annex 4 for more information about the UNU-KEYs, and for further information, see 'E-waste Statistics Guidelines on Classification Reporting and indicators' (Forti et al., 2018).
P5 Consumer and institutional products	P501	Household articles and toilet articles, of plastics
	P502	Office or school supplies
	P503	Umbrellas, sun-umbrellas, walking-sticks, seat-sticks and the like
	P504	Furniture
	P505	Non-electrical lamps and lighting fittings
	P506	Luggage, handbags, travel sets, and similar articles
	P507	Glasses
	P508	Lighters and smoking pipes
	P509	Brooms, brushes, and artificial flowers
	P510	Non-electric toys
	P511	Sporting balls and other sport equipment
	P512	Wigs, false beards, eyebrows and eyelashes, and the like
	P513	Festival, carnival, or other entertainment articles
P6 Industrial Machinery	P6*	Further detailing will be developed
P7 Apparel and textile furnishing articles	P701	Wearing apparel
	P702	Make-up textile articles other than apparel
	P703	Apparel and clothing accessories of plastics (incl. gloves)
	P704	Carpets and other floor coverings
	P705	Artificial fur; articles thereof
P8 Other	P801	Plastic statuettes and other ornamental articles
	P802	Monopods, bipods, tripods, and similar articles
	P803	Medical and pharmaceutical goods
	P804	Hand tools
	P805	Tailors' dummies and other lay figures, automata, and other animated displays used for shop window dressing
	P806	Photographic plates and film and instant print film
	P807	Illuminated signs
	P808	Fishing nets
	P809	Other articles

Notably, some semi-finished plastic products are included in Plastic-KEY group P3 'Building and construction'. This inclusion is to decrease the uncertainties of estimating the plastic directly embedded in construction and to be able to collect the trade data associated with building and construction. It is a way to include the plastic embedded in building and construction, not to include the full amount of the involved categories of semi-finished plastic products. For each semi-finished plastic product category, a certain percentage is assumed as their usage in the building and construction sector. More details are provided in Annex 1 and Annex 3.

Figure 2.6 maps the correlations between various classifications, presenting links between the Plastic-KEY and other classification systems and further guiding data gathering and dissemination. The arrows' ratios represent the relationships between the two involved classifications, from the arrow origin to the arrow end. For example, the arrow from Plastic-KEY Group pointing to Plastic-KEY means that there are multiple corresponding Plastic-KEYs to one Plastic-KEY Group. Similarly, the 1:n on the arrow from Plastic-KEY Group pointing to EWC-Stat means that there are several EWC-Stat waste categories corresponding to one Plastic-KEY Group. Specifically, Plastic-KEY Group P1 'Packaging' can be collected separately as packaging waste or plastic waste, which corresponds to category W074 'Plastics wastes'; it can be collected in mixed municipal waste, waste from markets, or street-cleaning residues, or can be embedded in bulky waste, which corresponds to category W101 'Household and similar wastes'. It can also be collected in mixed packaging waste, which corresponds to category W102 'Mixed and undifferentiated materials'. More information on the links between Plastic-KEY and EWC-Stat categories can be found in Annex 5.

Figure 2.6: Correlations between various classifications for gathering and disseminating data for plastic waste statistics



Classifications can also be proposed within broader initiatives, focusing on more than merely statistical purposes. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal is such an example:

Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal regulates the transboundary movements of hazardous wastes and other wastes and provides for such wastes to be managed and disposed of in an environmentally sound manner. The overarching objective of the Basel Convention is to protect human health and the environment against the adverse effects of hazardous wastes. The Convention provisions apply to hazardous wastes and other wastes as defined by the Convention.

Plastic waste is classified under entries Y48 in Annex II, A3210 in Annex VIII, and B3011 in Annex IX to the Basel Convention (<https://www.basel.int/Implementation/Plasticwaste/Amendments/Overview/tabid/8426/Default.aspx>). Parties to the Basel Convention submit annual national reports containing statistical information on the transboundary movements of plastic waste (<https://www.basel.int/Countries/NationalReporting/OverviewandMandate/tabid/2314/Default.aspx>).

'Practical guidance on the development of inventories of plastic waste' (UNEP, 2022) provides practical instructions to assist Parties and others with developing inventories of plastic waste that can support the development of appropriate strategies and policies for plastic waste management and insights into the effectiveness of the system in place in a country to regulate the transboundary movement of plastic waste. For estimating plastic waste generation, the guidance proposes the product lifetime methodology that relies on national statistics regarding trade in plastics and manufacturing of plastic products, with which the current guideline is aligned (see section 5.1). A toolkit is provided to facilitate application of this methodology, developed in collaboration with UNITAR (<https://www.basel.int/Countries/NationalReporting/Toolkitsforwasteinventory>).



03

Accounting for Plastic Supply

Within this chapter, accounting for plastic supply is presented by production and imports of plastic and covers the supply of plastic in primary forms, semi-finished plastic products, finished plastic products, and plastic embedded in plastic-containing products. It does not cover plastic waste. Table 3.1 presents a basic structure of a physical supply table for plastic.

Table 3.1: Basic form of a physical supply table for plastic

	Industries: Output	Households	Accumulation	Rest of the world: Imports	Environment	Total supply
Production: Plastic in primary forms						
Production: Semi-finished plastic products						
Production: Plastic in finished products <i>Of which:</i> • Finished plastic products • Plastic embedded in plastic-containing products						

3.1 Production

Production is presented by three separated flows of products, produced by industries within a country's economic territory: plastic in primary forms, semi-finished plastic products, and plastic in finished products, which in turn includes finished plastic products and plastic embedded in plastic-containing products. These three separate flows were proposed to meet policy needs while concurrently avoiding double-counting, when, for example, plastic in primary forms could be counted twice, as a separate product, and as part of a finished plastic product.

Generally, physical flows of products are classified using CPC. CPC groups for plastic in primary forms, semi-finished plastic products, finished plastic products, and plastic embedded in plastic-containing products are provided in Annex 1.

While plastic in primary forms, semi-finished plastic products, and finished plastic products can be counted directly from the industry statistics using CPC, plastic embedded in plastic-containing products cannot be directly included in the account and need to be converted with plastic contents with coefficients, as listed in Annex 1.

Production can be disaggregated by ISIC. Likewise, ISIC Section C 'Manufacturing' is more relevant for plastic production, particularly Division 20 'Manufacture of chemicals and chemical products' and Division 22 'Manufacture of rubber and plastics products'.

3.2 Imports

Imports covers plastic in primary forms, semi-finished plastic products, finished plastic products, and plastic embedded in plastic-containing products brought to the country's economic territory from the rest of the world (imported).

Physical flows of imported plastic can be calculated using foreign trade statistics such as the SITC or the HS. Thus, plastic in primary forms correspond to SITC Division 57 'Plastics in primary forms' or HS groups from 3901 to 3914, while semi-finished plastic products and finished plastic products can be reflected through SITC Division 58 'Plastics in non-primary forms', or HS groups are from 3916 to 3921. Annex 2 proposes the possible scope of products by SITC, divided into plastic in primary forms, semi-finished plastic products, and finished plastic products. Annex 3 and Annex 4 provide the possible scope of products by HS, but only for plastic in finished products. To assist countries in their efforts to convert SITC or HS codes to CPC codes, UNSD publishes correspondence tables at the following link: <https://unstats.un.org/unsd/classifications/Econ>.

As noted in Chapter 2.4 above, calculation of trade flows of plastic at the global level is currently provided by UNCTAD. This work is a useful step in calculating plastic imports. However, it is important to remember that the UNCTAD classification included a slightly different scope of plastic-related products than this guideline does, particularly in that the UNCTAD classification included synthetic rubber-related products. As well, this guideline suggests a wider range of plastic-containing products. UNCTAD's experience in calculating flows of plastic imports is presented in Box 2.

Box 2: UNCTAD example on plastic import statistics

According to UNCTAD's plastic trade database, imports of plastic have increased nearly five times in value since 1995, reaching 1.12 trillion USD in 2021 as compared to 0.25 trillion USD in 1995. Globally, Europe was the biggest importer of plastic in 2021 with a share exceeding 41 percent of global plastic imports, followed by Asia and Oceania with 32 percent. North America imported 16 percent of global plastic in 2021, Latin America and the Caribbean 8 percent, and Africa less than 3 percent. Plastic imports are slightly less concentrated than exports, and Africa with its small share is a net importer of plastic.

These regional trends were notably affected by the decision of China to ban imports of most plastic waste to the country in 2017 (WTO, 2017). Before that, China was the main importer of plastic waste, as well as being the largest producer of it. In 2021, the United States of America and China were the only two countries with plastic imports exceeding 100 billion USD. Germany followed with nearly 80 billion USD.

When analysing the life cycle plastics database at the national level, one important finding is that some of the world's largest exporters of plastic products and inputs are also among the world's largest importers. According to Barrowclough et al. (Barrowclough, Birkbeck, and Christen, 2020), the oil producer Saudi Arabia is one of the world's largest exporters of plastic inputs, in the primary forms of pellets and nurdles, and does not feature much as an importer. China is a major importer of primary plastic and an exporter of derivative products. The United States of America and Germany, with significant interests in oil and gas production and the chemical industry as well as manufacturing more generally, feature heavily in both importing and exporting plastic across plastic's life cycle, classified based on HS codes.

Analysing UNCTAD's data, Barrowclough et al. (2020) note that some countries import plastic as intermediary products to their manufacturing. Vietnam, for example, an exporter of final manufactured synthetic clothing, needs intermediate plastic goods as inputs to production. Other Asian countries that export final manufactured clothes, such as Bangladesh and Indonesia, are also among active importers of intermediate plastic goods in value terms. Some countries are struggling to manage plastic waste within their borders, and the imports of plastic packaging – either empty or associated with other products – can add considerably to this burden. This is particularly the case, for instance, for Small Island Developing States that have limited capacity for waste management and recycling.



04

Accounting for Plastic Use

Within this chapter, accounting for plastic use is presented by intermediate consumption, final consumption, gross capital formation, and exports and covers the use of plastic in primary forms, semi-finished plastic products, finished plastic products, and plastic embedded in plastic-containing products. It does not cover plastic waste. Table 4.1 presents a basic structure of a physical use table for plastic.

Table 4.1: Basic form of a physical use table for plastic

	Industries: Intermediate consumption	Households: Final consumption	Accumulation: Gross capital formation	Rest of the world: Exports	Environment	Total supply
Production: Plastic in primary forms						
Production: Semi-finished plastic products						
Production: Plastic in finished product <i>Of which:</i> • Finished plastic products • Plastic embedded in plastic-containing products						

It should be noted that for the PSUT for plastic, the amounts of plastic produced by households on their own account should be recorded in the 'Industries: Intermediate consumption' column, which is compatible to the SNA methodology.

4.1 Consumption

The current sub-chapter describes consumption of plastic through three components: intermediate consumption by industry, final consumption by households, and gross capital formation, presented in the corresponding columns of the physical use table for plastic.

Intermediate consumption is a flow representing the supplied products used by other industries to make different products. An example of intermediate consumption is any plastic in primary form that is either used by other industries directly in the production chain or exported.

Intermediate consumption can be presented in all ISIC activities. Likewise, ISIC Section C 'Manufacturing' is more relevant for intermediate consumption, with the focus on Division 22 'Manufacture of rubber and plastics products'. The intermediate consumption associated with activities undertaken by government units is incorporated in the estimates of these flows for the relevant industry as, e.g., part of public administration or of human health and social activities.

Final consumption refers to the consumption of finished plastic products and products containing plastic by households. An example of final consumption is any finished plastic product or plastic-containing product that has been purchased by a household. The SNA 2008 defines a household as a group of persons sharing the same living accommodation who pool some, or all, of their income and wealth and who consume certain types of goods and services collectively, mainly housing and food (United Nations, 2014).

Gross capital formation includes the change of inventories and gross fixed capital formation, which are the assets used over a longer period of time to produce other products. It should be reflected as the column 'Accumulation' in the PSUT (see Table 2.2).

The calculation of intermediate consumption by industry, final consumption by households, and gross capital formation of plastic in primary forms, semi-finished plastic products, and plastic in finished products should be provided separately, avoiding double-counting, in cases when, for example, plastic in primary forms are consumed to provide a finished plastic product.

Consumption of plastic in primary forms, semi-finished plastic products, and plastic in finished products should be reflected using CPC. Supporting information is provided in Annex 1. If countries have difficulties collecting data on consumption of plastic, a proxy indicator of 'apparent consumption' can be applied. Apparent consumption is defined as a 'proxy measure for consumption of a product or material, defined as production plus imports minus exports of the product or material' (UNSTATS, 1997). Therefore,

$$\begin{aligned} & \text{Apparent consumption of products (t)} \\ & = \text{Production (t)} + \text{Imports (t)} - \text{Exports (t)} \end{aligned} \quad [3]$$

Apparent consumption of products can be calculated for each product or product group. For example, to calculate apparent consumption of polymers of ethylene in primary forms, production data can be collected with CPC code 34710 'Polymers of ethylene in primary forms', and imports and exports data can be collected with SITC code 571 'Polymers of ethylene'.

The data gathered from official statistics for the mass of production, imports, and exports are the mass of the whole product, not the mass of plastic embedded in the products. This is not an issue for plastic in primary forms, semi-finished plastic products, and finished plastic products. For example, HS code 392329 'Sacks and bags, incl. cones, of plastics (excl. those of polymers of ethylene)' consists of plastic, so it can be counted as apparent consumption of plastic directly. But for plastic-containing products, only plastic contents can be counted as apparent consumption of plastic. For example, the total weight of HS code 961380 'Lighters (excl. gas fuelled pocket lighters, and fuses and primers for propellant powders and explosives)' includes the weight of plastic, liquid, metal, and other materials. Thus, to calculate the apparent consumption of plastic, the proposed equation is:

$$\begin{aligned} & \text{Apparent consumption of plastic (t)} \\ & = f \times \text{Apparent consumption (t)} \\ & = f^p \times \text{Production (t)} + f^i \times \text{Imports (t)} - f^e \times \text{Exports (t)} \end{aligned} \quad [4]$$

where f^p represents plastic contents in the domestically produced plastic products, and f^i represents plastic contents in the imported and exported plastic products. Production data and trade data are collected with different classification systems, so the plastic contents are represented by different parameters.

It should be noted that double-counting could occur when the apparent national plastic consumption is calculated by simply summing up plastic in primary forms, plastic in semi-finished plastic products, and plastic in finished products. For example, semi-finished plastic products produced in country A can be consumed by manufacturers within country A to produce finished plastic products. In such cases, when summing up apparent consumption of the semi-finished plastic products and apparent consumption of the finished plastic products, the amount of apparent consumption of plastic in the semi-finished plastic products is counted twice.

In Plastic-KEYs, only finished products are represented, including finished plastic products, and plastic-containing products. Since finished products are not likely to be used for further manufacturing, double-counting is no longer done in totalling the plastic in finished products.

Thus, in order to avoid double-counting, using Plastic-KEYs is recommended when calculating a country's total apparent consumption. Plastic in primary forms and semi-finished plastic products are not included in Plastic-KEYs. So,

$$\begin{aligned} & \text{National apparent consumption of plastic (t)} \\ & = \sum_{p=P_{101}}^{P_{809}} \text{Apparent consumption of plastic}^p \text{ (t)} \end{aligned} \quad [5]$$



Credit: PhotoHedge/Envato

Main steps of calculating national apparent consumption of plastic with Plastic-KEY include:

1. Collecting data on each Plastic-KEY:
 - a. Collecting data on production of each Plastic-KEY based on Annex 1;
 - b. Collecting data on imports and exports of each Plastic-KEY based on Annex 3 and Annex 4;
2. Calculating apparent consumption of plastic for each Plastic-KEY with Equation [4] with the information on plastic contents in Annex 1, Annex 3, and Annex 4;
3. Totalling the apparent consumption of plastic for each Plastic-KEY to get the national apparent consumption of plastic, as presented in Equation [5].

Information about the corresponding between Plastic-KEYs and CPC version 2.1 codes can be found in Annex 1. Information about the corresponding between Plastic-KEYs and HS codes is presented in Annex 3. The Plastic-KEYs group P4 'Electrical and Electronic Equipment' has been developed in 'E-waste Statistics Guidelines on Classification Reporting and indicators' (Forti et al., 2018) through UNU-KEYs, which is listed in Annex 4.

While the plastic consumption statistics cannot be directly collected from statistical offices or economic sectors, the apparent consumption methodology can help improve data comparability among countries and further contribute to plastic waste monitoring, introduced in Chapter 5. An example of calculation of apparent consumption is provided in Box 3.

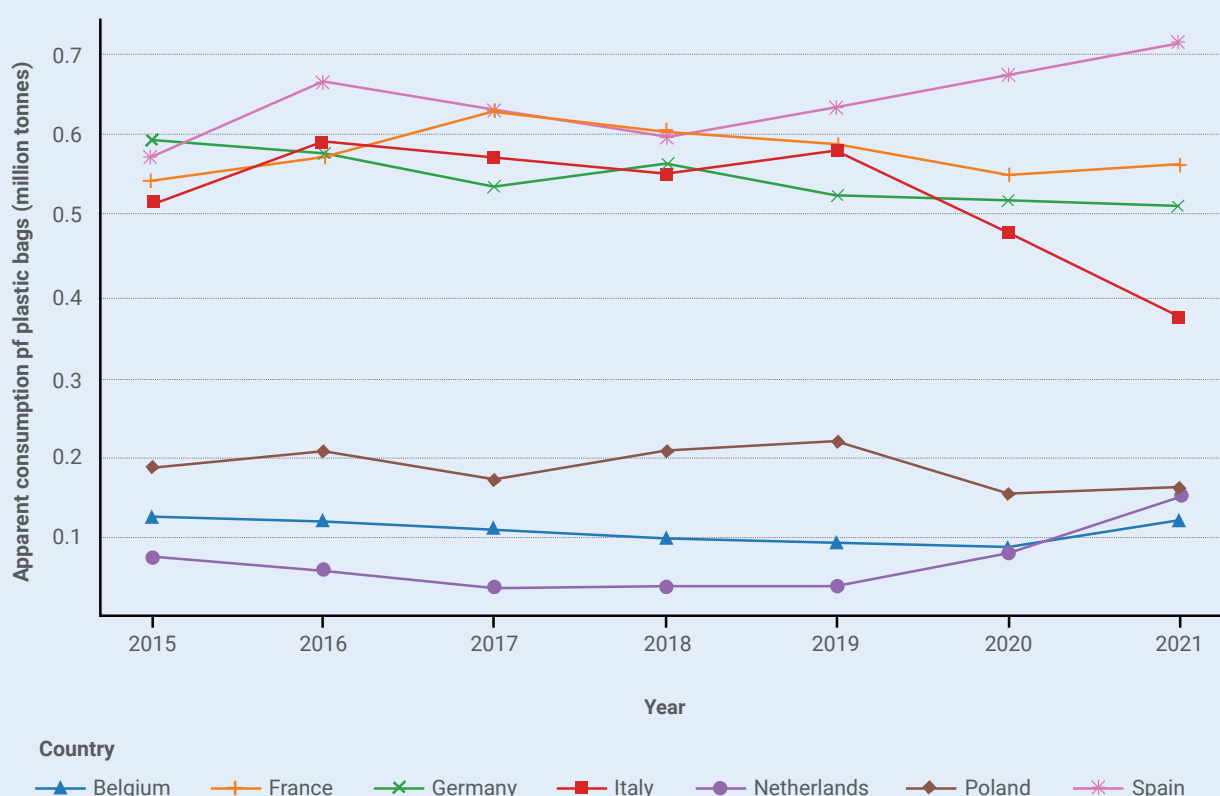
Box 3: Example of calculation of apparent consumption

Figure 4.1 presents the apparent consumption of Plastic-KEY P102 'Plastic sacks and bags' from year 2015 to 2021. Belgium, France, Germany, Italy, the Netherlands, Poland, and Spain were selected here because they were the top plastic bag consumers within Europe in 2021.

The apparent consumption in Figure 4.1 was calculated based on Equation [4]. Main steps include:

- Collecting data on production of plastic bags. For Figure 4.1, the production data was collected from the Prodcorn database from Eurostat. The statistical classification, the PRODCOM list, is applied in Eurostat industrial production statistics. The corresponding codes to P102 'Plastic sacks and bags' in PRODCOM list include codes 22.22.11.00 'Sacks and bags of polymers of ethylene (including cones)', 22.22.12.00 'Plastic sacks and bags (including cones) (excluding of polymers of ethylene)', and 22.22.13.00 'Plastic boxes, cases, crates and similar articles for the conveyance or packing of goods'.
- Collecting trade data of plastic bags. For Figure 4.1, the trade data were collected from the Comext database from Eurostat, where the Combined Nomenclature (CN) is applied. The corresponding codes to P102 'Plastic sacks and bags' in CN include codes 3923 21 00 'Sacks and bags, incl. cones, of polymers of ethylene', 3923 29 10 'Sacks and bags, incl. cones, of polyvinyl chloride, and 3923 29 90 'Sacks and bags, incl. cones, of plastics (excl. those of polyvinyl chloride and polymers of ethylene)'.
- Calculating apparent consumption of Plastic-KEY P102 'Plastic sacks and bags' with the data collected. Both f^p and f^T are assumed to be 100 percent since plastic bags are finished plastic products.

Figure 4.1: Apparent consumption of plastic bags (million tonnes)



4.2 Exports

Exports cover plastic in primary forms, semi-finished plastic products, finished plastic products, and plastic embedded in plastic-containing products brought to the economic territories of other countries (exported).

The same rules apply to the calculation of physical flows of plastic exports as for physical flows of plastic imports and can be calculated using foreign trade statistics by SITC or HS. Thus, plastic in primary forms correspond to SITC Division 57 'Plastics in primary forms' or HS codes from 3901 to 3914, while semi-finished plastic products and finished plastic products can be reflected through SITC Division 58 'Plastics in non-primary forms' or HS codes from 3916 to 3921. Annex 2 proposes the possible scope of products by SITC, divided into plastic in primary forms, semi-finished plastic products, and finished plastic products. Annex 3 and Annex 4 provide the possible scope of products by HS, but only for plastic in finished products. To assist countries in their efforts to convert SITC or HS codes to CPC codes, UNSD publishes correspondence tables at the following link: <https://unstats.un.org/unsd/classifications/Econ>.

Calculation of trade flows of plastic at the global level is currently provided by UNCTAD, as mentioned in Chapter 2.4 above. In addition to UNCTAD's experience in calculating flows of imports of plastic presented in Box 2, UNCTAD's experience in calculating flows of exports of plastic is presented in Box 4.

Box 4: UNCTAD example on plastic export statistics

According to UNCTAD's plastic trade database, exports of plastic have increased by five times in value since 1995, reaching nearly 1.2 trillion USD in 2021 as compared to 0.24 trillion USD in 1995. The value has more than doubled since 2005. Global exports of plastic are almost as large as the value of the overall merchandise exports of China, the United States of America, or Germany, individually. The growth in volume of plastic trade has been slightly slower but followed a similar path, increasing from 218 million metric tonnes in 2005 to 369 million metric tonnes in 2021. It would take 18.4 million trucks, each carrying 20 tonnes, to deliver the 2021 global plastic exports to their destination, if carried on the road. The queue of trucks would wrap around the globe more than 13 times.

Globally, Asia and Oceania was the biggest exporter of plastic in 2021 with a share exceeding 50 percent of global plastic exports, followed by Europe with 36 percent. North America exported a bit less than 10 percent of global plastic in 2021, Latin America and the Caribbean accounted for 2.5 percent of global plastic exports, and Africa less than 1 percent. Regionally, plastic exports are more concentrated than imports.

According to UNCTADstat, the largest exporters of plastic at the national level in 2021, in terms of volume, were China (70.1 million metric tonnes), Taiwan Province of China (13.2 million metric tonnes), Thailand (12.5 million metric tonnes), Saudi Arabia (12.0 million metric tonnes), and Singapore (7.0 million metric tonnes). Malaysia, India, the United Arab Emirates, Türkiye, and Vietnam are also within the global top ten.

Plastic trade makes a significant share of global trade in goods, with more than 5 percent in 2021. Therefore, efforts to understand plastic life cycles and enhance statistics are essential. In 2021, total goods trade was most reliant on plastic in El Salvador, Sri Lanka, Luxembourg, Lesotho (based on 2020 data), Togo, Bahamas (based on 2020 data), Thailand, and Serbia. In these economies, the plastic share exceeded 10 percent. Together, they accounted for 3.4 percent of global plastic exports.

The detailed HS coding of global merchandise trade enables the analysis of plastic products grouped by type. Plastic in primary forms continue to form the majority of global exports of plastic, while the share of final manufactured plastic goods has been increasing.



05

Accounting for Plastic Waste

Within this chapter, accounting for plastic waste covers plastic waste generated, formal waste handling, informal and illegal waste handling, plastic waste trade, and plastic to the environment.

Within the PSUT for plastic (see Table 2.1), the plastic waste supply includes plastic waste generated by industry, plastic waste generated by household (final consumption), plastic waste generated from scrapping and demolition of produced assets (accumulation), and imported plastic waste. The plastic waste use includes plastic waste collection and treatment, accumulation of plastic waste in controlled landfill sites, exports of plastic waste, and flows to the environment. The basic structure of a physical supply and use table for plastic waste within the PSUT for plastic is presented in Table 5.1.

Table 5.1: Basic form of a physical supply and use table for plastic waste

	Industries	Households	Accumulation	Rest of the world	Environment	Total
<i>Supply table</i>						
Plastic waste	Plastic waste generated by industry during production	Plastic waste generated by households	Plastic waste generated from scrapping and demolition of produced assets	Imports of plastic waste		Total supply of plastic waste
<i>Use table</i>						
Plastic waste	Plastic waste collection and treatment		Accumulation of plastic waste in controlled landfill sites	Exports of plastic waste	Flows direct to the environment (losses on each stage throughout the life cycle)	Total use of plastic waste

It is worth mentioning the differences between ‘Plastic waste generated by industry during production’ and ‘Plastic waste generated from scrapping and demolition of produced assets’. The former represents the plastic waste generated from the current period’s production activity, while the latter records the scrapping and demolition of the assets produced in previous periods.

It should be noted that the ‘Plastic waste collection and treatment’ in the PSUT for plastic has a different scope, with the indicator of ‘Plastic waste collection’. In the PSUT for plastic, ‘Plastic waste collection and treatment’ represents the final collection and treatment of plastic waste. Similarly, ‘Accumulation of plastic waste in controlled landfill sites’ should include only the plastic waste that has reached final treatment and should thus exclude the plastic waste that will receive further treatment. Plastic and plastic waste are not uniformly classified across the world and life cycle, so there is no uniform classification of plastic waste that can be referred to. The most common statistical classifications currently used in official waste statistics and international questionnaires, as well as their usage in the plastic waste statistics, are presented in Table 5.2.

5.1 Plastic Waste Generated

To obtain harmonised ‘waste generation’ statistics, consistency in defining the moment something becomes waste must be achieved. Waste’s definition refers to ‘the intention or requirement to dispose of the material’ (UNECE, 2022). Based on the waste generation definition from the CES Framework on Waste Statistics, in this guideline, plastic waste generated is defined as the amount of plastic embedded in discarded products that contain plastic, within national territory in a given reporting year, prior to any collection, reuse, treatment, or exportation.

Table 5.2: The usage of classifications in the plastic waste statistics

Title	Description of classification	Usable for statistics
Central Product Classification (CPC) version 2.1	Framework for international comparison of statistics on goods, services, and assets	Mapping production; Input to 'apparent consumption methodology'
Harmonized Commodity Description and Coding Systems (HS)	International nomenclature to classify traded goods on a common basis for customs purposes	Mapping international trade of products and plastic waste; Input to 'apparent consumption methodology'
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal	Classification of wastes presumed to be hazardous (A3210 in Annex VIII to the Basel Convention) and requiring special consideration (Y48 in Annex II), subject to the prior informed consent procedure, and those presumed not to be hazardous (B3011 in Annex IX) and not subject to the prior informed consent procedure for transboundary movements	Mapping international trade of waste
Plastic-KEYs	Products categories based on comparable average weights, material compositions, end-of-life characteristics, and lifespan distributions	Mapping outcomes of 'apparent consumption methodology' to waste management
List of Waste (European Commission, 2014)	EU waste classification for administrative purposes and mainly based on the economic sector or process of origin	Mapping plastic waste statistics of treated waste
European Waste Classification for Statistics (EWC-Stat), version 4 (waste categories)	Substance-oriented aggregation of the waste types defined in the European List of Wastes	Mapping plastic waste statistics of treated waste
Municipal solid waste	Data on waste collected by the municipality or disposed of at the municipal waste disposal site	Waste management data on municipal / country level; Mapping plastic waste statistics of treated waste outside of 'other waste related activities'

Plastic waste generated covers plastic waste generated by industry (production), plastic waste generated by household (final consumption), as well as plastic waste generated from scrapping and demolition of produced assets (accumulation). Plastic waste generated by industry can be presented in all economic activities by ISIC.

Statistics on plastic waste generated is very important but is difficult to collect at the country level. A 'material flow analysis' (MFA) approach can be applied to estimate plastic waste generated. Material flow analysis is a framework that links the society and the natural environment (Krausmann et al., 2017), and it can trace the material from raw material extraction to end-of-life options. Following the law of thermodynamics, material flow analysis can illustrate inputs and outputs within the system, as well as the material stocks during the specific period. So, the inflows and outflows of plastic at each life cycle stage can be quantified with MFA. MFA is further classified into static material flow analysis and dynamic material flow analysis. Dynamic material flow analysis adds time as a variable and can be used to explore time paths. For example, the product lifespans can serve as the time variable in dynamic material flow analysis to model the rate of becoming waste. It entails using production and trade data, from sources such as national production statistics and international trade datasets and combines this with product lifespans to estimate likely plastic waste generated by sector.

According to 'Practical guidance on the development of inventories of plastic waste' (UNEP, 2022), dynamic material flow analysis (named as 'product lifetime' methodology therein), can be applied to calculate plastic waste generated for a region or a country by using existing data on domestic production and trade statistics. An advantage of this methodology is that the required statistics (such as customs data on plastic imports and exports) are available in most countries. It thus provides the basis for a harmonised approach for estimating plastic waste generated that can improve data comparability among countries and contribute to monitor progress toward the achievement of the Sustainable Development Goals.

The scope of the methodology is to estimate the plastic waste generated by household (final consumption) and plastic waste generated from scrapping and demolition of produced assets (accumulation). The plastic waste generated during manufacturing by industry cannot be captured by this methodology. The key equation of the methodology, the calculation of plastic waste generated for each Plastic-KEY, is presented by Equation [6]:

$$\begin{aligned} & \text{Plastic Waste Generated}^p(n) \\ &= \sum_{t=t_0}^n \text{Apparent Consumption of plastic}^p(t) \times L^p(n-t) \end{aligned} \quad [6]$$

Where the estimated amount of plastic waste generated from each Plastic-KEY in year n ($\text{Plastic Waste Generated}^p(n)$) is calculated by multiplying the apparent consumption of plastic in year t and the probability of these products becoming waste in year n . t_0 is the initial year. $\text{Apparent Consumption of plastic}^p$, calculated from Equation [4], represents the domestic use of plastic on Plastic-KEY p . In different products, the content of plastic (f) can also be quite diverse. The content of plastic (f) related to Plastic-KEYs are listed in Annex 1, Annex 3, and Annex 4.

To estimate the total plastic waste generated in a country, Equation [7] can be applied:

$$\begin{aligned} & \text{National Plastic Waste Generated}(n) \\ &= \sum_{p=P_{101}}^{P_{809}} \text{Plastic Waste Generated}^p(n) \end{aligned} \quad [7]$$

Where national plastic waste generated in one year can be estimated by totalling the plastic waste generated by each Plastic-KEY.

$L^p(n-t)$ represents the lifespan distribution, which reflects the probability of products reaching the end-of-life in year n after being consumed in year t . It is assumed in this guideline that the plastic contents have the same lifespan as the products they are embodied in. The lifespan distribution for a product could be modelled using several functions. A Gaussian distribution or normal distribution is used in this guideline, whose general form of probability density function is shown in Equation [8] and illustrated in Figure 5.1. This is applied after the guidelines in 'Practical guidance on the development of inventories of plastic waste' (UNEP, 2022) and is similar to the approach applied by Geyer et al. (Geyer et al. 2017) and other studies (Cooper et al., 2014; Davis et al., 2007; Murakami et al., 2010; Mutha et al., 2006). Estimated values for the parameters of Equation [8] for products in the key economic sectors or Plastic-KEYs are provided in Table 5.3.

$$L^p(n-t) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{(n-t-\mu)^2}{2\sigma^2}} \quad [8]$$

Table 5.3: Lifespans of some Plastic-KEYs (groups)

Sectors	μ (mean, in years)	σ (standard deviation in years)
P1 Packaging	0.5	0.1
P205 Public transport-type passenger motor vehicles	12	3
P206 Passenger cars	9	2
P218 Large ships and vessels	42	8
P3 Building and Construction	35	7
P40111 Air conditioners	21	2
P40303 Laptops	9	2
P40408 Flat-Panel TVs	11	2
P5 Consumer and Institutional Products	3	1
P6 Industrial Machinery	20	3
P701 Wearing apparel	5	1.5
P704 Carpets and other floor coverings	10	3

Source: (Mutha et al., 2006; Cooper et al., 2014; Murakami et al., 2010; Davis et al., 2007; United States Department of Transportation, 2021; Rodrigue, 2020; Geyer et al., 2017; Forti et al., 2018; UNEP, 2022; Cunningham and Miller, 2022)

The stock in use, $S(n)$, shown in Figure 2.1 as the step between put on the market and waste generated, represents the accumulated amount of plastic in use in the system. Based on material flow analysis, it can be calculated with the difference between total domestic use and plastic waste generated as described in Equation [9].

$$S^p(n) = \sum_{t=t_0}^n \text{Apparent Consumption of Plastic}^p(t) - \sum_{t=t_0}^n \text{Plastic Waste Generated}^p(n)$$

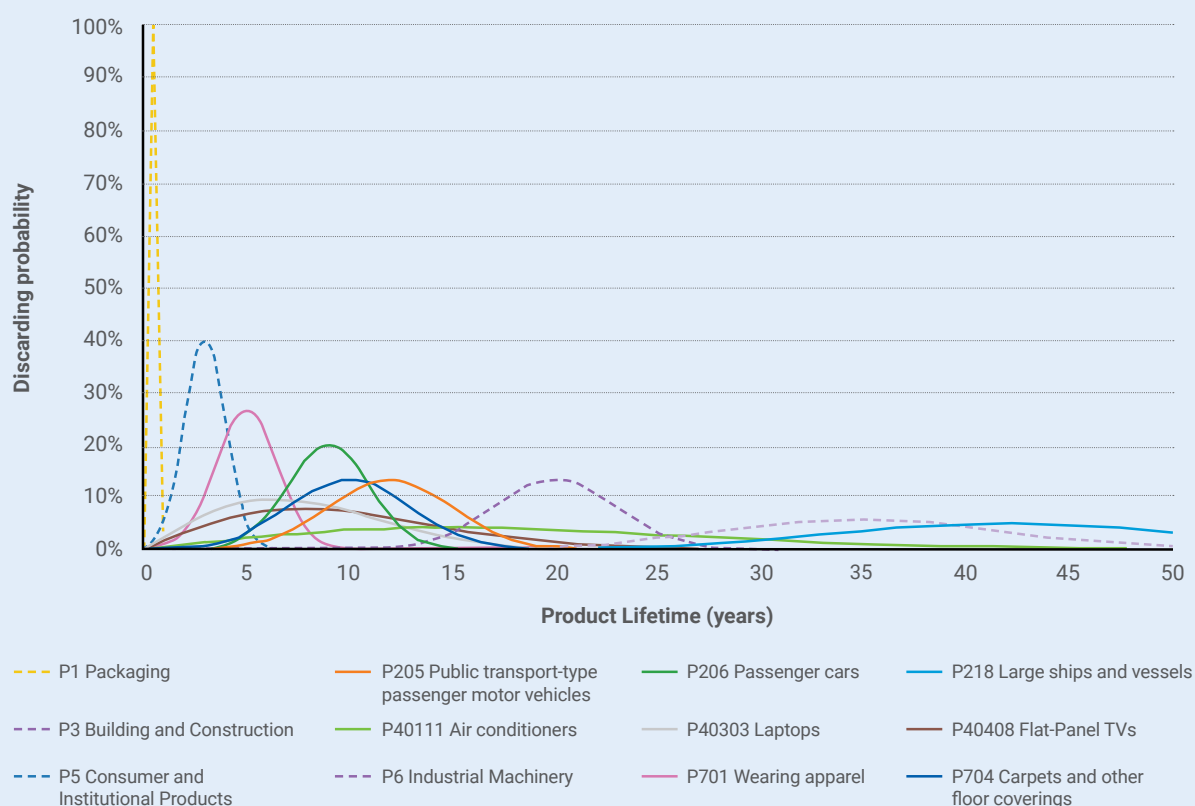
[9]

Box 5: Lifespan assumptions of plastic products/plastic-containing products

As discussed in Sub-chapter 2.2, lifespan is the period between a product's consumption and end-of-life (EOL). This period can include the dormant time that a product remains not in use, but is not yet discarded. Different products can stay in the system as stock for different durations, which depends mainly on products' lifespans. For example, a PVC floor can last a few years or even decades before reaching its end-of-life. A plastic bottle sold with bottled water is usually discarded after the water is consumed, before being discarded into the waste stream. So, the duration of plastic products staying in the system can be very diverse. It should also be noted that the factors determining the product lifespans are not only objective, such as resource properties or technology level, but can also be subjective at times. For instance, a PVC floor owner may want to change the floor to a different colour or a different material prior to the end of its lifespan. Such subjective factors can be assumed within the deviations.

Referring to the relevant literature (Cooper et al., 2014; Davis et al., 2007; Murakami et al., 2010; Mutha et al., 2006), this guideline models the lifespan distribution with a Gaussian distribution, except for electrical and electronic equipment (EEE) where Weibull distribution is applied. More details about lifespan assumptions for EEE at UNU-KEY level can be found in 'E-waste Statistics: Guidelines on Classifications, Reporting and Indicators' (Forti et al., 2018). Figure 5.1 below presents the lifespan distributions for the eight main sectors, at Plastic-KEY group level or at the Plastic-KEY level, plotted as probability density function of Gaussian or Weibull distribution. Gathering more information at the Plastic-KEY level in the future, with sufficient data sources, is recommended.

Figure 5.1: Lifespan distributions of some Plastic-KEYs (or Plastic-KEY groups)



Source: (Cooper et al., 2014; Cunningham & Miller, 2022; Davis et al., 2007; Forti et al., 2018; Geyer et al., 2017; Murakami et al., 2010; Mutha et al., 2006; Rodrigue, 2020; UNEP, 2022; United States Department of Transportation, 2021)

5.2 Plastic Waste Handling

As shown in Figure 2.1, waste handling is presented by waste management, as well as other waste-related activities (informal and illegal waste handling).

Waste management is a key term for policies and measurement frameworks on materials and waste. In international policy frameworks and waste statistics questionnaires, 'waste management' is usually defined as covering the various activities related to handling waste, including collection, transportation, and treatment (UNECE, 2022).

The existing international definitions are well-aligned with each other. The term 'management' implies that the definitions refer to activities carried out by economic units of the formal sector within a legal framework. As there might also be waste-handling carried out by informal economic units (e.g. informal waste-picking) or illegal waste-handling (e.g. illegal waste disposal, illegal imports, and exports), it is important to make a conceptual distinction between:

- ▶ Management of waste (carried out by formal economic units and legal);
- ▶ Informal and illegal waste handling.

Per the CES Framework on Waste Statistics, 'waste management is defined as the set of lawful activities carried out by economic units of the formal sector, both public and private for the purpose of the collection, transportation, and treatment of waste, including final disposal and after-care of disposal sites' (UNECE, 2022).

Thus, waste generated can also be described in the following equation:

$$\begin{aligned} \text{Plastic Waste Generated} &= W_{\text{formal}} + W_{\text{informal}} + W_{\text{illegal}} + W_{\text{unknown}} \\ &= W_{\text{formal}} + W_{\text{informal}} + W_{\text{gap}} \end{aligned} \quad [10]$$

Where the plastic waste generated can end up in waste management carried out by the formal sector (W_{formal}), or in other waste-related activities that include informal waste-handling (W_{informal}) and illegal waste-handling (W_{illegal}). The rest of plastic waste generated is treated in unknown ways (W_{unknown}). W_{gap} is used here to represent the sum of plastic waste that is treated illegally or with an unknown method. Countries need to report on the whereabouts of the domestically generated plastic waste to international organisations to help trace plastic waste and estimate the amount of plastic entering into the environment globally.

In most countries, not all of the plastic waste is treated domestically. Thus, the plastic waste collected in the formal sectors (W_{formal}) can be further divided into plastic waste treated domestically ($W_{\text{formal, domestic}}$) and plastic waste exported ($W_{\text{formal, exported}}$).

$$W_{\text{formal}} = W_{\text{formal, domestic}} + W_{\text{formal, exported}} \quad [11]$$

5.2.1 Waste management

Waste management can be presented in all economic activities by ISIC. ISIC Section E 'Water supply; sewerage, waste management and remediation activities' is more relevant for plastic waste management, with the focus on Division 38 'Waste collection, treatment and disposal activities; materials recovery'.

Plastic waste collection

Plastic waste in waste management goes to waste collection first before being recovered or disposed. Waste collection means the gathering of waste, including the preliminary sorting and preliminary storage of waste for the purposes of transport (UNECE, 2022). Plastic waste collection systems can differ significantly between countries or even within a country. At the global level, one can generally distinguish between waste collection from different generators, being households and economic activities. Several collection systems exist for plastic waste and embedded plastic waste:

- ▶ Separate collection of plastic waste, such as plastic waste collection from households and economic activities.
- ▶ Plastic waste embedded in separate collection, such as plastic embedded in separately collected e-waste, plastic in textile collection, or plastic in furniture collection.
- ▶ Plastic waste mixed in with other waste, such as in mixed residual waste, or plastic waste embedded in e-waste that is disposed of in mixed residual waste.

The differences between waste collection systems can also come from selected recyclers who operate with different technologies and equipment. A well-established waste collection system provides a good start for the waste treatment steps outlined below.

Plastic waste treatment

The definition of waste treatment used in the CES Framework on Waste Statistics and the EU Waste Framework Directive (WFD) is 'recovery or disposal operations, including preparation prior to recovery or disposal'. According to this definition, plastic waste treatment includes recovery operations and disposal operations, as shown in Figure 2.1.

Plastic waste recovery

Per the EU WFD, waste recovery is 'any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy'. Annex II in the EU WFD provides an abridged list of recovery operations. The key sub-categories of waste recovery are recycling, composting, and incineration with energy recovery. Recycling is 'defined as any activity by which materials are recovered from a waste stream for the purpose of providing material inputs for use in another production process (other than processes designed for energy recovery, the reprocessing into fuels and material for backfilling)' (UNECE, 2022).

Plastic waste disposal

According to the CES Framework on Waste Statistics and the EU WFD, waste disposal is 'any operation which main purpose is not the recovery of materials or energy even if the operation has as a secondary consequence the reclamation of substances or energy', which includes deposit into or onto land (e.g. landfills), biological and physicochemical treatment, incineration (without energy recovery), permanent storage, etc. An abridged list of disposal operations can be found in Annex I of the EU WFD.

To avoid double-counting when building PSUT for plastic, waste to landfill after treatment should be excluded from the waste treatment of ISIC. Waste exported after treatment should also be excluded from the waste treatment of ISIC.

Box 6: UN-Habitat guide to collect data on municipal solid waste at city level

To help cities assess and improve their municipal solid waste (MSW) management systems, UN-Habitat developed a practical framework, the [Waste Wise Cities Tool](#) (WaCT). WaCT guides readers through 7 steps to collect data on MSW generated, collected, and managed in controlled facilities. The tool provides a household survey guide for total MSW generation, a questionnaire to identify the MSW recovery chain and criteria to check the environmental control level of waste management facilities in a city. WaCT also supports SDG indicator 11.6.1 'Percentage of municipal solid waste collected and managed in controlled facilities out of total municipal solid waste generated by city.'

As of June 2025, the tool had been applied in more than 70 cities worldwide, providing data for municipal waste flows, including waste generated, collected, recovered and disposed, with waste composition and informal and formal collection flows. The data collected is published on the [WaCT Data Portal](#) for each city.

This UN-Habitat initiative provides important and comparable data on waste management, particularly in Asia and Africa so far, filling notable data gaps in the waste management sector that have long been recognized, while informing policies and actions to combat plastic pollution. In Mombasa, Kenya, for example, the research showed that about 50 percent of Mombasa's waste was collected and only 5 percent was recovered in 2020. These data helped the city attract funding for a plastic waste sorting plant.

5.2.2 Other waste-related activities (Informal and illegal waste-handling)

Besides waste management activities, there are also other waste-related activities, which include 'informal and illegal waste-handling'. Informal waste-handling is defined as collection, transportation, treatment and disposal of waste by the informal sector (UNECE, 2022). As with waste management activities, informal waste-handling also includes waste collection, waste treatment, and waste disposal. But scopes differ for each activity between formal and informal waste-handling. For example, street waste-picking from bins or collection containers counts as waste collection in informal waste-handling. Studies have shown that plastic collection rates and pollution reduction can be improved with supporting interventions toward plastic waste recycling by the informal sector (Velis et al., 2022). Though informal waste-handling can play an important role in some countries, the relevant data is very difficult to measure and record. Some scientific approaches can be applied to help create estimates.

Illegal waste-handling can be a main source of plastic waste flows to the environment. For example, plastic littering by occurrence has become the most prominent litter type in urban areas, comparing with metal, paper, glass, and other types of litter, in which plastic wrappers and bags are commonly observed categories (Ballatore et al., 2022). Because of their light weight and small sizes, plastic wrappers and bags also have a high tendency to remain in the environment.

5.3 Plastic Waste Trade

Plastic waste trade includes imports from and exports to the economic territories of other countries' plastic waste.

Plastic waste trade can be classified using either HS or SITC. Plastic waste corresponds to SITC Group 579 'Waste, parings and scrap, of plastics' or HS group 3915 'Waste, parings and scrap, of plastics'. More details on the SITC groups for plastic waste trade are provided in Annex 2. Note that other waste related categories may also include plastic, such as SITC Sub-group 267.2 'Waste (including noils, yarn waste, and garnetted stock) of manmade fibres', and HS 382510 'Residual products of the chemical or allied industries, not elsewhere specified or included; municipal waste'.

Box 7: UNCTAD example on statistics on plastic waste trade flows

UNCTAD's plastic trade database, based on UN Comtrade data and selected HS codes, enables the measurement of changes in international trade in plastic waste in values and volumes, by country and product from 1995 onward. Despite efforts to reduce international trade on plastic waste, developed economies continued to be net exporters of plastic waste, accounting for nearly 80 percent of the global plastic waste exports and nearly 70 percent of global plastic waste imports in 2021. However, the volume of plastic waste exports has dropped over a decade-long span, from 15.1 million metric tonnes in 2011 to 5.5 million metric tonnes in 2021, representing a 63 percent decrease, largely affected by the decision of China to ban most plastic waste imports in 2017.

UNCTAD's SDG Pulse (UNCTAD, 2023a) section on sustainable trade analyses plastic trade, noting that plastic disproportionately affect vulnerable communities. Exporting plastic waste to developing economies with insufficient infrastructure to manage waste in an environmentally sound manner may increase inadequate practices of plastic burning, which results in the emission of greenhouse gases and other atmospheric contaminants, and the spreading of plastic into nature, including micro- and nano-plastic.

By embracing a full life cycle as enshrined by circular economy, industries, businesses, and consumers can help stem the tide of plastic crossing borders. UNCTAD has initially identified a total of 282 HS subheadings (6-digit level) for materials and products that can perform similar functions to plastics and can thus be considered as substitutes. Preliminary estimates value the trade of plastic substitutes in 2020 at 388 billion USD (UNCTAD, 2023b).

5.4 Plastic to the Environment

Plastic to the environment refers to plastic waste flows that end up in the environment, including waste flows direct from industry and households, and are not covered by formal and sound waste management and adequate final treatment options, such as landfill¹, recycling, or energy recovery. Plastic could be released intentionally (e.g., littering, illegal dumping) or unintentionally (e.g., loss of plastic fishing gear at sea, tyre dust); and plastic materials can be found either in the form of gas (e.g. methane from decomposition processes or carbon dioxide from incineration), liquids (e.g. leachate infiltration into the soil) or solids (e.g. plastic nurdles leakages, illegal disposal or movement of plastics waste by wind and water) (Galgani & Rangel-Buitrago, 2024). Plastic flows to the environment also include natural resource residuals remaining after excess natural resource extraction for plastic production and landfill emissions.

Additionally, these materials can be found in primary forms, as well as semi-finished and finished plastic products or plastic-containing products. If the escapes occur during the manufacturing process it may be considered as pre-consumer waste, whereas plastic pollution from consumption and waste management phases are considered post-consumer waste.

¹ Waste within sanitary or controlled landfill is still considered within the economy. Plastic waste may be released into the environment through uncontrolled landfills, especially adjacent to rivers or oceans.

This flow of plastic into the environment adds to the existing ‘stock’ of legacy plastics that have accumulated in different environmental compartments (i.e., unmanaged stocks of plastic in land, coastal, riverine, and marine areas).

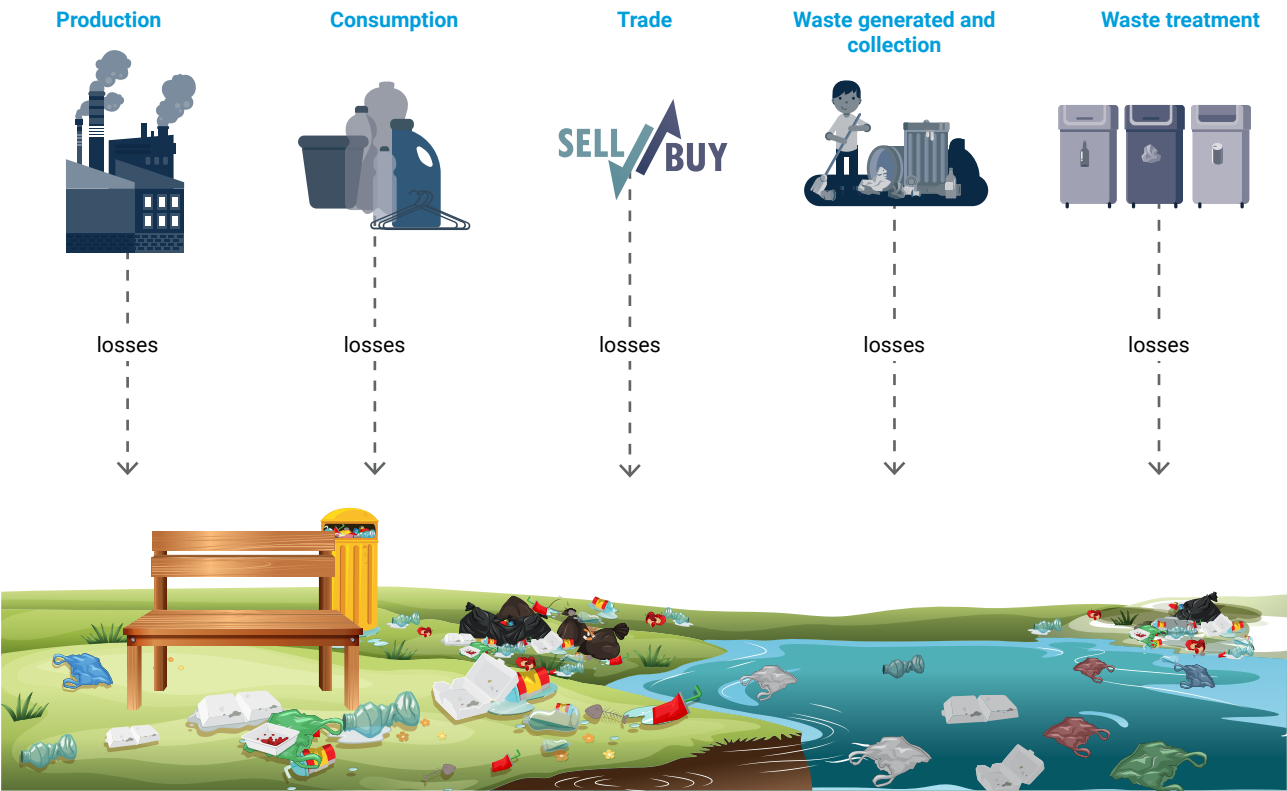
The SDGs provide a framework for national reporting on plastic into the environment, and specifically for plastic into the ocean. SDG target 14.1 aims to ‘significantly reduce marine pollution ... including marine debris’. It further provides ‘plastic debris density’ (SDG 14.1.1b) as an indicator to measure and track progress in reducing the flow of plastic into the environment. Further guidance is provided by UNEP (2021) in measuring plastic density along coastal environments, sea surfaces, water columns and seafloors (per unit area or volume).² Further guidance, however, is needed to align measurement with accounting requirements to ensure that statistics on plastic density are representative at the national scale. It also requires extension of such statistics to link observed plastic in the environment to their release (i.e., source) by industries and households.

Plastic flows to the environment can be represented by plastic leakages on all stages of plastic life cycle, as illustrated in Figure 5.2 and shown in Equation 12:

$$\text{Plastic leakages} = \text{Losses from different stages of plastic life cycle} \quad [12]$$

Where the plastic leakages to the environment are estimated as the sum of losses from different stages of plastic life cycle.

Figure 5.2: Flow chart of losses at the different stages of plastic life cycle



² United Nations Environment Programme (2021). Understanding the State of the Ocean: A Global Manual on Measuring SDG 14.1.1, SDG 14.2.1 and SDG 14.5.1. Nairobi

Box 8: Example of estimation of plastic waste flows into the environment

Approaches to estimating waste flows into the ocean

Most estimates of the rates of plastic release into the ocean are modelled on waste generated and coastal population. Empirical estimates, based on plastic observed in the environment, remain localised due to the lack of comprehensive datasets that track the sources of plastic release at a national or sub-national level. There are, however, existing frameworks that could advance the ability to link plastic release to the economic sectors responsible.

UNEP/IUCN National Guidance for Plastic Pollution Hotspotting and Shaping Action

The National Guidance for Plastic Pollution Hotspotting and Shaping Action – developed by UNEP, IUCN, and the Life Cycle Initiative – is a methodological framework designed to assist countries, regions, and cities in systematically identifying plastic pollution hotspots and implementing targeted interventions. This Guidance addresses the release of plastic across the value chain by providing an approach to measuring plastic flows and leakage by location or sector. The Guidance is structured around three key stages: identifying hotspots, prioritising interventions, and aligning instruments for implementation.

Hotspots are defined as a component of the system that directly or indirectly contributes to the magnitude of plastic leakage and/or its impacts. This stage provides methods for determining the sources of plastic, with further options to segment plastics by polymer, application (i.e., intended final use), and sector. The guide provides data collection modules that assist in identifying the relevant surveys and data needed to inform the hotspot analysis. Subsequent sections of the guidance focus on modelling and prioritisation to determine points of intervention.

Waste Flow Diagram – rapid leakage assessment method

The Waste Flow Diagram (WFD) combines material flow analysis with observational assessments along plastic leakage pathways. It assesses and maps waste flows throughout the waste management system, maps and visualises municipal solid waste material flows, and quantifies the quantities, sources, and fates of plastic leakage to the environment. The final fates identified include water, sewers, land, and open burning.

The WFD enables a holistic analysis of a municipal solid waste management system, covering the entire process from waste generation, collection, transport, treatment, and disposal to the final fates of land, water, drains, and open burning, including a separate assessment of the informal sector. It calculates numerical results and provides a flow and Sankey diagram that identifies sources of plastic pollution and leakage hotspots at each stage of the MSW system. The collected data is managed within the WFD portal, which includes a data validation process, scenario building capabilities, user generated reports, and various data visualisation options.

Built-in scenario capabilities allow the user to understand the potential impact of applying interventions within the waste management system. For example, the user can simulate how increasing collection coverage by a certain amount would affect the rest of the waste management system, including the amount of plastic leaking into water.

The WFD has been developed to complement the UN-Habitat Waste Wise Cities Tool (WaCT) and is aligned with SDG indicator 11.6.1, which focuses on the proportion of MSW that is collected and properly disposed of.

The losses in the plastic manufacturing process may refer to different emissions to the environment, particularly through the production of CO₂ and other greenhouse gases. The air emissions accounts from the SEEA CF could be used to account for air emissions by the plastic manufacturing sector (as defined by ISIC code). Emissions data could be collected in a similar process to other economic sectors to identify sources and estimate emissions.

There are also opportunities to link plastics observed within the environment to the ecosystems from which they were recovered (e.g., beaches, mangroves, coral reefs) and further link plastics to their potential environmental impacts using the SEEA EA. By capturing these impacts, accounts can reflect the extent of ecosystem degradation caused by plastic pollution, providing a basis for quantifying changes in ecosystem health over time.

The spatial approach of the SEEA EA could be used to trace plastic within the environment to likely sources. For example, plastic recovered from beaches with high tourism visitation could be directly linked to the tourism sector. Plastic data organised following Ecosystem Accounting could also be used to monitor escape from landfills and the waste management sector. Through regular sampling at key points (e.g., using the UNEP/IUCN Hotspotting approach, see Box 8), observed plastic could be linked to specific industries.

Other science-based initiatives such as citizen science, geospatial observations and scientific modelling might also be useful for the estimation of plastics escaping into nature, either for data generation on plastic pollution and analysis of sources (plastic pathways and dynamics against human activities) or to assess the validity of governmental and non-governmental administrative records.

Box 9: Example of estimation of plastic waste in the environment

Guidelines for the monitoring and assessment of plastic litter in the ocean (GESAMP, 2019)

The guidelines for the monitoring and assessment of plastic litter in the ocean provide recommendations, advice, and practical guidance for establishing programmes to monitor and assess the distribution and abundance of plastic litter, also referred to as plastic debris, into the ocean. It is a product of the GESAMP Working Group (WG40) on 'Sources, fate and effects of plastic and microplastics in the marine environment', co-led by the Intergovernmental Commission on Oceanography (IOC-UNESCO) and UNEP. The intention is to promote a more harmonised approach to the design of sampling programmes, the selection of appropriate indicators (i.e., type of sample), the collection of samples or observations, and the characterisation of sampled material, dealing with uncertainties, data analysis, and results-reporting. It is intended to inform the establishment of national and regional field monitoring programmes, and it provides links to protocols and data recording sheets that are intended to be used in the field. The scope is restricted to monitoring plastic litter in the marine environment. However, many techniques described can be used in freshwater environments, specifically for monitoring rivers and lakes, with appropriate modification.

Citizen science approaches contributing to plastic pollution monitoring

Citizen science represents a potential alternative for data generation and monitoring of plastic pollution. Examples can be bottom-up, as the Litter Intelligence Programme in New Zealand, which developed a citizen science initiative to collect litter data from beaches to generate a litter database for the country (The Commonwealth, 2020); or top-down -normally more relevant in countries with limited resources available for citizen science initiative-, as was the case in Ghana, that became the first country to integrate existing citizen science data on marine plastic litter in their official monitoring and reporting of SDG indicator 14.1.1b for the years 2016–2020, and for the country's Voluntary National Review (Fraisl et al., 2023). Recommendations from these experiences include the alignment of the project's methodology with national and global frameworks and support to the data collection and analysis activities, to ensure policy uptake and real impact.

Other examples in this realm include methods for litter monitoring in urban environments (Ballatore et al., 2022) and a debris tracker for riverine zones (Marine Debris Tracker, 2022). All these initiatives may be useful to either generate data on plastic pollution or to validate governmental and non-governmental administrative records.



06

Potential Data Sources and Units of Measurement

This chapter discusses the data sources of plastic supply, plastic use, and plastic waste. The United Nations Statistics Division's Handbook on Management and Organization of National Statistical System, 4th Edition (United Nations, 2022), identifies four main groups of data sources:

- ▶ Statistical surveys (data collected directly from respondents in different circumstances carried out by a producer of official statistics exclusively for statistical purposes through the systematic use of statistical methodology);
- ▶ Administrative data (data collected by a government ministry, department, or agency primarily for administrative [not research or statistical] purposes);
- ▶ Geospatial data (data that has a geographic component; the most prolific source of such data is satellite imagery);
- ▶ Big data (refers in general to data generated by business transactions, social media, phone logs, communication devices, web scraping, sensors, etc.).

According to the Framework for the Development of Environment Statistics (FDES) (United Nations, 2017), sources of environment statistics include:

- ▶ Statistical surveys (e.g., censuses or sample surveys of population, housing, agriculture, enterprises, households, employment, and different aspects of environment management);
- ▶ Administrative records of government and non-government agencies responsible for natural resources, as well as other ministries and authorities;
- ▶ Remote sensing and thematic mapping (e.g., satellite imaging and mapping of land use and land cover, water bodies, or forest cover);
- ▶ Monitoring systems (e.g., field-monitoring stations for water quality, air pollution, or climate);
- ▶ Scientific research and special projects undertaken to fulfil domestic or international demand.

All data sources mentioned above can be used to calculate core indicators on plastic and build PSUT for plastic. While statistical surveys and administrative data are commonly used in economic statistics, environmental statistics are more commonly based on a wider range of data sources, including geospatial data, scientific estimates, and modelling. In some cases, the monetary supply and use tables from the national accounts can also be a data source for allocating the physical use of some plastic products.

It will be beneficial to collect disaggregated statistics and data to calculate core indicators on plastic, focusing on economic activity, product, waste type, territory, sex, age group, income group and other parameters to better analyse plastic flows throughout the life cycle, as well as to analyse the environmental and socio-economic impacts of plastic.

6.1 Data Sources of Plastic Supply and Use

6.1.1 Data on production

At the national level, information on plastic production should be possible to collect within the official statistics as part of economic statistics. Referring to the Classification of Statistical Activities (CSA) Version 2.0, these statistics are reflected under Domain 2 'Economic statistics' Activities 20303 'Mining, manufacturing, construction'.

At the regional and global levels, the main repositories of plastic production statistics are as follows:

- ▶ Industrial Commodity Statistics Database from the United Nations Statistics Division (UNSD). The coding of the database is based on the Central Product Classification (CPC). However, for some commodity categories, production data is only available for limited countries or areas.

- ▶ Prodcorn database from Eurostat. For the European Union, the data on domestic production can be extracted from Eurostat's Prodcorn database. The classification system of the Prodcorn database is Prodcorn List, an 8-digit coding system.

Both the Industrial Commodity Statistics Database and the Prodcorn database provide data in physical and monetary terms.

6.1.2 Data on trade

At the national level, Data on trade should be collected in official statistics as part of economic statistics. Referring to the CSA Version 2.0, these statistics are reflected under Domain 2 'Economic statistics' Activities 204 'International trade'.

At the regional and global levels, the main repositories of plastic trade statistics are as follows:

- ▶ UN Comtrade database. Compiled by UNSD, the Comtrade database, 'the world's most comprehensive global trade data platform' (United Nations, n.d.), covers approximately 200 countries. Trade data can be extracted from the Comtrade database based on the Harmonized System (HS), the Standard International Trade Classification (SITC), or the Classification by Broad Economic Categories (BEC).
- ▶ UNCTADstat Data Centre. In the database, plastic trade flows are divided into five life cycle categories, which are primary plastic, intermediate forms of plastic, intermediate manufactured plastic products, final manufactured plastic products, and plastic waste. It is also based on the Harmonized System (HS) (UNCTAD, n.d.).
- ▶ Comext database from Eurostat. Comext is the database for detailed statistics on international trade-in goods for the European Union. The Combined Nomenclature (CN) is applied in the database. A CN code, a subdivision of the nomenclature, is an 8-digit number, whose first 6 digits follow the same coding system as the Harmonized System (HS).

It should be noted that the plastic trade statistics may not cover the complete trade flows of plastic since exemption threshold is applied in some countries or regions. For example, European Union (EU) 'Member States shall define each year thresholds expressed in annual values of intra-Community trade, below which parties are exempted from providing any Intrastat information or may provide simplified information' (Eurostat, 2021). It means in practice that the intra-EU plastic trade flows below the threshold in a company are estimated for in the official statistics, such as Eurostat (Eurostat, 2023), leading potentially to inaccuracies, especially for imports or exports of unit low value, such as wastes or cheap plastic products.

6.1.3 Data on consumption

Data on consumption may be available from several sources. Data could be available from reporting in countries that have extended producer responsibility schemes on plastic. In such schemes, importers or producers may be obliged to report on the data of products placed on the market. Such data could be used; however, it should be noted that, usually, the more mass a reporter declares, the higher the compliance fees, so the reported mass may be undercounted. The amount of plastic consumption embodied in some products can be estimated based on particular industry reports or datasets. For example, the amount of plastic consumption embodied in vehicles can be calculated based on the sales or the number of newly registered vehicles for the year. With little availability of detailed consumption statistics, it is more practical to estimate the plastic consumption with the proxy indicator 'apparent consumption' as proposed in Chapter 4.1.

To be able to estimate 'apparent consumption' in Equations [3], [4], and [5], data on production and trade is necessary, which can be collected based on the data sources listed in Section 6.1.1 and Section 6.1.2, respectively. The plastic parts are also necessary for estimating the plastic embedded in plastic-containing products, which are listed in Annex 1, Annex 3, and Annex 4.

6.2 Data Sources of Plastic Waste

This section discusses the potential data sources of plastic waste generation and formal waste handling, including formal waste collection, waste treatment, and trade of plastic waste.

6.2.1 Data on plastic waste generated

Official statistics on plastic waste generated are very limited. At the national level, these statistics can be collected as part of environmental statistics. Referring to the CSA Version 2.0, these statistics are reflected under Domain 3 'Environment' Activities 303 'Residuals'.

Plastic waste generated can be estimated using Equations [6] and [7] in Section 5.1. Data sources on production and trade can be collected based on the sources listed in Section 6.1.1 and Section 6.1.2, respectively. Assumptions on parameters L and f can be found in Section 6.2.5.

6.2.2 Data on waste management

Data on formal waste collection and treatment at the country level is more available than data on waste generated. However, data on formal plastic waste collection and treatment is still very limited. Referring to the CSA Version 2.0, these statistics are reflected under Domain 3 'Environment' Activities 303 'Residuals'.

Data on formal plastic waste collection can be collected through household surveys, municipalities' administrative records, secondary raw materials collection points, and plastic recycling facilities. Recyclers usually have more detailed information on their plastic waste inputs, capacities, and even processing loss, which can be very valuable for the waste system.

Box 10: National examples of statistics on plastic waste management

Norway: Statistics Norway receives information regarding plastic waste through the Municipality-State-Reporting (KOSTRA), a system that encompasses all 356 municipalities in Norway. The data collected pertains to a single general category for plastic waste. Any sorting analysis carried out is encouraged to be reported via KOSTRA. This information is used to assign mixed waste to its core components, including plastic waste.

Data on plastic waste from the remaining sectors in the Waste Account³ is collected through surveys and registry data to estimate total plastic amounts from all NACE-sectors and waste streams.

Based on Statistic Norway's Waste Account and sorting analysis data, the estimated amount of plastic waste for 2021 was approximately 620,000 tonnes. Out of this total, 250,000 tonnes were categorised as sorted plastic waste, while the remaining 370,000 tonnes consisted of plastic found in mixed waste. However, it is important to note that this estimate does not include plastic incorporated into mixed waste products such as vehicles and electronic waste.

Norway has started to estimate plastic shares in other waste products such as textiles, vehicles, and electronic waste, but the research is still in progress.

The data collected in the Waste account for Norway also forms the basis for estimating the treatment of plastic waste. The treatment of the sorted plastics as well as plastics in mixed waste is used as an estimate for the treatment of total plastics.

In 2021, 61 percent of all the plastic waste that was sorted out and delivered as plastics was sent to material recovery. If plastic in mixed waste is also added to the calculation, a significantly smaller percentage is being sent for material recovery. Treatment of the plastic in mixed waste is difficult to estimate, and estimates are surrounded with uncertainty. Most of the plastic in mixed waste is still expected to be treated along with other parts of the mixed waste. It is also possible that some portions undergo an additional sorting process for material recovery, but the exact figures are unclear. However, assuming no further sorting processes occur, the material recovery percentage could be as low as 29 percent, with energy recovery/incineration accounting for 57 percent.

6.2.3 Data on plastic waste trade

As with trade of plastic products, data sources of plastic waste trade are as follows:

- ▶ At the national level, data should be collected in official statistics as part of international trade statistics. The related transactions are reported by Customs.
- ▶ At the national level, data on specific plastic waste trade can sometimes also be collected from the reporting of waste-handling companies.

3 Statistics Norway. (2023). Waste account. <https://www.ssb.no/en/natur-og-miljo/avfall/statistikk/avfallsregnskapet>.

UNSD/UNEP Questionnaire on Environment Statistics (waste section)

The UNSD/UNEP Questionnaire on Environment Statistics (waste theme) has been sent to more than 160 UN Member States (non-OECD and non-European Union countries) on a biennial frequency since 1999. The 2024 data collection cycle will mark 12 completed collection cycles. The substantially sized database that has been built over this period includes information on composition of municipal waste (table R4). The composition of municipal waste collects data on plastic (as well as paper, paperboard, textiles, glass, metals, organic material, etc.) as a percentage of total municipal waste. Total municipal waste is collected in thousands of tonnes. Assuming that data is available for both total municipal waste (thousands of tonnes) and plastic (percentage), an estimate can be made for mass (in thousands of tonnes) of plastic. However, country-owned data remains sporadic. Annual time series data is often available for total municipal waste but is less available for plastic. While some countries undertake studies of the composition of municipal waste (which is required for revealing percentage estimates for plastic, paper, textiles, glass, etc.) on an annual frequency, many others undertake such studies on a biennial basis or even every five years. As such, country-owned data availability on plastic remains a constraint, though the situation has been gradually improving over time.

OECD Questionnaire on the state of the environment (section on waste)

Developed in 1981 by the OECD and used jointly with Eurostat between 1990 and 2008 (when the Waste Framework Directive entered into force), the current version has been adopted in the course of several meetings of the OECD Working Party on Environmental Information. The questionnaire is regularly revised to take into account recent developments, to further harmonise major definitions, and to minimise duplication of efforts at the international level. For the European Union Member States, the OECD takes the data from the Waste Statistics Regulation, complemented by a joint data collection on municipal waste.

The OECD questionnaire includes information on plastic waste, distinguishing between packaging and non-packaging plastics (table 2A: Generation, recovery and recycling of selected waste streams). Countries are asked to report on plastic waste generated, waste collected for recycling, exported or imported plastic waste, amounts actually recycled, and the apparent consumption of plastics.

OECD data on plastic waste collected is published in the <https://data-explorer.oecd.org/> and in the OECD Environment at a Glance Indicators platform. Data on plastic waste generation and management remain limited for countries not covered by the Waste Statistics Regulation. Out of 12 such OECD countries, only 4 report data on plastic waste generated, 3 on waste recycled, and 4 on packaging waste. Fewer countries provide data on plastic packaging waste.

Eurostat data collection on waste generation

Data according to Regulation (EC) No 2150/2002 of the European Parliament and of the council of 25 November 2002 on waste statistics (Waste Statistics Regulation) is delivered for every even year to Eurostat for EWC-Stat Code 07.4 (Plastic wastes non-hazardous). The waste generation by waste category (EWC-STAT) and economic activities (NACE) in tonnes per year is reported in the table in Annex I. The Article 3 Collection of data in the Regulation states:

EC Member States shall, whilst complying with conditions as to quality and accuracy to be defined in accordance with the procedure referred to in Article 7(2), acquire the data necessary for the specification of the characteristics listed in Annexes I and II by means either of:

- surveys;
- administrative or other sources, such as the reporting obligations under Community legislation on waste management;
- statistical estimation procedures on the basis of samples or waste-related estimators; or
- a combination of these means.

In order to reduce response burdens, the national authorities and the Commission shall, subject to the limits and conditions fixed by each Member State and by the Commission in their respective fields of competence, have access to administrative data sources.

- ▶ At the regional and global levels, the main repositories of plastic trade statistics are the UN Comtrade database, reflecting data reported by countries; the UNCTADstat plastics database derived from UN Comtrade, based on HS codes; and the Comext database.

It should be noted that international trade statistics on plastic waste trade can be unreliable in some cases, since they are often not associated with any monetary flows and are not recorded in their entirety in the trade statistics.

6.2.4 Data on plastic released into the environment

Data on the release of plastic into the environment is not covered by statistical surveys and can be provided through:

- ▶ Administrative records of government and non-government agencies responsible for the environmental protection and natural resources, as well as other ministries and authorities;
- ▶ Remote sensing and thematic mapping, related, e.g., to the leakage of plastic into the environment;
- ▶ National monitoring systems, such as field-monitoring stations for water quality or air pollution;
- ▶ Scientific research (including citizen science) and special projects aimed at combating flows of plastic to the environment.

At the global level, the following repository can be recommended:

- ▶ Global Plastic Hub. The Global Plastic Hub, led by UNEP under the GPML, provides one-stop access to more than 80 key plastic lifecycle indicators from trade, waste management and legacy plastics through global map visualization and country dashboard. It envisages to be able to track progress on plastic pollution reduction globally and also inform national policies and action.

6.2.5 Data on chemicals used in plastic

All plastics are made of chemicals, of which polymers are the main ingredient. The most prevalent polymers in plastic production include: polyethylene (PE), polypropylene (PP), polystyrene (PS), polyvinylchloride (PVC), polyethylene terephthalate (PET), and polyurethane (PUR) resins. The polymer composition can be very diverse across different plastic products. Information available about polymer composition is available at the Plastic-KEY group level, which is shown in Table 6.1. Please note that the polymer composition varies in different countries, so gathering such information at the national level, instead of using the global average, is highly recommended.

With further development of plastic statistics, average polymer compositions are expected to be estimated at the Plastic-KEY level or HS code level. More information on international chemicals and waste management can also be found in the Global Framework on Chemicals (UNEP, 2024).

Table 6.1: Average polymer composition for Plastic-KEY groups (percent)

Plastic-KEY group	PE	PP	PS	PVC	PET	PUR	Other
Packaging	51	18	5	2	23	0	0
Transport	13	38	0	4	0	24	21
Building and construction	23	6	12	43	0	13	3
Electrical and electronic equipment	18	23	15	10	0	10	25
Consumer and institutional products	38	32	15	5	0	8	2
Industrial machinery	38	25	0	0	0	38	0
Other	20	32	5	11	0	19	13

Source: (Geyer et al., 2017; UNEP, 2022)

Other chemicals used in plastic products include a wide range of chemical additives, mainly as plasticizers or softeners, flame retardants, surface-active substances, stabilisers, colourants, and fragrances, and processing aids such as polymerisation catalysts and lubricants (Aurisano et al., 2021; Geyer et al., 2017). Studies have presented concerns due to the hazardous properties of chemical substances used for plastic production, and such hazardous properties could be released along plastic' life cycle (Wiesinger, Wang, and Hellweg, 2021). The chemical emission and release

can lead to ecosystem and human exposures (UNEP, 2023a), during production, use, and waste phases. Data on the chemical substances of plastic products and their composition can be helpful to identify the hazardous level, but such information is still limited. Some information about additives is provided in Table 6.2.

6.3 Units of Measurement

This guideline provides recommendations for measuring flows of plastic along the life cycle in physical terms only. A common principle is that within a plastic flow account in physical terms only, one unit of measurement should be used to allow for aggregation and reconciliation across all accounting entries.

For the calculation of core plastic indicators and building plastic flow accounts, the recommended unit of measurement is the SI-unit 'tonne', or 1,000 kilograms. The input data for the calculation of core plastic indicators and building plastic flow accounts, presented in different units of measurements such as square meter, cubic meter, and piece, must be recalculated into a single unit chosen to obtain the final result. The information on unit weight can help convert the units of measurement to tonnes.

Plastic-containing products' weights contain plastic and other materials. Applying plastic content (the mass percentage of plastic in different products) to calculate the plastic embedded in plastic-containing products is recommended. Some tentative numbers are listed for the CPC version 2.1 codes (Annex 1) and the HS codes (Annex 3), which correspond to the plastic-containing products.

Table 6.2: Share of additive type in global plastic production

Additive type	Percentage
Plasticizers	34
Flame retardants	13
Heat stabilisers	5
Fillers	28
Impact modifiers	5
Antioxidants	6
Colourants	2
Lubricants	2
Light stabilisers	1
Other	4

Source: (Source: Geyer, Jambeck, and Law, 2017)



07

Core Indicators and Relevant Policies

7.1 Core Indicators

The indicators arising from the framework should capture the overall picture and the most essential aspects of plastic flows along the life cycle at the national level. Expressing the indicators in tonnes (t, 1,000 kg) or kilotonnes (kt), proportionate to the total plastics consumption or plastics waste generation (where appropriate), is recommended. For cross-country comparisons, kg/capita should also be used, which should support comparison between countries, as well as computation of regional and global averages. When linking the plastic flows with economic factors, plastic flow per unit of GDP (for example, kg/USD) can be applied to inform the plastic production, consumption, and waste relative to economic output. The following indicators should be constructed, based on the reporting system.

1. Plastic Production

The 'Plastic Production' indicator reflects the amount of plastic produced within the economic territory of the country during the year.

To calculate plastic production at the national level, plastic in three separate flows should be considered: plastic in primary forms, semi-finished plastic products, and plastic in finished products, rather than as a single flow. These three separate flows are proposed to meet policy needs while at the same time avoiding double-counting, when, for example, plastic in primary forms could be counted twice, as a separate product and as part of a finished plastic product. More details are discussed in Chapter 3.1.

2. Plastic Imports, excluding waste

The 'Plastic Imports, excluding waste' indicator reflects the amount of plastic produced outside the economic territory of the country and imported into that country during the year. Disaggregating between plastic in primary forms, semi-finished plastic products, and plastic in finished products is recommended.

To calculate plastic imports at the national level, the recommendation is to total plastic in primary forms, semi-finished plastic products, finished plastic products, and plastic embedded in plastic-containing products, produced outside the country and imported into that country during the year. The indicator can be presented as mass, proportion of apparent consumption of plastics and plastic imports per capita. More details are discussed in Chapter 3.2.

3. Plastic Exports, excluding waste

The 'Plastic Exports, excluding waste' indicator reflects the amount of plastic produced within the economic territory of the country and exported from that country to other countries during the year. Disaggregating between plastic in primary forms, semi-finished plastic products, and plastic in finished products is recommended.

To calculate plastic exports at the national level, the recommendation is to total plastic in primary forms, semi-finished plastic products, finished plastic products, and plastic embedded in plastic-containing products produced within the country and exported to that country during the year. The indicator can be presented as mass and plastic exports per capita. More details are discussed in Chapter 4.2.

4. Apparent Consumption of Plastic

The 'Apparent Consumption of Plastic' indicator reflects the amount of plastic that appeared to have been consumed within the country's economic territory by industries, services, and households during the year. It is used as a proxy measure for plastic consumption within the country's economic territory.

To calculate the apparent plastic consumption at the national level, follow Equations [3], [4], [5], and the main steps explained in Chapter 4.1. For each Plastic-KEY, apparent plastic consumption can be calculated by totalling production and imports and then subtracting the export. Total apparent plastic consumption at the national level is the sum of apparent plastic consumption of all Plastic-KEYs.

5. Plastic Waste Generated

The 'Plastic Waste Generated' indicator reflects the amount of plastic waste generated within the country's economic territory during the year.

To calculate plastic waste generated at the national level, employ the 'product lifetime' methodology introduced in Chapter 5.1. Plastic waste generated can be estimated based on Equations [6] and [7] and will include plastic waste and waste plastic embedded in plastic-containing products generated from all the end-of-life products classified in Plastic-KEYs. The indicator can be presented as mass, proportion of total waste generated and plastic waste generated per capita.

6. Plastic Waste Imported

The 'Plastic Waste Imported' indicator reflects the amount of plastic waste collected outside the country's economic territory and then imported to that country during the year.

To calculate the plastic waste imported at the national level, it is proposed to gather information from the Customs or waste-handling companies.

7. Plastic Waste Exported

The 'Plastic Waste Exported' indicator reflects the amount of plastic waste collected within the country's economic territory and then exported to the outside of that country during the year.

To calculate the plastic waste exported at the national level, it is proposed to gather information from the Customs or those entities who export the waste.

8. Plastic Waste Collected in the Economic Territory

The 'Plastic Waste Collected in the Economic Territory' indicator reflects the amount of plastic waste collected within the country's economic territory during the year. The indicator can be presented as mass, proportion of plastics waste generated and proportion of total waste collected. More details can be found in Chapter 5.2.1.

9. Plastic Waste Treated in the Economic Territory

The 'Plastic Waste Treated in the Economic Territory' indicator reflects the amount of plastic waste treated within the country's economic territory during the year, including waste recovery and waste disposal. It should be disaggregated by type of treatment.

The indicator can be presented as mass, proportion of plastics waste generated and proportion of total waste treated.

To calculate plastic waste treated in the economic territory, total the waste treated by different treatment types. Main treatment types include recycling, composting, incineration with energy recovery, incineration without energy recovery, and landfill. More details can be found in Chapter 5.2.1.

10. National Plastic Recycling Rate

The 'National Plastic Recycling Rate' indicator reflects the amount of national plastic waste that is recycled, which is the plastic waste collected and recycled within the country's economic territory during the year, excluding plastic waste imported for recycling but including plastic waste exported for recycling.

To calculate the national plastic recycling rate, divide the amount of recycled national plastic waste by plastic waste generated.

11. Share of Secondary Plastic in Production

The 'Share of Secondary Plastic in Production' indicator reflects the percentage of secondary plastic recovered from waste treatment and used in production.

To calculate the Share of Secondary Plastic in Production at the national level, divide plastic production by the amount of secondary plastic usage. As with plastic production, the share of secondary plastic in production should also be considered in three separate flows: the share of secondary plastic in production of plastic in primary forms, the share of secondary plastic in production of semi-finished plastic products, and the share of secondary plastic in production of finished products. The potential data source of secondary plastic is the questionnaire to recyclers and is an important indicator for the circular economy.

12. Plastic waste handled informally

As with the formal sectors, the 'Plastic waste handled informally' indicator reflects the plastic waste that is handled by the informal sector. As with the formal sectors, informal waste handling usually includes waste collection, waste treatment, and waste disposal. It can cover a large share of waste handling in some countries, but it can also be resource-intensive and methodologically challenging to measure, whether estimated or monitored.

13. Plastic leakages

The 'Plastic leakages' indicator reflects the volume of plastic flowing from the country's economic territory into the environment during the year.

To calculate these plastic leakages, sum up the losses from different stages of plastic life cycle, including production, consumption, trade, waste generated and collected, and waste treatment.

7.2 Relevant Policies

Use of the statistical guideline in measuring flows of plastic along the life cycle by statisticians and other relevant experts at the national level will lead to the production of high-quality statistics on plastic that are comparable at the national, regional, and global level and, as result, will inform policies on various strategically important topics such as the 2030 Agenda for Sustainable Development, the Circular Economy, national source inventory on plastic, and waste management.

The 2030 Agenda for Sustainable Development

The 2030 Agenda for Sustainable Development calls for achieving 17 Goals, including Goal 12 on sustainable consumption and production. Specifically, Target 12.2 calls for sustainable management and efficient use of natural resources, while Targets 12.4 and 12.5 call for environmentally sound management of chemicals and all wastes, as well as substantially reducing waste generation through prevention, reduction, recycling, and reuse. The statistical guideline for plastic will provide a statistical framework to inform policymakers on achieving targets 12.2, 12.4, and 12.5 regarding plastic consumption and plastic waste and will assist countries in calculating indicators on plastic consumption and plastic waste generated.

One more goal that the statistical guideline can be used to monitor is Goal 14 on oceans and life below water and, especially, Target 14.1, which calls for preventing and significantly reducing marine pollution of all kinds. Data and statistics reflecting the flows of plastic from the economy to the environment can be used to inform policymakers on achieving Target 14.1, linking the target to the full life cycle of plastic, and providing a broader understanding of current issues.

Circular Economy

A circular economy is an economy where the value of materials in the economy is maximised and maintained for as long as possible; the input of materials and their consumption is minimised; and the generation of waste is prevented and negative environmental impacts reduced throughout the life cycle of materials (UNECE, 2024). The transition to a circular economy not only needs technology and financial support, but also requests the adequacy of the statistics and indicators for effectively supporting national policies and international work.

This guideline supports efforts to a transition to a circular economy by quantifying the stocks and flows of plastic in the economy. This is key for deriving targeted measures for plastic substitution and extending the lifespan of plastics-based products. This Guideline complements the CES Guidelines for Measuring Circular Economy, Part A: Conceptual Framework, Indicators and Measurement Framework (UNECE, 2024). It builds upon the same conceptual and measurement framework but provides details specific to measuring plastic. The CES Guidelines for Measuring Circular Economy also include a set of core indicators, of which some could be disaggregated for individual materials, including plastics, thus are directly linked with the indicators proposed above (e.g. CES core indicator 'Total waste generation' relates to proposed plastics indicator 'Plastic waste generated'; CES core indicator 'National recycling rate' relates to 'National plastic recycling rate', etc.).

National Source Inventory on Plastic

National inventories are a key resource in designing effective policy interventions and ongoing evaluation and revision. They can also provide input to life cycle analyses of plastic products, provide greater understanding of per capita plastic consumption rates, and help categorise and track plastic based on composition, waste generation, and other key indicators. Inventories allow for determining gaps in information, regulation, investment, resources, research, etc.; they can also help identify key stakeholders and actors across plastic life cycles. Well-designed inventories supported by regular data collection can assist governments with quantitative reporting obligations under numerous MEAs, such

as climate-related information under the Paris Agreement, waste generation, and trade under the Basel Convention and UPOP generation through open burning and illegal dumping as addressed under the Stockholm Convention.

The statistical guideline for plastic will assist in harmonising the design of national inventories to support aggregation at the regional and global levels of plastic-related data and enabling interpretation of progress toward global goals and targets. The guideline provides a methodology for gathering targeted and relevant data at the national level, classifying that data to populate inventories, and linking the data to key indicators, thus making the data meaningful for policymakers. The guideline will help countries determine common baseline measurements, identify data gaps in national baselines, and design efficient and cost-effective monitoring systems.

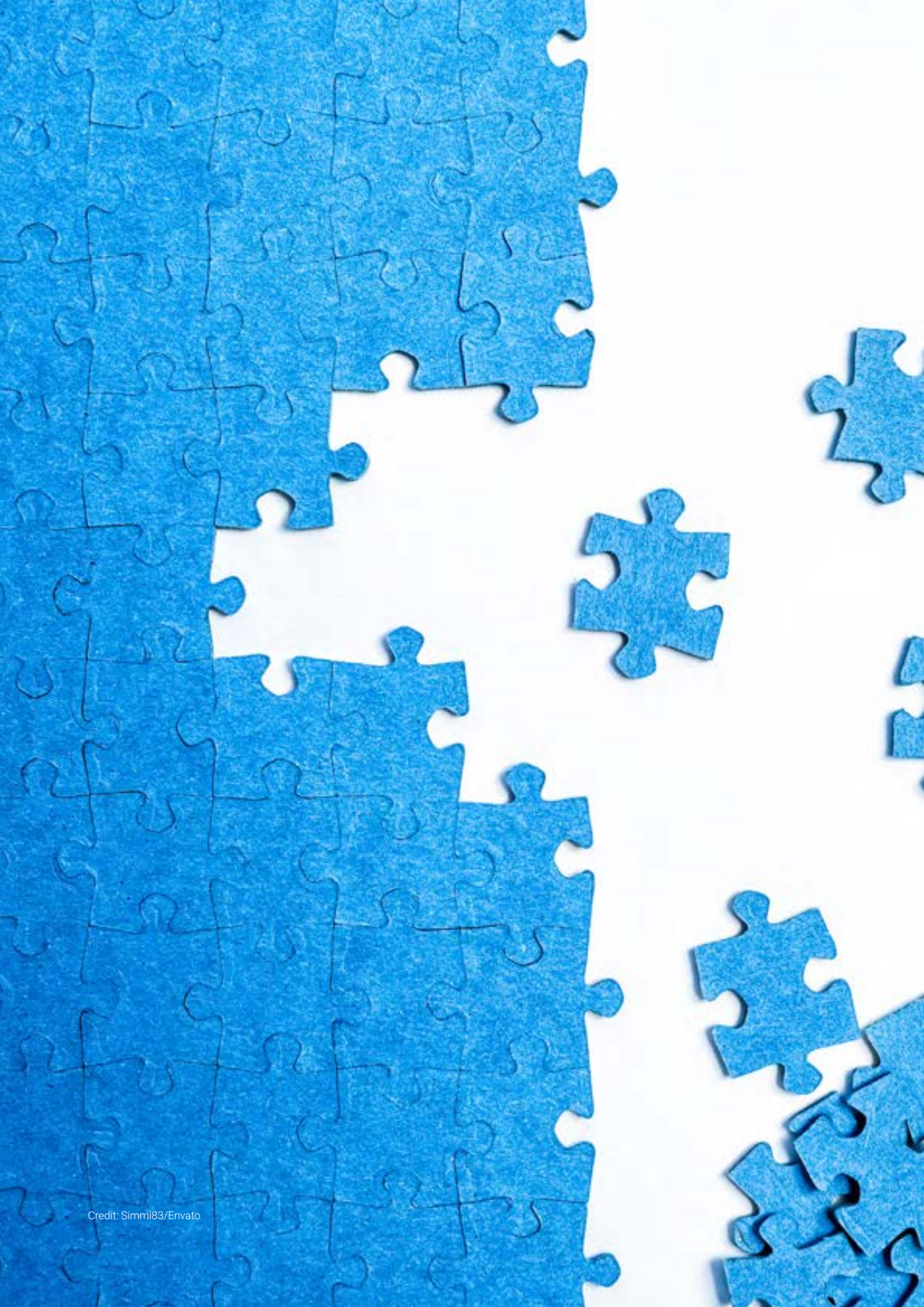
UNEA Resolution 5/14 entitled 'End plastic pollution: Towards an international legally binding instrument' requests that the Executive Director continue to support and advance the work of the Global Partnership on Marine Litter, while strengthening scientific, technical, and technological knowledge with regard to plastic pollution, including in the marine environment, on methodologies for monitoring and sharing available scientific and other relevant data and information. This request is related to the development of national source inventories on plastic, and the use of the statistical guideline will guide countries in their work on the matter.

Waste management

Most countries globally have National Waste Management Plans, which usually operate under the umbrella of national environmental legislation to create conditions in which the quality of the environment can be maintained and improved and which can contribute to sustainable development'. For waste management, waste policies should follow waste hierarchy, which prevents waste generation, restricting the burden of waste to the environment and optimising the use of waste in a circular economy. Within the context of national waste management plans, there are often specific policies for specific waste streams from certain sectors or certain types of waste based on their hazardousness, valuable materials, or socio-environmental impact. Plastic is used in many forms across society, and as a result, plastic waste management is cross-sectoral and cross-waste stream in national waste management plans. For example, some countries have specific restrictions on the usage of single use plastic or environmental producer responsibility schemes for packaging materials, which also cover plastic packaging. However, plastic is also embedded in durable goods, such as electronic and electrical equipment, and once they become waste, the plastics may contain brominated flame retardants, which are hazardous, and plastics should be safely disposed of.

The management of plastic waste may also involve the transboundary movement of waste. High-income countries, especially, may export plastic waste to other regions for pre-processing or disposal. Many developing countries export their plastic waste as they do not have a plastic recycling industry. The whereabouts and eventual fate of exported plastic waste is less transparent, thus increasing the chance for illegal waste management practices, and controlling transboundary movement of plastic waste is essential for ensuring the sound management of plastic waste globally. The fourteenth meeting of the Conference of the Parties to the Basel Convention in 2019 adopted amendments to Annexes II, VIII, and IX to the Convention with the objectives of enhancing the control of transboundary movements of plastic waste and clarifying the scope of the Convention as it applies to such waste. Accordingly, the shipment of hazardous plastic waste and most mixtures of plastic waste require the prior informed consent of the transit and importing countries (see <https://www.basel.int/Implementation/Plasticwaste/Amendments/FAQs/tabid/8427/Default.aspx>). Collecting information on the generation and transboundary movements of plastic waste for reporting under the Basel Convention remains a challenge for many countries. Thus, further collaboration between intra-governmental agencies to compile statistics for the Basel Convention, as well as for these plastics guidelines, is recommended.

The Dialogue on Plastics Pollution and Environmentally Sustainable Plastic Trade (DPP) has been launched in 2020 among a group of World Trade Organization (WTO). This initiative seeks to explore how enhanced cooperation in the WTO could contribute to tackle the plastic pollution issue and recognises the importance of the trade dimension (WTO, 2020). The dialogue is open to all WTO members.



08

Prospects for the next version of the statistical guideline

This guideline is the first attempt to address the lack of a detailed, globally agreed-upon statistical methodology for measuring flows of plastic at national, regional, and global levels. It covers the plastic flows throughout the life cycle, including plastic supply, plastic use, and plastic waste.

However, because of insufficient information at the moment or, in some cases, limited capacity, there are certain points likely to be discussed in detail in the follow-up version.

- ▶ Rubber is not covered in the scope of this guideline. Rubber materials are also from the same families of polymers, but rubbers are elastomers, i.e. polymers with an elastic property. As well, rubber and plastic have different uses in society. One example of a rubber-dominated product group is tyres. The inclusion of rubber can be considered in the follow-up version to expand the scope of product groups, given the applicability of the current guideline.
- ▶ This guideline indicates that some parameters, such as lifespan and plastic content, need to be updated periodically since they evolve over time. For example, lifespans of some products can be extended in the near future with increasing environmental consciousness, and plastic contents can also adapt as technology evolves. Furthermore, lifespans and plastic contents also differ geographically, so countries are encouraged to gather information on plastic content at the national level. For lifespan, the guideline proposes some average estimated numbers for certain Plastic-KEYs and product groups. Gathering more information at the Plastic-KEY level in the future, with sufficient data sources, is recommended. The guideline provides some tentative numbers on plastic content whenever possible. The periodical update and parameter refinement would require significant effort in the future at the national level and would lead to more accurate estimated results as well.
- ▶ The estimation of plastic waste generated with dynamic material flow analysis (or product lifetime methodology), proposed in Chapter 5.1, covers the plastic waste generated by household (final consumption) and plastic waste generated from scrapping and demolition of produced assets (accumulation) and excludes the plastic waste generated during manufacturing by industry. More discussion about the plastic generated during manufacturing should be included in more detail in the future when relevant data availability improves.
- ▶ Due to insufficient information, extraction of natural resources to produce plastic is not covered for PSUT in this version of the guideline; it will be discussed in detail in the follow-up version. A more complete PSUT with natural resources extraction would be necessary to provide a more complete conceptual perspective on plastic flows. However, in practice, building such PSUT can be difficult and challenging.
- ▶ With the improvement of data availability and comparability, more examples at national and regional levels can be included in the guideline's follow-up version, with specific focuses, such as data collection on informal waste handling.
- ▶ Detailed discussion on accounting for informal waste handling can be included in the future. The informal sector's waste-related activities play a significant role in some countries, but monitoring them is difficult. Such information is usually not covered by official statistics, and in some cases, the information is not well separated with formal sectors.
- ▶ The mapping between Plastic-KEYs and EWC-Stat is provided in Annex 5. A more detailed mapping between Plastic-KEYs and the European List of Waste (LoW) can be considered in the future with sufficient information on the plastic existence in different waste streams.
- ▶ This guideline could also be strengthened for plastic waste once the global statistical community reaches agreement on an international statistical classification of waste or any other appropriate classification.
- ▶ Clarifying plastics' chemical composition is still challenging for many countries. Such information can be discussed in more detail to better inform waste management and circular economy-related policies, such as the disclosure of hazardous substances and the additives potentially impeding plastic recycling.
- ▶ This guideline describes the plastic life cycle using production, consumption, trade and environment statistics in physical terms, following the SNA and SEEA principles for flow accounts. At the same time, it will be beneficial to complement the plastic life cycle with supplementary indicators, for example using labour, education, health and income statistics, paying particular attention to disaggregation by sex, age group, income group and others.



Annex 1: CPC codes relevant to plastic

Annex 1 presents the CPC version 2.1 codes relevant to plastic. The Plastic-KEYs (product groups P1 'Packaging', P2 'Transport', P3 'Building and construction', P5 'Consumer and institutional products', P6 'Industrial machinery', P7 'Apparel and textile furnishing articles', and P8 'Other') and UNU-KEYs (P4 'Electronic and electrical equipment') are also listed in this Annex when applicable. The codes in the Annex are the most relevant ones. Countries can add more relevant CPC version 2.1 codes when plastic contents are available.

Please note that plastic contents listed here are based on publicly available publications and assumptions. The numbers will be updated periodically since they evolve over time. Plastic contents also differ geographically, so countries are encouraged to gather information on plastic content at the national level.

The CPC version 2.1 codes relevant to Plastic-KEYs P103, P104, P105, P106, P107, and P108 are listed as Plastic-containing products because of their plastic packaging.

Please note the * and ** in the table:

* symbolizes that even though this CPC/HS code represents semi-finished plastic, it still links to a Plastic-KEY and is used as an indicator to estimate the plastic in building and construction. The plastic content of the CPC/HS code represents the share of the product used in the P3 building and construction.

** represents the CPC code corresponding to multiple Plastic-KEYs. In this case, the countries need to add shares to the different Plastic-KEYs for each CPC code based on national production volume.

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
Plastic in primary forms						
347			Plastics in primary forms	NA	NA	1
	3471	34710	Polymers of ethylene, in primary forms	NA	NA	1
	3472	34720	Polymers of styrene, in primary forms	NA	NA	1
	3473	34730	Polymers of vinyl chloride or of other halogenated olefins, in primary forms	NA	NA	1
	3474	34740	Polyacetals, other polyethers and epoxide resins, in primary forms; polycarbonates, alkyd resins, polyallyl esters and other polyesters, in primary forms	NA	NA	1
	3479	34790	Other plastics, in primary forms; ion exchangers	NA	NA	1
Semi-finished plastic products						
262	2621	26210	Synthetic staple fibres, carded, combed or otherwise processed for spinning	NA	NA	1
	2622	26220	Artificial staple fibres, carded, combed or otherwise processed for spinning	NA	NA	1
264	2641	26410	Sewing thread of man-made filaments or staple fibres	NA	NA	1
	2642	26421	Yarn of man-made filaments, multiple or cabled (other than sewing thread, high tenacity yarn of polyamides, polyesters or viscose rayon), not put up for retail sale	NA	NA	1
	2642	26422	Man-made filament yarn (other than sewing thread), put up for retail sale	NA	NA	1

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
	2643	26430	Yarn (other than sewing thread) of synthetic staple fibres, containing 85% or more by weight of such fibres	NA	NA	1
	2644	26440	Yarn (other than sewing thread) of synthetic staple fibres, containing less than 85% by weight of such fibres	NA	NA	1
	2645	26450	Yarn (other than sewing thread) of artificial staple fibres, containing 85% or more by weight of such fibres, not put up for retail sale	NA	NA	1
	2646	26461	Yarn (other than sewing thread) of artificial staple fibres, containing less than 85% by weight of such fibres, not put up for retail sale	NA	NA	1
	2646	26462	Yarn (other than sewing thread) of artificial staple fibres, put up for retail sale	NA	NA	1
267	2671	26710	Woven fabrics of man-made filament yarn, obtained from high tenacity yarn of nylon or other polyamides, of polyesters or of viscose rayon; woven fabrics of synthetic filament yarn, obtained from strip or the like; woven fabrics of synthetic filament yarn, consisting of layers of parallel yarns superimposed on each other at angles, the layers being bonded at the intersections of the yarns (including mesh scrims)	NA	NA	...
	2672	26720	Other woven fabrics of man-made filament yarn, containing 85% or more by weight of such filaments	NA	NA	...
	2673	26730	Other woven fabrics of man-made filament yarn	NA	NA	...
	2674	26740	Woven fabrics of synthetic staple fibres, containing 85% or more by weight of synthetic staple fibres	NA	NA	...
	2675	26750	Woven fabrics of artificial staple fibres, containing 85% or more by weight of artificial staple fibres	NA	NA	...
	2676	26760	Woven fabrics of man-made staple fibres, containing less than 85% of such fibres, mixed mainly or solely with cotton	NA	NA	...
	2677	26770	Woven fabrics of man-made staple fibres, containing less than 85% of such fibres, mixed mainly or solely with wool or fine animal hair	NA	NA	...
	2679	26790	Other woven fabrics of man-made staple fibres	NA	NA	...
268	2682	26820	Woven pile fabrics and chenille fabrics (other than terry towelling and narrow fabrics) of man-made fibres	NA	NA	...
279	2799	27996	Tyre cord fabric of high tenacity yarn of nylon or other polyamides, polyesters or viscose rayon	NA	NA	...
355	3551	35510	Synthetic filament tow and staple fibres, not carded or combed	NA	NA	1
	3552	35520	Synthetic filament yarn (except sewing thread and multiple or cabled yarn), not put up for retail sale	NA	NA	1
	3553	35530	Synthetic monofilament and strip	NA	NA	1
	3554	35540	Artificial filament tow and staple fibres, not carded or combed	NA	NA	1
	3555	35550	Artificial filament yarn (except sewing thread and multiple or cabled yarn), not put up for retail sale	NA	NA	1
	3556	35560	Artificial monofilament and strip	NA	NA	1

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
363	3631	36310	Monofilament of which any cross-sectional dimension exceeds 1mm, rods, sticks and profile shapes, of plastics	NA	NA	1
	3632*	36320*	Tubes, pipes and hoses, and fittings therefor, of plastics	P301	Tubes, pipes and hoses, and fittings therefor, of plastics, used in construction sector	0.2*
	3633*	36330*	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported or similarly combined with other materials	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
	3639*	36390*	Other plates, sheets, film, foil and strip, of plastics	P305	Other plates, sheets, film, foil and strip, of plastics, used in construction sector	0.0523*
Finished plastic products						
282	2824	28243	Apparel and clothing accessories of plastics (incl. gloves)	P703	Apparel and clothing accessories of plastics (incl. gloves)	1
364	3641	36410	Sacks and bags, of plastics	P102	Plastic sacks and bags	1
	3649	36490	Other articles for the conveyance or packaging of goods, of plastics; stoppers, lids, caps and other closures, of plastics	P101	Boxes, cases, crates, and similar packing articles made of plastic	1
369	3691	36910	Floor coverings of plastics, in rolls or in the form of tiles; wall or ceiling coverings of plastics	P302	Floor coverings of plastics, wall or ceiling coverings of plastics	1
	3692	36920	Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics	P303	Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics	0.042*
	3693	36930	Baths, wash-basins, lavatory pans and covers, flushing cisterns and similar sanitary ware, of plastics	P306	Plastics sanitary ware (baths, wash-basins, etc.)	1
	3694	36940	Tableware, kitchenware, other household articles and toilet articles, of plastics	P501	Household articles and toilet articles, of plastics	1
	3695	36950	Builders' ware of plastics n.e.c	P307	Other builders' ware of plastics n.e.c.	1
	3696	36960	Parts n.e.c. of lamps, lighting fittings, illuminated signs, illuminated name-plates and the like, of plastics	P307	Other builders' ware of plastics n.e.c.	1
	3697	36971	Safety headgear	P307	Other builders' ware of plastics n.e.c.	1
	3697	36972	Other headgear, of rubber or plastics	P307	Other builders' ware of plastics n.e.c.	0.5
	3698	36980	Electrical insulating fittings of plastics	P308	Other construction-related plastics	1
	3699	36990**	Articles of plastics n.e.c.	P502	Office or school supplies	1
	3699	36990**	Articles of plastics n.e.c.	P504	Furniture	1
	3699	36990**	Articles of plastics n.e.c.	P801	Plastic statuettes and other ornamental articles	1
	3699	36990**	Articles of plastics n.e.c.	P802	Monopods, bipods, tripods and similar articles	1
	3699	36990**	Articles of plastics n.e.c.	P809	Other articles	1
387	3870	38703	Prefabricated buildings, of plastics	P308	Other construction-related plastics	1

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
Plastic-containing products (Plastic content needs to be considered for plastic-containing products)						
213	2132	21321	Tomato juice	P103	Juices	0.02
	2132	21329	Other vegetable juices	P103	Juices	0.02
214	2143	21431	Orange juice	P103	Juices	0.02
	2143	21432	Grapefruit juice	P103	Juices	0.02
	2143	21433	Pineapple juice	P103	Juices	0.02
	2143	21434	Grape juice	P103	Juices	0.02
	2143	21435	Apple juice	P103	Juices	0.02
	2143	21439	Other fruit juices, n.e.c.	P103	Juices	0.02
	2149	21495	Nuts, groundnuts and other seeds, roasted, salted or otherwise prepared n.e.c.	P108	Food preparations	...
216	2161	21612	Soya bean oil, refined	P106	Oil	0.02
	2163	21632	Sunflower-seed and safflower-seed oil, refined	P106	Oil	0.02
231	2313	23140	Other cereal grain products (including corn flakes)	P108	Food preparations	...
237	2371	23710	Uncooked pasta, not stuffed or otherwise prepared	P108	Food preparations	...
	2372	23721	Pasta, cooked, stuffed or otherwise prepared (but not as a complete dish); couscous, except as a complete dish	P108	Food preparations	...
	2372	23722	Prepared dishes containing stuffed pasta; prepared couscous dishes	P108	Food preparations	...
239	2399	23997	Other prepared dishes and meals	P108	Food preparations	...
244	2441	24410	Bottled waters, not sweetened or flavoured	P104	Waters	0.01
	2449	24490	Other non-alcoholic caloric beverages	P105	Soft drinks	...
271	2718	27180	Quilts, eiderdowns, cushions, pouffes, pillows, sleeping bags and the like, fitted with springs or stuffed or internally fitted with any material or of cellular rubber or plastics	P702	Make-up textile articles other than apparel	...
272	2722	27220	Carpets and other textile floor coverings, woven, not tufted or flocked	P704	Carpets and other floor coverings	0.9
	2723	27230	Carpets and other textile floor coverings, tufted	P704	Carpets and other floor coverings	0.6
	2729	27290	Other carpets and textile floor coverings (including those of felt)	P704	Carpets and other floor coverings	0.4
273	2732	27320	Knotted netting of twine, cordage or rope; made up nets of textile materials; articles of yarn, strip, twine, cordage, rope or cables n.e.c.	P808	Fishing nets	...
282	2821	28210	Panty hose, tights, stockings, socks and other hosiery, knitted or crocheted	P701	Wearing apparel	...
	2822	28221	Men's or boys' suits, coats, jackets, trousers, shorts, and the like, knitted or crocheted	P701	Wearing apparel	...
	2822	28222	Men's or boys' shirts, underpants, pyjamas, dressing gowns, and similar articles, knitted or crocheted	P701	Wearing apparel	...
	2822	28223	Women's or girls' suits, coats, jackets, dresses, skirts, trousers, shorts and the like, knitted or crocheted	P701	Wearing apparel	...
	2822	28224	Women's or girls' blouses, shirts, petticoats, panties, nightdresses, dressing gowns, and similar articles, knitted or crocheted	P701	Wearing apparel	...
	2822	28226	Jerseys, pullovers, cardigans, waistcoats, and similar articles, knitted or crocheted	P701	Wearing apparel	...

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
	2822	28227	Babies' garments and clothing accessories, knitted or crocheted	P701	Wearing apparel	...
	2822	28228	Track suits, ski suits, swimwear and other garments, knitted or crocheted n.e.c.	P701	Wearing apparel	...
	2822	28229	Gloves, shawls, scarves, veils, ties, cravats and other made-up clothing accessories, knitted or crocheted; knitted or crocheted parts of garments or of clothing accessories	P701	Wearing apparel	...
	2823	28231	Men's or boys' suits, coats, jackets, trousers, shorts, and the like, of textile fabric, not knitted or crocheted	P701	Wearing apparel	...
	2823	28232	Men's or boys' shirts, singlets, underpants, pyjamas, dressing gowns, and similar articles, of textile fabric, not knitted or crocheted	P701	Wearing apparel	...
	2823	28233	Women's or girls' suits, coats, jackets, dresses, skirts, trousers, shorts, and the like, of textile fabric, not knitted or crocheted	P701	Wearing apparel	...
	2823	28234	Women's or girls' blouses, shirts, singlets, petticoats, panties, nightdresses, dressing gowns, and similar articles, of textile fabric, not knitted or crocheted	P701	Wearing apparel	...
	2823	28235	Babies' garments and clothing accessories, of textile fabric, not knitted or crocheted	P701	Wearing apparel	...
	2823	28236	Track suits, ski suits, swimwear, and other garments, of textile fabric, not knitted or crocheted n.e.c.	P701	Wearing apparel	...
	2823	28237	Brassieres, girdles, corsets, braces, suspenders, garters, and similar articles and parts thereof, whether or not knitted or crocheted	P701	Wearing apparel	...
	2823	28238	Handkerchiefs, shawls, scarves, veils, ties, cravats, gloves, and other made-up clothing accessories, of textile fabric, not knitted or crocheted; parts of garments or of clothing accessories, of textile fabric, not knitted or crocheted n.e.c.	P701	Wearing apparel	...
	2825	28250	Garments made up of felt or nonwovens; garments made up of textile fabrics impregnated or coated with plastics, rubber or other materials	P701	Wearing apparel	...
	2826	28261	Hat-forms, hat bodies, and hoods of felt; plateaux and manchons of felt; hat-shapes, plaited, or made by assembling strips of any material	P701	Wearing apparel	...
	2826	28262	Hats and other headgear, of felt, or plaited or made by assembling strips of any material, or knitted or crocheted or made up from lace or other textile fabric in the piece; hair-nets	P701	Wearing apparel	...
	2826	28269	Other headgear except headgear of rubber or of plastics, safety headgear and asbestos headgear; head-bands, linings, covers, hat foundations, hat frames, peaks and chinstraps, for headgear	P701	Wearing apparel	...
283	2833	28330	Artificial fur and articles thereof (except headgear)	P705	Artificial fur; articles thereof	...
292	2922	29220	Luggage, handbags and the like, of leather, composition leather, plastics sheeting, textile materials, vulcanized fibre or paperboard; travel sets for personal toilet, sewing or shoe or clothes cleaning	P506	Luggage, handbags, travel sets, and similar articles	0.075

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
352	3529	35290	Other articles for medical or surgical purposes	P803	Medical and pharmaceutical goods	...
353	3532	35323	Perfume and toilet preparations	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
381	3811	38112	Seats, primarily with wooden frames	P504	Furniture	0.075
	3811	38119	Other seats	P504	Furniture	0.075
	3814	38140	Other furniture n.e.c.	P504	Furniture	0.5
383	3834	38340	Musical instruments, the sound of which is produced, or must be amplified, electrically	P40703	Leisure (e.g. large exercise, sports equipment)	...
384	3844	38440	Other articles and equipment for sports or outdoor games	P511	Sporting balls and other sport equipment	...
385	3851	38510**	Dolls' carriages; wheeled toys designed to be ridden by children	P40701	Toys (e.g. car racing sets, electric trains, music toys, biking, computers)	...
	3851	38510**	Dolls' carriages; wheeled toys designed to be ridden by children	P510	Non-electric toys	...
	3852	38520	Dolls representing human beings; toys representing animals or non-human creatures	P510	Non-electric toys	...
	3853	38530	Parts and accessories of dolls representing human beings	P510	Non-electric toys	...
	3854	38540**	Toy electric trains and tracks, signals and other accessories therefor; reduced-size ("scale") model assembly kits and other construction sets and constructional toys	P40701	Toys (e.g. car racing sets, electric trains, music toys, biking, computers)	...
	3854	38540**	Toy electric trains and tracks, signals and other accessories therefor; reduced-size ("scale") model assembly kits and other construction sets and constructional toys	P510	Non-electric toys	...
	3855	38550	Puzzles	P510	Non-electric toys	...
	3856	38560	Other toys (including toy musical instruments)	P510	Non-electric toys	...
	3859	38590	Other articles for funfair, table or parlour games (including articles for billiards, pintables, special tables for casino games and automatic bowling alley equipment), except video games of a kind used with a television receiver	P40701	Toys (e.g. car racing sets, electric trains, music toys, biking, computers)	...
389	3891	38911	Pens, duplicating stylos, pencils, pen-holders, pencil-holders and similar holders, and parts thereof; crayons, pencil leads, pastels, drawing charcoals and chalks	P502	Office or school supplies	0.2
	3892	38921	Umbrellas, sun-umbrellas, walking-sticks, seat-sticks, whips, riding-crops and the like	P503	Umbrellas, sun-umbrellas, walking-sticks, seat-sticks and the like	0.5
	3897	38972	Human hair, dressed, thinned, bleached or otherwise worked; wool or other animal hair or other textile materials, prepared for use in making wigs or the like; wigs, false beards, eyebrows and eyelashes, switches and the like, of human or animal hair or of textile materials; articles of human hair n.e.c.	P512	Wigs, false beards, eyebrows and eyelashes, and the like	0.2
	3899	38991	Festive, carnival or other entertainment articles, including conjuring tricks and novelty jokes	P513	Festival, carnival or other entertainment articles	0.075
	3899	38993	Brooms, brushes, hand-operated mechanical floor sweepers (not motorized), mops and feather dusters; prepared knots and tufts for broom or brush-making; paint pads and rollers; squeegees (other than roller squeegees)	P509	Brooms, brushes, and artificial flowers	0.49

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
	3899	38994**	Cigarette lighters and other lighters; smoking pipes and cigar or cigarette holders, and parts thereof; combs, hair-slides and the like; hairpins, curling pins, curling grips, hair-curlers and the like (except electro-thermic apparatus), and parts thereof; scent sprays and similar toilet sprays, and mounts and heads therefor; powder-puffs and pads for the application of cosmetics or toilet preparations	P508	Lighters and smoking pipes	0.5
	3899	38994**	Cigarette lighters and other lighters; smoking pipes and cigar or cigarette holders, and parts thereof; combs, hair-slides and the like; hairpins, curling pins, curling grips, hair-curlers and the like (except electro-thermic apparatus), and parts thereof; scent sprays and similar toilet sprays, and mounts and heads therefor; powder-puffs and pads for the application of cosmetics or toilet preparations	P509	Brooms, brushes, and artificial flowers	0.5
	3899	38999**	Articles n.e.c. (including candles, tapers, skins of birds with their feathers, artificial flowers, entertainment articles, hand sieves, hand riddles, vacuum flasks, tailors' dummies, animated displays used for shop window dressing, and parts n.e.c.)	P509	Brooms, brushes, and artificial flowers	0.075
	3899	38999**	Articles n.e.c. (including candles, tapers, skins of birds with their feathers, artificial flowers, entertainment articles, hand sieves, hand riddles, vacuum flasks, tailors' dummies, animated displays used for shop window dressing, and parts n.e.c.)	P805	Tailors' dummies and other lay figures, automata and other animated displays used for shop window dressing	
429	4292	42921	Hand tools (including hand tools of a kind used in agriculture, horticulture or forestry, handsaws, files, pliers and metal cutting shears, hand-operated spanners, blow-lamps and clamps)	P804	Hand tools	...
435	4353	43530	Fork-lift trucks; other works trucks whether fitted with lifting or handling equipment; tractors of the type used on railway station platforms	P209	Fork-lift trucks and other work trucks; tractors of the type used on railway station platforms	0.075
439	4391	43912**	Air-conditioning machines	P40111	Air Conditioners (household-installed and portable)	...
		43912**	Air-conditioning machines	P40113	Professional Cooling (e.g. large air conditioners, cooling displays)	
	4391	43913**	Refrigerating and freezing equipment and heat pumps, except household-type equipment	P40112	Other Cooling (e.g. dehumidifiers, heat pump dryers)	...
		43913**	Refrigerating and freezing equipment and heat pumps, except household-type equipment	P40113	Professional Cooling (e.g. large air conditioners, cooling displays)	
	4392	43922	Weighing machinery (excluding balances of a sensitivity of 5 cg or better)	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
	4393	43934	Automatic goods vending machines	P41001	Non-Cooled Dispensers (e.g. for vending, hot drinks, tickets, money)	...
	4393	43934	Automatic goods vending machines	P41002	Cooled Dispensers (e.g. for vending, cold drinks)	...
441	4412	44121	Mowers for lawns, parks, or sportsgrounds	P40602	Professional Tools (e.g. for welding, soldering, milling)	...
	4414	44141	Pedestrian controlled tractors	P204	Tractors	0.01

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
	4414	44142	Track-laying tractors	P204	Tractors	0.01
	4414	44149	Other agricultural tractors	P204	Tractors	0.01
442	4423	44232	Electromechanical tools for working in the hand, with self-contained electric motor	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
	4424	44241	Electrical machinery and apparatus for soldering, brazing, or welding; electric machines and apparatus for hot spraying of metals or sintered metal carbides	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
444	4442	44428	Dumpers designed for off-highway use	P207	Trucks	0.075
446	4462	44622**	Laundry-type washing machines, each of a dry linen capacity exceeding 10 kg; dry-cleaning machines; drying machines for textile fabrics or articles, each of a dry linen capacity exceeding 10 kg	P40101	Professional Heating & Ventilation (excl. cooling equipment)	...
	4462	44622**	Laundry-type washing machines, each of a dry linen capacity exceeding 10 kg; dry-cleaning machines; drying machines for textile fabrics or articles, each of a dry linen capacity exceeding 10 kg	P40104	Washing Machines (incl. combined dryers)	...
	4462	44622**	Laundry-type washing machines, each of a dry linen capacity exceeding 10 kg; dry-cleaning machines; drying machines for textile fabrics or articles, each of a dry linen capacity exceeding 10 kg	P40105	Dryers (wash dryers, centrifuges)	...
	4462	44629	Other machinery for textile and apparel production n.e.c.	P40101	Professional Heating & Ventilation (excl. cooling equipment)	...
447	4471	44710	Tanks and other armoured fighting vehicles, motorized, and parts thereof	P210	Tanks and other armoured fighting vehicles, motorised, and parts thereof	0.075
448	4481	44811**	Refrigerators and freezers, household type, electric or non-electric	P40108	Fridges (incl. combi-fridges)	...
	4481	44811**	Refrigerators and freezers, household type, electric or non-electric	P40109	Freezers	...
	4481	44812**	Dishwashing machines and clothes or linen washing or drying machines, household type, electric or non-electric	P40102	Dishwashers	...
	4481	44812**	Dishwashing machines and clothes or linen washing or drying machines, household type, electric or non-electric	P40104	Washing Machines (incl. combined dryers)	...
	4481	44812**	Dishwashing machines and clothes or linen washing or drying machines, household type, electric or non-electric	P40105	Dryers (wash dryers, centrifuges)	...
	4481	44813	Electric blankets	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
	4481	44814	Household sewing machines	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
	4481	44815**	Fans and ventilating or recycling hoods of the domestic type	P40106	Household Heating & Ventilation (e.g. hoods, ventilators, space heaters)	...
	4481	44815**	Fans and ventilating or recycling hoods of the domestic type	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
	4481	44816**	Other small electric domestic appliances (including vacuum cleaners, kitchen waste disposers, food mixers, shavers, hairdryers, smoothing irons, coffee makers, and toasters)	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
	4481	44816**	Other small electric domestic appliances (including vacuum cleaners, kitchen waste disposers, food mixers, shavers, hairdryers, smoothing irons, coffee makers, and toasters)	P40202	Food (e.g. toaster, grills, food processing, frying pans)	...
	4481	44816**	Other small electric domestic appliances (including vacuum cleaners, kitchen waste disposers, food mixers, shavers, hairdryers, smoothing irons, coffee makers, and toasters)	P40203	Hot Water (e.g. coffee, tea, water cookers)	...
	4481	44816**	Other small electric domestic appliances (including vacuum cleaners, kitchen waste disposers, food mixers, shavers, hairdryers, smoothing irons, coffee makers, and toasters)	P40204	Vacuum Cleaners (excl. professional)	...
	4481	44816**	Other small electric domestic appliances (including vacuum cleaners, kitchen waste disposers, food mixers, shavers, hairdryers, smoothing irons, coffee makers, and toasters)	P40205	Personal Care (e.g. toothbrushes, hairdryers, razors)	...
	4481	44817**	Electric instantaneous or storage water heaters and immersion heaters; electric space heating apparatus and soil heating apparatus; ovens; cookers, cooking plates, boiling rings, grillers, and roasters	P40103	Kitchen (e.g. large furnaces, ovens, cooking equipment)	...
	4481	44817**	Electric instantaneous or storage water heaters and immersion heaters; electric space heating apparatus and soil heating apparatus; ovens; cookers, cooking plates, boiling rings, grillers and roasters	P40106	Household Heating & Ventilation (e.g. hoods, ventilators, space heaters)	...
	4481	44817**	Electric instantaneous or storage water heaters and immersion heaters; electric space heating apparatus and soil heating apparatus; ovens; cookers, cooking plates, boiling rings, grillers, and roasters	P40114	Microwaves (incl. combined, excl. grills)	...
	4481	44817**	Electric instantaneous or storage water heaters and immersion heaters; electric space heating apparatus and soil heating apparatus; ovens; cookers, cooking plates, boiling rings, grillers and roasters	P40203	Hot Water (e.g. coffee, tea, water cookers)	...
	4482	44825	Central heating boilers, for producing hot water or low pressure steam	P40001	Non-Cooled Dispensers (e.g. for vending, hot drinks, tickets, money)	...
449	4491	44911	Centrifugal clothes driers	P40105	Dryers (wash dryers, centrifuges)	...
	4491	44917**	Stand-alone photocopiers, printers, and facsimile machines	P40304	Printers (e.g. scanners, multifunctionals, faxes)	...
	4491	44917**	Stand-alone photocopiers, printers, and facsimile machines	P40307	Professional IT (e.g. servers, routers, data storage, copiers)	...
	4491	44919	Special-purpose machinery n.e.c. (including machinery for isotopic separation, machines for assembling electric lamps in glass envelopes, machines for manufacturing glassware, and rope-making machines)	P40204	Vacuum Cleaners (excl. professional)	...
451	4511	45110	Typewriters and word-processing machines	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
	4513	45130	Electronic calculators and pocket-size data recording, reproducing, and displaying machines with calculating functions	P40301	Small IT (e.g. routers, mice, keyboards, external drives & accessories)	...

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
	4514	45141	Accounting machines, cash registers, postage-franking machines, ticket-issuing machines and similar machines, incorporating a calculating device (except point-of-sale terminals, ATMs, and similar machines)	P40307	Professional IT (e.g. servers, routers, data storage, copiers)	...
	4514	45142**	Point-of-sale terminals, ATMs and similar machines	P40307	Professional IT (e.g. servers, routers, data storage, copiers)	...
	4514	45142**	Point-of-sale terminals, ATMs, and similar machines	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
	4515	45150	Office type sheet-fed offset printing machinery	P40307	Professional IT (e.g. servers, routers, data storage, copiers)	...
	4516	45160	Other office machines	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
452	4522	45220	Portable automatic data processing machines weighing not more than 10 kg, such as laptops, notebooks, and sub-notebooks	P40303	Laptops (incl. tablets)	...
	4523	45230	Automatic data-processing machines, comprising in the same housing at least a central processing unit and an input and output unit, whether or not combined	P40302	Desktop PCs (excl. monitors, accessories)	...
	4524	45240	Automatic data processing machines presented in the form of systems	P40302	Desktop PCs (excl. monitors, accessories)	...
	4525	45250	Other automatic data-processing machines whether or not containing in the same housing one or two of the following types of units: storage units, input units, output units	P40302	Desktop PCs (excl. monitors, accessories)	...
	4526	45263	Inkjet printers used with data processing machines	P40304	Printers (e.g. scanners, multifunctionals, faxes)	...
	4526	45264	Laser printers used with data processing machines	P40304	Printers (e.g. scanners, multifunctionals, faxes)	...
	4526	45265	Other printers used with data processing machines	P40304	Printers (e.g. scanners, multifunctionals, faxes)	...
	4526	45266	Units performing two or more of the following functions: printing, scanning, copying, faxing	P40304	Printers (e.g. scanners, multifunctionals, faxes)	...
	4526	45269	Other input or output peripheral devices	P40301	Small IT (e.g. routers, mice, keyboards, external drives & accessories)	...
	4527	45271	Fixed media storage units	P40301	Small IT (e.g. routers, mice, keyboards, external drives, & accessories)	...
	4527	45272	Removable media storage units	P40301	Small IT (e.g. routers, mice, keyboards, external drives, & accessories)	...
	4528	45281**	Sound, video, network and similar cards for automatic data-processing machines	P40301	Small IT (e.g. routers, mice, keyboards, external drives & accessories)	...
	4528	45281**	Sound, video, network and similar cards for automatic data-processing machines	P40305	Telecom (e.g. (cordless) phones, answering machines)	...
	4528	45289	Other units of automatic data processing machines	P40301	Small IT (e.g. routers, mice, keyboards, external drives & accessories)	...
465	4651	46510**	Electric filament or discharge lamps; arc lamps	P40503	Straight Tube Fluorescent Lamps	...

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
	4651	46510**	Electric filament or discharge lamps; arc lamps	P40504	Special Lamps (e.g. professional mercury, high & low-pressure sodium)	...
	4653	46531**	Portable electric lamps designed to function by their own source of energy (except those for cycles or motor vehicles); electric ceiling or wall lighting fittings (except those for lighting public open spaces or thoroughfares); electric table, desk, bedside or floor-standing lamps; non-electrical lamps and lighting fittings; illuminated signs, illuminated name-plates, and the like	P505	Non-electrical lamps and lighting fittings	...
	4653	46531**	Portable electric lamps designed to function by their own source of energy (except those for cycles or motor vehicles); electric ceiling or wall lighting fittings (except those for lighting public open spaces or thoroughfares); electric table, desk, bedside or floor-standing lamps; non-electrical lamps and lighting fittings; illuminated signs, illuminated name-plates, and the like	P807	Illuminated signs	...
	4653	46531**	Portable electric lamps designed to function by their own source of energy (except those for cycles or motor vehicles); electric ceiling or wall lighting fittings (except those for lighting public open spaces or thoroughfares); electric table, desk, bedside or floor-standing lamps; non-electrical lamps and lighting fittings; illuminated signs, illuminated name-plates, and the like	P40501	Lamps (e.g. pocket, Christmas, excl. LED & incandescent)	...
	4653	46531**	Portable electric lamps designed to function by their own source of energy (except those for cycles or motor vehicles); electric ceiling or wall lighting fittings (except those for lighting public open spaces or thoroughfares); electric table, desk, bedside or floor-standing lamps; non-electrical lamps and lighting fittings; illuminated signs, illuminated name-plates, and the like	P40506	Household Luminaires (incl. household incandescent fittings)	...
	4653	46532	Lighting sets of a kind used for Christmas trees	P40506	Household Luminaires (incl. household incandescent fittings)	...
	4653	46539	Other electric lamps and lighting fittings (including lamps and lighting fittings of a kind used for lighting public open spaces or thoroughfares)	P40507	Professional Luminaires (offices, public space, industry)	...
469	4691	46910	Electrical ignition or starting equipment of a kind used for internal combustion engines; generators and cut-outs of a kind used in conjunction with internal combustion engines; electrical lighting or signalling equipment (except filament or discharge lamps), windscreen wipers, defrosters and demisters, of a kind used for cycles or motor vehicles	P40506	Household Luminaires (incl. household incandescent fittings)	...
	4692	46921	Burglar or fire alarms and similar apparatus	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
	4692	46929**	Other electric sound or visual signalling apparatus, except for cycles or motor vehicles, and except electromechanical traffic control equipment for transport facilities	P40309	Flat-Panel Display Monitors (LCD, LED)	...
	4692	46929**	Other electric sound or visual signalling apparatus, except for cycles or motor vehicles, and except electromechanical traffic control equipment for transport facilities	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
	4693	46939**	Other electrical equipment n.e.c. (including electro-magnets; electro-magnetic couplings; clutches and brakes; electro-magnetic lifting heads; electrical particle accelerators; electrical signal generators and apparatus for electro-plating, electrolysis or electrophoresis)	P40505	LED lamps (incl. retrofit LED lamps)	...
	4693	46939**	Other electrical equipment n.e.c. (including electromagnets; electromagnetic couplings; clutches and brakes; electromagnetic lifting heads; electrical particle accelerators; electrical signal generators and apparatus for electro-plating, electrolysis, or electrophoresis)	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
471	4715	47150	Diodes, transistors and similar semi-conductor devices; photosensitive semi-conductor devices; light emitting diodes; mounted piezo-electric crystals	P40002	Cooled Dispensers (e.g. for vending, cold drinks)	...
472	4721	47211	Transmission apparatus incorporating reception apparatus	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
	4721	47213	Television cameras	P40406	Cameras (e.g. camcorders, foto & digital still cameras)	...
	4721	47214	Video camera recorders	P40406	Cameras (e.g. camcorders, foto & digital still cameras)	...
	4721	47215	Digital cameras	P40406	Cameras (e.g. camcorders, foto & digital still cameras)	...
	4722	47221	Line telephone sets with cordless handsets	P40305	Telecom (e.g. (cordless) phones, answering machines)	...
	4722	47222	Telephones for cellular networks or for other wireless networks	P40306	Mobile Phones (incl. smartphones, pagers)	...
	4722	47223**	Other telephone sets and apparatus for transmission or reception of voice, images, or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network)	P40305	Telecom (e.g. (cordless) phones, answering machines)	...
	4722	47223**	Other telephone sets and apparatus for transmission or reception of voice, images, or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network)	P40306	Mobile Phones (incl. smartphones, pagers)	...
	4722	47223**	Other telephone sets and apparatus for transmission or reception of voice, images, or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network)	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
473	4731	47311	Radio broadcast receivers (except of a kind used in motor vehicles), whether or not combined with sound recording or reproducing apparatus or a clock	P40402	Portable Audio & Video (e.g. MP3, e-readers, car navigation)	...
	4731	47312**	Radio broadcast receivers not capable of operating without an external source of power, of a kind used in motor vehicles	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
	4731	47313**	Television receivers, whether or not combined with radio-broadcast receivers or sound or video recording or reproducing apparatus	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
	4731	47313**	Television receivers, whether or not combined with radio-broadcast receivers or sound or video recording or reproducing apparatus	P40407	Cathode Ray Tube TVs	...

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
	4731	47313**	Television receivers, whether or not combined with radio-broadcast receivers or sound or video recording or reproducing apparatus	P40408	Flat-Panel Display TVs (LCD, LED, Plasma)	...
	4731	47314**	Monitors and projectors, not incorporating television reception apparatus and not principally used in an automatic data processing system	P40308	Cathode Ray Tube Monitors	...
	4731	47314**	Monitors and projectors, not incorporating television reception apparatus and not principally used in an automatic data processing system	P40309	Flat-Panel Display Monitors (LCD, LED)	...
	4731	47314**	Monitors and projectors, not incorporating television reception apparatus and not principally used in an automatic data processing system	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
	4732	47321**	Sound recording or reproducing apparatus	P40306	Mobile Phones (incl. smartphones, pagers)	...
	4732	47321**	Sound recording or reproducing apparatus	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
	4732	47323	Video recording or reproducing apparatus	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
	4733	47330**	Microphones and stands therefor; loudspeakers; headphones, earphones and combined microphone/speaker sets; audio-frequency electric amplifiers; electric sound amplifier sets	P40401	Small Consumer Electronics (e.g. headphones, remote controls)	...
	4733	47330**	Microphones and stands therefor; loudspeakers; headphones, earphones and combined microphone/speaker sets; audio-frequency electric amplifiers; electric sound amplifier sets	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
	4733	47330**	Microphones and stands therefor; loudspeakers; headphones, earphones and combined microphone/speaker sets; audio-frequency electric amplifiers; electric sound amplifier sets	P40405	Speakers	...
481	4812	48121	Electro-diagnostic apparatus, used in medical, surgical, dental, or veterinary sciences	P40802	Professional Medical (e.g. hospital, dentist, diagnostics)	...
	4813	48130	Other instruments and appliances (except syringes, needles and the like), used in dental sciences	P40802	Professional Medical (e.g. hospital, dentist, diagnostics)	...
	4815	48150	Other instruments and appliances used in medical, surgical, or veterinary sciences (including syringes, needles, catheters, cannulae, ophthalmic instruments and appliances n.e.c. and electro-medical apparatus n.e.c.)	P803	Medical and pharmaceutical goods	0.36
	4817	48172	Hearing aids and other appliances which are worn or carried, or implanted in the body, to compensate for a defect or disability	P40801	Household Medical (e.g. thermometers, blood pressure meters)	...
482	4821	48212	Rangefinders, theodolites, and tachymeters (tachometers) and levels	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
	4821	48219	Other surveying, hydrographic, oceanographic, hydrological, meteorological, or geophysical instruments and appliances	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
	4823	48233	Instruments for measuring length, for use in the hand (including measuring rods and tapes, micrometers and callipers) n.e.c.	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
	4824	48242	Cathode-ray oscilloscopes and cathode-ray oscillographs	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
	4824	48243	Instruments and apparatus (except cathode-ray oscilloscopes and oscillographs) for measuring or checking voltage, current, resistance or power, without a recording device (except electricity production or supply meters)	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
	4824	48244	Instruments and apparatus (except cathode-ray oscilloscopes and oscillographs) for telecommunications	P40305	Telecom (e.g. (cordless) phones, answering machines)	...
	4824	48249	Instruments and apparatus for measuring or checking electrical quantities n.e.c.	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
	4825	48251	Hydrometers and similar floating instruments, thermometers, pyrometers, barometers, hygrometers, and psychrometers	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
	4825	48252	Instruments and apparatus for measuring or checking the flow, level, pressure, or other variables of liquids or gases, except navigational, hydrological, or meteorological instruments and appliances, gas or liquid supply meters and automatic regulating or controlling instruments and apparatus	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
	4825	48253	Instruments and apparatus for physical or chemical analysis, for measuring or checking viscosity, porosity, expansion, surface tension, or the like, or for measuring or checking quantities of heat, sound, or light	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
	4826	48262	Machines and appliances for testing the mechanical properties of materials	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
	4826	48269**	Measuring, checking, regulating, or controlling instruments, appliances, and machines n.e.c.	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
	4826	48269**	Measuring, checking, regulating, or controlling instruments, appliances, and machines n.e.c.	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
483	4831	48312	Spectacles, goggles and the like, corrective, protective, or other	P507	Glasses	0.85
	4831	48313	Frames and mountings for spectacles, goggles, or the like	P507	Glasses	0.85
	4831	48314	Binoculars, monoculars, and other optical telescopes; other astronomical instruments, except instruments for radio-astronomy; compound optical microscopes	P507	Glasses	0.075
	4832	48323	Cinematographic projectors	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
	4832	48329	Other photographic equipment	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
	4834	48341	Photographic plates and film and instant print film, sensitized, unexposed	P806	Photographic plates and film and instant print film	...
484	4841	48410	Watches	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
	4842	48420	Clocks	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
	4843	48430	Time of day recording apparatus, apparatus for measuring, recording or otherwise indicating intervals of time, and time switches, with clock or watch movement or with synchronous motor	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
	4844	48440	Watch or clock movements	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
491	4911	49111	Road tractors for semi-trailers	P204	Tractors	0.01
	4911	49112	Public-transport type passenger motor vehicles	P205	Public transport-type passenger motor vehicles	0.075
	4911	49113	Motor cars and other motor vehicles principally designed for the transport of persons (except public-transport type vehicles, vehicles specially designed for travelling on snow, and golf cars and similar vehicles)	P206	Passenger cars	0.075
	4911	49114	Motor vehicles n.e.c. for the transport of goods	P207	Trucks	0.075
	4911	49115	Crane lorries	P208	Special-purpose motor vehicles n.e.c.	0.075
	4911	49116	Motor vehicles, for the transport of persons, specially designed for travelling on snow; golf cars and similar vehicles	P205	Public transport-type passenger motor vehicles	0.075
	4911	49119	Special-purpose motor vehicles n.e.c.	P208	Special-purpose motor vehicles n.e.c.	0.075
492	4922	49222	Trailers and semi-trailers of the caravan type, for housing or camping	P214	Trailers and semi-trailers of the caravan type, for housing or camping	0.075
	4922	49229	Other trailers and semi-trailers (including trailers and semi-trailers for the transport of goods), except self-loading or self-unloading trailers or semi-trailers for agricultural purposes	P214	Trailers and semi-trailers of the caravan type, for housing or camping	0.075
493	4931	49311	Cruise ships, excursion boats and similar vessels, principally designed for the transport of persons; ferry boats of all kinds	P218	Large ships and vessels	0.075
	4931	49312	Tankers (ships)	P218	Large ships and vessels	0.075
	4931	49313	Refrigerator vessels (ships), except tankers	P218	Large ships and vessels	0.075
	4931	49314	Other vessels for the transport of goods and other vessels for the transport of both persons and goods	P218	Large ships and vessels	0.075
	4931	49315	Fishing vessels; factory ships and other vessels for processing or preserving fishery products	P218	Large ships and vessels	0.075
	4931	49316	Tugs and pusher craft	P221	Other vessels	0.075
	4931	49319	Other vessels (including light-vessels, fire-floats, dredgers, floating cranes, floating docks, warships and lifeboats other than rowing boats), except floating or submersible drilling or production platforms	P221	Other vessels	0.075
	4932	49320	Floating or submersible drilling or production platforms	P222	Rafts, tanks, coffer-dams, landing stages, buoys, beacons, and other floating structures	0.075
	4939	49390	Other floating structures	P222	Rafts, tanks, coffer-dams, landing stages, buoys, beacons, and other floating structures	0.075

CPC Group	CPC Class	CPC Subclass	Description	Plastic-KEY/ UNU-KEY	Plastic-KEY (/UNU-KEY) Description	Plastic Content (tentative)
494	4941	49410	Sailboats (except inflatable), with or without auxiliary motor	P220	Vessels for pleasure and sport	0.075
	4949	49490	Other vessels for pleasure or sports; rowing boats and canoes	P220	Vessels for pleasure and sport	0.075
495	4951	49511	Rail locomotives powered from an external source of electricity	P201	Locomotives	0.01
	4951	49512	Diesel-electric locomotives	P201	Locomotives	0.01
	4951	49519	Other rail locomotives; locomotive tenders	P201	Locomotives	0.01
	4952	49520	Self-propelled railway or tramway coaches, vans and trucks (except maintenance or service vehicles)	P202	Railway or tramway coaches, self-propelled	0.01
	4953	49531	Railway or tramway maintenance or service vehicles, whether or not self-propelled	P223	Other vehicles	0.01
	4953	49532	Railway or tramway passenger coaches, not self-propelled; luggage vans, post office coaches and other special-purpose railway or tramway coaches, not self-propelled (except maintenance or service vehicles)	P203	Railway or tramway coaches, self-propelled	0.01
	4953	49533	Railway or tramway goods vans and wagons, not self-propelled	P203	Railway or tramway goods vans and wagons, not self-propelled	0.01
496	4961	49610	Balloons and dirigibles; gliders, hang gliders and other non-powered aircraft	P215	Balloons and dirigibles; gliders, hang gliders and other non-powered aircraft	0.075
	4962	49621	Helicopters	P216	Helicopters, aeroplanes, and other powered aircraft	0.075
	4962	49622	Aeroplanes and other powered aircraft of an unladen weight not exceeding 2000 kg	P216	Helicopters, aeroplanes, and other powered aircraft	0.075
	4962	49623	Aeroplanes and other powered aircraft of an unladen weight exceeding 2000 kg	P216	Helicopters, aeroplanes, and other powered aircraft	0.075
	4963	49630	Spacecraft and spacecraft launch vehicles	P217	Spacecraft and spacecraft launch vehicles	0.075
499	4991	49911	Motorcycles and cycles fitted with an auxiliary motor, with reciprocating internal combustion piston engine of a cylinder capacity not exceeding 50 cc	P211	Motorcycles	0.075
	4991	49912	Motorcycles and cycles fitted with an auxiliary motor, with reciprocating internal combustion piston engine of a cylinder capacity exceeding 50 cc	P211	Motorcycles	0.075
	4991	49913	Motorcycles and cycles fitted with an auxiliary motor, other than those with reciprocating internal combustion piston engines; side-cars	P211	Motorcycles	0.075
	4992	49921	Bicycles and other cycles, not motorized	P212	Bicycles	0.075
	4992	49922	Invalid carriages	P213	Wheelchairs	0.075
Plastic waste (excluding the plastic waste embedded in other waste streams)						
392	3927	39270	Waste, parings and scrap of plastics	NA	NA	NA

Annex 2: SITC codes relevant to plastic

Annex 2 presents the SITC Rev. 4 codes relevant to plastic.

Please note that SITC Groups 048, 058, 059, 098, 111, 421, and 553 are listed as plastic-containing products because of their plastic packaging.

When it is necessary to link production statistics and trade statistics, correspondence tables between CPC, SITC and HS are published on the official UNSD website: <https://unstats.un.org/unsd/classifications/Econ>.

SITC Group	Sub-group	Basic heading	Description
Plastic in primary forms			
571	571.1	571.11	Polyethylene having a specific gravity of less than 0.94
		571.12	Polyethylene having a specific gravity of 0.94 or more
	571.2	571.2	Ethylene-vinyl acetate copolymers
	571.9	571.9	Other polymers of ethylene, in primary forms
572	572.1	572.11	Polystyrene, expansible
		572.19	Polystyrene, other
	572.9	572.91	Styrene-acrylonitrile (SAN) copolymers
		572.92	Acrylonitrile-butadiene-styrene (ABS) copolymers
		572.99	Other styrene polymers
573	573.1	573.11	Polyvinyl chloride, not mixed with any other substances
		573.12	Polyvinyl chloride, other, non-plasticized
		573.13	Polyvinyl chloride, other, plasticized
	573.9	573.91	Vinyl chloride-vinyl acetate copolymers
		573.92	Other vinyl chloride copolymers
		573.93	Vinylidene chloride polymers
		573.94	Fluoropolymers
		573.99	Other polymers of vinyl chloride/of other halogenated olefins
574	574.1	574.11	Polyacetals
		574.19	Other polyethers
	574.2	574.2	Epoxide resins
	574.3	574.31	Polycarbonates
		574.32	Alkyd resins
		574.33	Polyethylene terephthalate
		574.34	Other polyesters, unsaturated
		574.39	Polyesters in primary forms, n.e.s.
575	575.1	575.11	Polypropylene
		575.12	Polyisobutylene
		575.13	Propylene copolymers
		575.19	Other olefins
	575.2	575.21	Polymethyl methacrylate
		575.29	Other acrylic polymers

SITC Group	Sub-group	Basic heading	Description
	575.3	575.31	Polyamide-6, -11, -12, -6,6, -6,9, -6,10/-6,12
		575.39	Other polyamides
	575.4	575.41	Urea resins; thiourea resins
		575.42	Melamine resins
		575.43	Other amino resins
		575.44	Phenolic resins
		575.45	Polyurethanes
		575.5	575.51
	575.52		Cellulose acetates, plasticized
	575.53		Cellulose nitrates (including collodions)
	575.54		Cellulose ethers
	575.59		Other cellulose derivatives, n.e.s.
	575.9	575.91	Polymers of vinyl acetate
		575.92	Polymers of other vinyl esters; other vinyl polymers
		575.93	Silicones in primary forms
		575.94	Alginic acid, its salts & esters
		575.95	Natural polymers & modified natural polymers (e.g., hardened proteins, chemical derivatives of natural rubber), n.e.s.
		575.96	Petroleum resins, coumarone-indene resins, polyterpenes, polysulphides, polysulphones & plastics, n.e.s.
		575.97	Ion exchangers based on polymers of heading 571.11 to 575.95
Semi-finished plastic products			
581	581.1	581.1	Artificial guts (sausage casings) of hardened protein or cellulosic materials
	581.2	581.2	Tubes, pipes & hoses, rigid
	581.3	581.3	Flexible tubes, pipes, and hoses, having a minimum burst pressure of 27.6 Mpa
	581.4	581.4	Other tubes, pipes, and hoses, not reinforced or otherwise combined with other materials, without fittings
	581.5	581.5	Tubes, pipes, and hoses, not reinforced or otherwise combined with other materials, with fittings
	581.6	581.6	Other tubes, pipes, and hoses
	581.7	581.7	Fittings for tubes, pipes, and hoses (e.g., joints, elbows, flanges), of plastics
582	582.1	582.11	Plates, sheets, etc, self-adhesive, of plastics, in rolls of width < 20cm
		582.19	Plates, sheets, etc, self-adhesive, of plastics, not in rolls
	582.2	582.21	Other plates, sheets, film, strip, of polymers of ethylene, non-cellular and not reinforced, laminated, supported/similarly combined with other materials
		582.22	Other plates, sheets, film, strip, of polymers of propylene, non-cellular and not reinforced, laminated, supported/similarly combined with other materials
		582.23	Other plates, sheets, film, strip, of polymers of styrene, non-cellular and not reinforced, laminated, supported/similarly combined with other materials
		582.24	Other plates, sheets, film, strip, of polymers of vinyl chloride, non-cellular and not reinforced, laminated, supported/similarly combined with other materials
		582.25	Other plates, sheets, film, strip, of acrylic polymers, non-cellular and not reinforced, laminated, supported/similarly combined with other materials
		582.26	Other plates, sheets, film, strip, of polycarbonates, alkyd resins, polyallyl esters or other polyesters
		582.28	Other plates, sheets, film, strip, of cellulose/its chemical derivatives, n.e.s.
		582.29	Other plates, sheets, film, strip, of other plastics, non-cellular & not reinforced, laminated, supported/similarly combined with other materials
	582.9	582.91	Other plates, sheets, film, strip, of plastics, cellular
		582.99	Other plates, sheets, film, strip, of plastics, other than cellular

SITC Group	Sub-group	Basic heading	Description
583	583.1	583.1	Monofilament of ethylene, of which any cross-sectional dimension > 1 mm
	583.2	583.2	Monofilament, vinyl chloride, of which any cross-sectional dim. > 1 mm
	583.9	583.9	Monofilament of other plastic of which any cross-sect. dim. > 1mm
Finished plastic products			
813	813.9	813.92	Parts, n.e.s., of subgroup 813.1 (lamps and lighting fittings (including searchlights and spotlights), n.e.s.), and heading 813.2 (illuminated signs, illuminated name-plates and the like), of plastics)
821	821.7	821.71	Furniture, n.e.s., of plastics
848	848.2	848.21	Articles of apparel and clothing accessories, of plastics
893	893.1	893.11	Sacks & bags (including cones), of plastics
		893.19	Articles for the conveyance/packing of goods, n.e.s.; stoppers, lids, caps, and other closures
	893.2	893.21	Baths, shower-baths, sinks, wash-basins, bidets, lavatory pans, seats & covers, flushing cisterns, and similar sanitary ware
		893.29	Other builders' ware of plastics
	893.3	893.31	Floor coverings of plastics, whether or not self-adhesive, in rolls/in the form of tiles; wall/ceiling coverings of plastics
		893.32	Tableware, kitchenware, other household articles and toilet articles of plastics
	893.9	893.94	Office/school supplies of plastics
		893.95	Fittings for furniture, coachwork/the like, of plastics
		893.99	Other articles of plastics
899	899.2	899.21	Artificial flowers, foliage, and fruit and parts thereof; articles made of artificial flowers, foliage, or fruit, of plastics
Plastic-containing products			
048	048.1	048.11	Prepared foods obtained by the swelling/roasting of cereals/cereal products & from unroasted cereal flakes/from mixtures of unroasted & roasted cereal flakes/swelled cereals
		048.12	Cereals other than maize (corn), in grain form, precooked or otherwise prepared
		048.13	Other rolled/flaked cereal grains, except rice of subgroup 042.3
		048.14	Other worked cereal grains (e.g., hulled, pearled, clipped, sliced/kibbled), except rice of subgroup 042.3
		048.15	Germ of cereals, whole, rolled, flaked/ground
	048.3	048.3	Macaroni, spaghetti & similar products (pasta), uncooked, not stuffed or otherwise prepared
058	058.9	058.92	Nuts, groundnuts & other seeds, prepared/preserved, n.e.s.
059	059.1	059.1	Orange juice
	059.2	059.2	Grapefruit juice
	059.3	059.3	Juice of any other single citrus fruit
	059.9	059.91	Pineapple juice
		059.92	Tomato juice
		059.93	Grape juice (including grape must)
		059.94	Apple juice
		059.95	Juice of any other single fruit/vegetable
		059.96	Mixtures of fruit/vegetable juices
098	098.9	098.91	Pasta, cooked/stuffed; couscous, whether/not prepared
111	111.0	111.01	Waters, including natural/artificial mineral waters & aerated waters, not containing added sugar/other sweetening matter nor flavoured; ice & snow
		111.02	Waters (including mineral waters & aerated waters) containing added sugar/other sweetening matter/flavoured, & other non-alcoholic beverages, n.e.s.
421	421.1	421.19	Soybean oil, refined, & its fractions
	421.5	421.59	Sunflower seed/safflower oil, refined, & fractions thereof
541	541.9	541.99	Other pharmaceutical goods; waste pharmaceuticals

SITC Group	Sub-group	Basic heading	Description
553	553.2	553.2	Beauty/make-up preparations for the care of the skin (other than medicaments), including sunscreen/suntan preparations; manicure/pedicure preparations
	553.3	553.3	Preparations for use on the hair
	553.4	553.4	Preparations for oral/dental hygiene, including denture fixative pastes & powders; yarn used to clean between the teeth (dental floss), in individual retail packages
657	657.5	657.52	Knotted netting of twine, cordage/rope; made-up fishing nets & other made-up nets, of textile materials
	657.6	657.61	Hat forms, hat bodies & hoods of felt, neither blocked to shape nor with made brims; plateaux & manchons (including slit manchons), of felt
		657.62	Hat shapes, plaited/made by assembling strips of any material, neither blocked to shape nor with made brims, nor lined nor trimmed
659	659.4	659.42	Carpets, tufted, whether or not made up, of nylon/other polyamides
		659.43	Carpets & other textile floor coverings, knotted, whether or not made up, of other man-made textile fibres
	659.5	659.52	Carpets, woven, not tufted/flocked, of man-made textile materials
		659.53	Carpets & other textile floor coverings, not of pile construction & not made up, woven, not tufted/flocked
	659.6	659.61	Carpets, of felt, not tufted/flocked, whether or not made up
		659.69	Other carpets, whether or not made up
695	695.1	695.1	Hand tools, the following: spades, shovels, mattocks, picks, hoes, forks, and rakes; axes, billhooks, and similar hewing tools; secateurs and pruners of any kind; scythes, sickles, hay knives, hedge shears, timber wedges, and other tools of a kind used in agriculture
	695.2	695.21	Handsaws
		695.22	Files, rasps, and similar tools
		695.23	Pliers (including cutting pliers), pincers, tweezers, metal-cutting shears, pipe cutters, bolt croppers, perforating punches, and similar tools
	695.3	695.3	Spanners and wrenches, hand-operated (including torque meter wrenches but not including tap wrenches); interchangeable spanner sockets, with/without handles
	695.4	695.41	Drilling, threading, and tapping tools
		695.44	Screwdrivers
		695.45	Household tools, n.e.s.
721	721.2	721.21	Mowers for lawns, parks/sports grounds
722	722.3	722.3	Track-laying tractors
	722.4	722.41	Pedestrian-controlled tractors
		722.49	Other wheeled tractors
723	723.4	723.45	Tamping/compacting machinery, not self-propelled
724	724.3	724.33	Sewing-machines of the household type
	724.7	724.71	Household/laundry-type washing-machines (including machines which both wash and dry), each of a dry linen capacity exceeding 10 kg.
		724.72	Dry-cleaning machines
		724.73	Drying machines, each of dry linen capacity exceeding 10 kg (excluding those of subgroups 741.8 & 743.5)
		724.74	Machinery for washing (other than household/laundry-type machines), cleaning (other than dry-cleaning machines), wringing, pressing (including fusing presses), bleaching, dyeing, dressing, finishing (other than machines for the finishing of felt), coat
726	726.5	726.55	Sheet-fed office-type offset printing machinery (sheet size not > 22 x 36 cm)
	726.6	726.61	Letterpress printing machinery (excluding flexographic printing)
		726.69	Other printing machinery, n.e.s.

SITC Group	Sub-group	Basic heading	Description
728	728.1	728.12	Machine tools (including machines for nailing, stapling, gluing or otherwise assembling) for working wood, cork, bone, hard rubber, hard plastics/similar hard materials (other than machines of subgroups 731.1 & 745.1)
		728.12	Machine tools (including machines for nailing, stapling, gluing or otherwise assembling) for working wood, cork, bone, hard rubber, hard plastics/similar hard materials (other than machines of subgroups 731.1 & 745.1)
	728.3	728.33	Machinery for mixing/kneading earth, stone, ores/other mineral substances in solid (including powder/paste) form
731	731.3	731.37	Other horizontal lathes
	731.4	731.43	Drilling machines, n.e.s.
	731.6	731.69	Machine tools for deburring, polishing, or otherwise finishing metal, sintered metal carbides or cermets by means of grinding stones, abrasives/polishing products, n.e.s.
737	737.3	737.31	Soldering irons & guns
		737.32	Other brazing/soldering machines and apparatus
		737.33	Machines & apparatus for resistance welding of metal, fully/partly automatic
		737.34	Other machines & apparatus for resistance welding of metal
		737.35	Machines & apparatus for arc (including plasma-arc) welding of metal, fully/partly automatic
741	741.4	741.43	Refrigerating/freezing chests (other than household-type), cabinets, display counters, showcases, and similar refrigerating/freezing furniture
		741.45	Other refrigerating/freezing equipment; heat pumps
	741.5	741.51	Air-conditioning machines comprising a motor-driven fan and elements for changing the temperature and humidity, window/wall-types, self-contained/"split-system"
		741.55	Other air-conditioning machines, comprising a motor-driven fan & elements for changing the temperature and humidity
742	742.4	742.4	Reciprocating positive displacement pumps, n.e.s.
	742.6	742.6	Centrifugal pumps, n.e.s.
	742.7	742.71	Pumps for liquids, n.e.s.
743	743.4	743.41	Table, floor, wall, window, ceiling/roof fans with self-contained electric motor of an output not > 125 W.
		743.43	Other fans
		743.45	Hoods having a maximum horizontal side not > 120 cm
	743.5	743.55	Clothes driers
744	744.1	744.11	Self-propelled trucks powered by an electric motor, fitted with lifting/handling equipment
		744.12	Other self-propelled trucks fitted with lifting/handling equipment
		744.13	Other works trucks fitted with lifting/handling equipment
		744.14	Works trucks, electrical, self-propelled, not fitted with lifting/handling equipment
		744.15	Other self-propelled works trucks, not fitted with lifting/handling equipment; tractors of the type used on railway station platforms
	744.9	744.94	Parts of other lifting, handling, loading/unloading machinery of subgroups 744.7 & 744.8
745	745.2	745.21	Dishwashing machines (other than household-type)
	745.3	745.32	Personal weighing-machines (including baby scales); household scales
	745.6	745.63	Steam/sandblasting machines & similar jet-projecting machines
	745.9	745.95	Automatic goods-vending machines (e.g., postage stamp, cigarette, food/beverage machines), including money-changing machines
751	751.1	751.1	Typewriters other than printers of subgroups 726.5, 726.6 & 751.9; word-processing machines
	751.2	751.21	Electronic calculators capable of operation without an external source of electric power & pocket-size data recording, reproducing, and displaying machines with calculating functions
		751.22	Other calculating machines

SITC Group	Sub-group	Basic heading	Description
		751.24	Cash registers
		751.28	Accounting machines, postage-franking, ticket-issuing, and similar machines, incorporating a calculating device
	751.9	751.91	Duplicating machines
		751.93	Machines for sorting/folding mail/for inserting mail in envelopes/bands, machines for opening, closing/sealing mail, and machines for affixing/cancelling postage stamps
		751.94	Machines which perform two/more of the functions of printing, copying/ facsimile transmission, capable of connecting to an automatic data processing machine/to a network
		751.95	Other, capable of connecting to an automatic data processing machine/to a network
		751.96	Other printers, copying, and facsimile machines
		751.99	Office machines, n.e.s.
752	752.2	752.2	Portable automatic data processing machines, weighing not > 10 kg, consisting of a least a central processing unit, a keyboard and a display
	752.3	752.3	Other automatic data processing machines
	752.6	752.6	Input/output units, whether/not containing storage units in the same housing
	752.7	752.7	Storage units
	752.8	752.8	Other units of automatic data processing machines (excl. storage/input/output units)
	752.9	752.9	Data processing equipment, n.e.s.
761	761.3	761.3	Cathode-ray tube monitors
	761.4	761.4	Other monitors
	761.5	761.5	Projectors
	761.6	761.6	Reception apparatus for television, whether or not incorporating radio-broadcast receivers/sound/video recording/reproducing apparatus
762	762.1	762.11	Radio-broadcast receivers not capable of operating without an external source of power, of a kind used in motor vehicles, combined with sound-recording/ reproducing apparatus
		762.12	Radio-broadcast receivers not capable of operating without an external source of power, of a kind used in motor vehicles, not combined with sound-recording/ reproducing apparatus
	762.2	762.21	Radio-broadcast receivers capable of operating without an external source of power, combined with sound-recording/reproducing apparatus
		762.22	Radio-broadcast receivers capable of operating without an external source of power, not combined with sound-recording/reproducing apparatus
	762.8	762.81	Other radio-broadcast receivers, combined with sound-recording/reproducing apparatus
		762.82	Other radio-broadcast receivers, not combined with sound-recording/ reproducing apparatus but combined with a clock
		762.89	Other radio-broadcast receivers, n.e.s.
763	763.3	763.31	Sound recording/reproducing apparatus operated by coins, banknotes, bank cards, tokens/by other means of payment
		763.35	Turntables (record-decks)
		763.36	Telephone answering machines
		763.39	Other apparatus of sub-heading 763.3
	763.8	763.81	Video-recording/reproducing apparatus, whether or not incorporating a video tuner, magnetic tape-type
		763.84	Other video-recording/reproducing apparatus, whether or not incorporating a video tuner
764	764.1	764.11	Telephone sets, including telephones for cellular networks/for other wireless networks
		764.12	Other apparatus for transmission/reception of voice, images/other data, including apparatus for communication in a wired/wireless network (such as a local/wide area network)

SITC Group	Sub-group	Basic heading	Description
	764.2	764.21	Microphones & stands therefor
		764.22	Loudspeakers, mounted in their enclosures
		764.24	Headphones, earphones & combined microphone/speaker sets
		764.25	Audio-frequency electric amplifiers
		764.26	Electric sound amplifier sets
	764.3	764.32	Transmission apparatus incorporating reception apparatus
	764.8	764.84	Television cameras, digital cameras, and video camera recorders
	764.9	764.93	Parts & accessories suitable for use solely/principally with the apparatus & equipment of groups 761 & 762 & subgroups 764.3 & 764.8
		764.99	Parts & accessories suitable for use solely/principally with the apparatus falling within group 763
773	773.2	773.28	Insulating fittings for electrical machines, appliances/equipment, being fittings wholly of plastic materials apart from any minor components of metal incorporated during moulding solely for purposes of assembly (but not including insulators of heading
774	774.1	774.11	Electrocardiographs
		774.12	Other electrodiagnostic apparatus (including apparatus for functional exploratory examination/for checking physiological parameters)
775	775.1	775.11	Household-/laundry-type washing-machines (including machines which both wash and dry), each of a dry linen capacity not > 10 kg.
		775.12	Clothes-drying machines, each of a dry linen capacity not > 10 kg. (excluding those of heading 743.55)
	775.2	775.21	Refrigerators, household-type (electric/other), whether or not containing a deep-freeze compartment
		775.22	Deep-freezes, household-type (electric/other)
	775.3	775.3	Dishwashing machines of the household type
	775.4	775.41	Shavers with self-contained electric motor
		775.42	Hair clippers with self-contained electric motor
	775.5	775.51	Vacuum cleaners with self-contained electric motor
		775.56	Other vacuum cleaners
	775.7	775.72	Food grinders & mixers; fruit/vegetable juice extractors
		775.73	Other electromechanical domestic appliances with self-contained electric motor, other than vacuum cleaners of subgroup 775.5
	775.8	775.81	Electric instantaneous/storage water heaters & immersion heaters
		775.82	Electric space-heating apparatus & electric soil-heating apparatus
		775.83	Electrothermic hairdressing/hand-drying apparatus
		775.84	Electric smoothing-irons
		775.85	Electric blankets
		775.86	Microwave ovens; other ovens; cookers, cooking plates, boiling rings, grillers & roasters
		775.87	Electrothermic domestic appliances, n.e.s.
776	776.3	776.37	Photosensitive semiconductor devices; light-emitting diodes
778	778.2	778.22	Discharge lamps (other than ultraviolet lamps)
		778.24	Ultraviolet/infrared lamps; arc lamps
	778.3	778.34	Electrical lighting/signalling equipment (excluding articles of subgroup 778.2), windscreen wipers, defrosters, and demisters, of a kind used for cycles/motor vehicles
	778.4	778.41	Drills of all kinds
		778.43	Saws
		778.45	Other tools

SITC Group	Sub-group	Basic heading	Description
	778.7	778.78	Other electrical machines & apparatus, having individual functions, n.e.s.
	778.8	778.84	Electric sound/visual signalling apparatus (e.g., bells, sirens, indicator panels, burglar & fire alarms), other than those of heading 778.34/778.82
781	781.1	781.1	Vehicles specifically designed for travelling on snow; golf carts & similar vehicles
	781.2	781.2	Motor vehicles for the transport of persons, n.e.s.
782	782.1	782.11	Dumpers designed for off-highway use
		782.19	Motor vehicles for the transport of goods, n.e.s.
	782.2	782.21	Crane lorries
		782.23	Mobile drilling derricks
		782.25	Fire-fighting vehicles
		782.27	Concrete-mixer lorries
		782.29	Other special-purpose motor vehicles
783	783.1	783.11	Motor vehicles for the transport of ten/more persons, including the driver, with compression-ignition internal combustion engine (diesel/semi-diesel)
		783.19	Other motor vehicles for the transport of ten/more persons, including the driver
	783.2	783.2	Road tractors for semi-trailers
785	785.1	785.11	Motorcycles (including mopeds) & cycles fitted with an auxiliary motor, with/without side-cars; side-cars, with reciprocating internal combustion piston engine of a cylinder capacity not > 50 cc
		785.13	Motorcycles (including mopeds) & cycles fitted with an auxiliary motor, with/without side-cars; side-cars, with reciprocating internal combustion piston engine of a cylinder capacity exceeding 50 cc but not > 250 cc
		785.15	Motorcycles (including mopeds) & cycles fitted with an auxiliary motor, with/without side-cars; side-cars, with reciprocating internal combustion piston engine of a cylinder capacity exceeding 250 cc but not > 500 cc
		785.16	Motorcycles (including mopeds) & cycles fitted with an auxiliary motor, with/without side-cars; side-cars, with reciprocating internal combustion piston engine of a cylinder capacity exceeding 500 cc but not > 800 cc
		785.17	Motorcycles (including mopeds) & cycles fitted with an auxiliary motor, with/without side-cars; side-cars, with reciprocating internal combustion piston engine of a cylinder capacity exceeding 800 cc
		785.19	Other motorcycles (including mopeds) & cycles fitted with an auxiliary motor, with/without side-cars; side-cars
	785.2	785.2	Bicycles & other cycles (including delivery tricycles), not motorized
	785.3	785.31	Invalid carriages, whether or not motorized or otherwise mechanically propelled
786	786.1	786.1	Trailers & semi-trailers of the caravan type, for housing/camping
	786.2	786.22	Tanker trailers & tanker semi-trailers
		786.29	Other trailers & semi-trailers for the transport of goods
	786.8	786.83	Trailers & semi-trailers, n.e.s.
791	791.1	791.11	Rail locomotives powered from an external source of electricity
		791.15	Rail locomotives powered by electric accumulators
	791.2	791.21	Diesel-electric locomotives
		791.29	Rail locomotives, n.e.s.; locomotive tenders
	791.6	791.6	Railway/tramway coaches, vans, and trucks, self-propelled (other than maintenance & service vehicles of heading 791.81)
	791.7	791.7	Railway/tramway passenger coaches, not self-propelled; luggage-vans, post office coaches, and other special-purpose railway/tramway coaches, not self-propelled (excluding those of heading 791.81)
	791.8	791.81	Railway/tramway maintenance/service vehicles, whether or not self-propelled (e.g., workshops, cranes, ballast tampers, track-liners, testing coaches, and track inspection vehicles)
		791.82	Railway/tramway goods vans & wagons (freight cars), not self-propelled

SITC Group	Sub-group	Basic heading	Description
792	792.1	792.11	Helicopters, of an unladen weight not > 2,000 kg
		792.15	Helicopters, of an unladen weight exceeding 2,000 kg
	792.2	792.2	Aeroplanes & other aircraft, mechanically-propelled (other than helicopters), of an unladen weight not > 2,000 kg
	792.3	792.3	Aeroplanes & other aircraft, mechanically-propelled (other than helicopters), of an unladen weight exceeding 2,000 kg but not > 15,000 kg
	792.4	792.4	Aeroplanes & other aircraft, mechanically-propelled (other than helicopters), of an unladen weight exceeding 15,000 kg
	792.5	792.5	Spacecraft (including satellites) & spacecraft launch vehicles
	792.8	792.84	Balloons & dirigibles; gliders, hang gliders, and other non-powered aircraft
793	793.1	793.11	Inflatable vessels (including rowing boats and canoes)
		793.12	Sailboats, not inflatable, with/without auxiliary motor
		793.19	Non-inflatable rowing-boats & canoes & vessels for pleasure/sport, n.e.s.
	793.2	793.22	Tankers of all kinds
		793.24	Fishing vessels; factory ships & other vessels for processing/preserving fishery products
		793.26	Refrigerated vessels (other than tankers)
		793.27	Other vessels for the transport of goods (including vessels for the transport of both passengers & goods)
		793.28	Cruise ships, excursion boats, and similar vessels principally designed for the transport of persons; ferry-boats of all kinds
		793.29	Other vessels (including warships & lifeboats other than rowing-boats)
	793.5	793.51	Dredgers
		793.55	Floating/submersible drilling/production platforms
		793.59	Light vessels, fire-floats, floating cranes, and other vessels, n.e.s., the navigability of which is subsidiary to their main function
	793.7	793.7	Tugs & pusher craft
	793.9	793.91	Rafts, inflatable
		793.99	Floating structures, n.e.s.
811	811.0	811.0	Prefabricated buildings
812	812.1	812.17	Central heating boilers (other than those of group 711)
813	813.1	813.11	Chandeliers & other electric ceiling & wall lighting fittings (excluding those of a kind used for lighting public open spaces/thoroughfares)
		813.12	Portable electric lamps designed to function by their own source of energy (e.g., dry batteries, accumulators/magnetos), other than lighting equipment falling under heading 778.34
		813.13	Electric table, desk, bedside/floor-standing lamps
		813.15	Electric lamps & lighting fittings, n.e.s.
		813.17	Non-electrical lamps & lighting fittings
	813.2	813.2	Illuminated signs, illuminated name-plates, and the like
	813.9	813.92	Parts, n.e.s., of the goods of subgroup 813.1 & heading 813.2, of plastics
821	821.1	821.15	Seats, other than garden seats/camping equipment, convertible into beds
		821.18	Other seats
	821.2	821.27	Sleeping bags
		821.29	Other articles of bedding
	821.7	821.71	Furniture, n.e.s., of plastics
831	831.1	831.12	Handbags, whether or not with shoulder strap (including those without handle), with outer surface of sheeting of plastics/of textile materials
		831.19	Other handbags, whether or not with shoulder strap (including those without handle)
	831.2	831.22	Trunks, suitcases, vanity cases, executive cases, briefcases, school satchels, & similar containers, with outer surface of plastics/of textile materials

SITC Group	Sub-group	Basic heading	Description
	831.3	831.3	Travel sets for personal toilet, sewing/shoe/clothes cleaning
	831.9	831.91	Articles of a kind normally carried in the pocket/handbag
		831.99	Other travel goods, handbags & similar containers
841	841.1	841.12	Overcoats, raincoats, car coats, capes, cloaks, and similar articles, of textile materials other than wool/fine animal hair, men's/boy's
		841.19	Other outer garments, n.e.s., men's/boys' (not of 841.2, heading 841.3)
	841.2	841.22	Suits, men's/boys', of other than wool/fine animal hair, not knitted/crocheted
		841.23	Ensembles, men's/boys' (not of 845.2), of textile materials, not knitted/crocheted
	841.3	841.3	Jackets & blazers, men's/boys', of textile materials, not knitted/crocheted
	841.4	841.4	Trousers, bib & brace overalls, breeches & shorts, men's/boys', of textile materials, not knitted/crocheted
	841.5	841.59	Shirts, other textile material
	841.6	841.62	Nightshirts & pyjamas, men's/boys', not knitted/crocheted
842	842.1	842.11	Overcoats, raincoats, car coats, capes, cloaks & similar articles, women's/girl's, of textile materials, not knitted/crocheted
		842.19	Other outer garments, n.e.s., women's/girls', of textile materials, not knitted/crocheted
	842.2	842.21	Suits, women's/girls', of textile materials, not knitted/crocheted
		842.22	Ensembles, women's/girls', of textile materials, not knitted/crocheted
	842.3	842.3	Jackets & blazers, women's/girls', of textile materials, not knitted/crocheted
	842.4	842.4	Dresses, women's/girls', of textile materials, not knitted/crocheted
	842.5	842.5	Skirts & divided skirts, women's/girls', of textile materials, not knitted/crocheted
	842.6	842.6	Trousers, bib & brace overalls, breeches & shorts, women's/girls', of textile materials, not knitted/crocheted
	842.7	842.7	Blouses, shirts & shirt-blouses, women's/girls', of textile materials, not knitted/crocheted
	842.8	842.81	Slips & petticoats, women's/girls', of textile materials, not knitted/crocheted
		842.82	Nightdresses & pyjamas, women's/girls', of textile materials, not knitted/crocheted
		842.89	Other underwear & nightwear, women's/girls', of textile materials, not knitted/crocheted
843	843.1	843.1	Overcoats, car coats, capes, cloaks, anoraks (including ski jackets), windcheaters, wind jackets & similar articles (other than those of heading 843.23)
	843.2	843.21	Suits, men's/boys', of knitted/crocheted textile materials
		843.22	Ensembles, men's/boys', of knitted/crocheted textile materials
		843.23	Jackets & blazers, men's/boys', of knitted/crocheted textile materials
		843.24	Trousers, bib & brace overalls, breeches & shorts, men's/boys', of knitted/crocheted textile materials
	843.7	843.79	Shirts, men's/boys', knitted/crocheted of textile materials other than cotton
	843.8	843.81	Underpants & briefs, men's/boys', knitted/crocheted of textile materials
		843.82	Nightshirts & pyjamas, men's/boys', knitted/crocheted of textile materials
844	844.1	844.1	Overcoats, car coats, capes, cloaks, anoraks (including ski jackets), windcheaters, wind jackets & similar articles (other than those of heading 844.23)
	844.2	844.21	Suits, women's/girls', knitted/crocheted of textile materials
		844.22	Ensembles, women's/girls', knitted/crocheted of textile materials
		844.23	Jackets & blazers, women's/girls', knitted/crocheted of textile materials
		844.24	Dresses, women's/girls', knitted/crocheted of textile materials
		844.25	Skirts & divided skirts, women's/girls', knitted/crocheted of textile materials
		844.26	Trousers, bib & brace overalls, breeches & shorts, women's/girls', knitted/crocheted of textile materials

SITC Group	Sub-group	Basic heading	Description
	844.7	844.7	Blouses, shirts & shirt-blouses, women's/girls', knitted/crocheted of textile materials
	844.8	844.81	Slips & petticoats, women's/girls', knitted/crocheted of textile materials
		844.82	Briefs & panties, women's/girls', knitted/crocheted of textile materials
		844.83	Nightdresses & pyjamas, women's/girls', knitted/crocheted of textile materials
		844.89	Other underwear & nightwear, women's & girls', knitted/crocheted of textile materials
845	845.1	845.11	Babies' garments & clothing accessories, not knitted/crocheted
		845.12	Babies' garments & clothing accessories, knitted/crocheted
	845.2	845.21	Garments made up of fabrics of subgroup 657.1/heading 657.2
		845.22	Men's & boys' garments made up of fabrics (not knitted/crocheted) of heading 657.32, 657.33/657.34
		845.23	Women's/girls' garments made up of fabrics (not knitted/crocheted) of heading 657.32, 657.33/657.34
	845.3	845.3	Jerseys, pullovers, cardigans, waistcoats, and similar articles, knitted/crocheted
	845.5	845.51	Brassieres
		845.52	Girdles, corsets, braces, suspenders, garters, and similar articles
	845.6	845.61	Swimwear, men's/boys', not knitted/crocheted
		845.62	Swimwear, men's/boys', knitted/crocheted
		845.63	Swimwear, women's/girls', not knitted/crocheted
		845.64	Swimwear, women's/girls', knitted/crocheted
	845.8	845.81	Ski suits, not knitted/crocheted
		845.87	Articles of apparel, men's/boys', n.e.s., not knitted/crocheted
		845.89	Articles of apparel, women's/girls', n.e.s., not knitted/crocheted
	845.9	845.91	Track suits, knitted/crocheted
		845.99	Garments, knitted/crocheted, n.e.s.
846	846.1	846.12	Shawls, scarves, mufflers, mantillas, veils, and the like, not knitted/crocheted
		846.13	Ties, bow-ties & cravats, not knitted/crocheted
		846.14	Gloves, mittens, and mitts, not knitted/crocheted
		846.19	Other made-up clothing accessories; parts of garments/of clothing other than that of subgroup 845.5
	846.2	846.23	Graduated compression hosiery (e.g. stockings for varicose veins)
		846.24	Other pantyhose & tights
		846.25	Other women's full-length/knee-length hosiery, measuring per single yarn < 67 decitex
		846.29	Other hosiery, knitted/crocheted
	846.9	846.91	Gloves, mittens, and mitts impregnated coated/covered with plastics/rubber, knitted/crocheted of textile materials
		846.92	Other gloves, mittens, and mitts, knitted/crocheted
		846.93	Shawls, scarves, mufflers, mantillas, veils, and the like, knitted/crocheted of textile materials
		846.99	Made-up clothing accessories, n.e.s.; parts of garments/of clothing accessories
848	848.2	848.21	Articles of apparel & clothing accessories, of plastics
	848.3	848.32	Artificial fur & articles thereof
	848.4	848.42	Hats & other headgear, plaited/made by assembling strips of any material, whether or not lined/trimmed
		848.43	Hats & other headgear, knitted/crocheted/made up from lace, felt/other textile fabric in the piece (but not in strips), whether or not lined/trimmed; hairnets of any material, whether or not lined/trimmed
		848.44	Safety headgear, whether or not lined/trimmed
		848.45	Headgear, n.e.s., of rubber/plastics, whether or not lined/trimmed

SITC Group	Sub-group	Basic heading	Description
		848.48	Headbands, linings, covers, hat foundations, hat frames, peaks, and chin-traps, for headgear
871	871.1	871.11	Binoculars
		871.15	Other astronomical instruments (excluding instruments for radio astronomy)
		871.19	Parts & accessories (including mountings), of binoculars, telescopes, monoculars
872	872.1	872.11	Dental drill engines, whether or not combined on a single base with other dental equipment
	872.2	872.21	Syringes, needles, catheters, cannulae, and the like
	872.3	872.31	Mechanotherapy appliances; massage apparatus; psychological aptitude-testing apparatus
873	873.1	873.15	Electricity meters
	873.2	873.25	Speed indicators & tachometers; stroboscopes
874	874.1	874.11	Direction-finding compasses; other navigational instruments & appliances
		874.13	Surveying (including photogrammetrical surveying), hydrographic, oceanographic, hydrological, meteorological/geophysical instruments & appliances (excluding compasses); rangefinders
		874.14	Parts & accessories for the articles of heading 874.13
	874.2	874.23	Instruments for measuring length, for use in the hand (e.g., measuring rods & tapes, micrometers, calipers), n.e.s.
		874.25	Measuring/checking instruments, appliances & machines, n.e.s.; profile projectors
	874.3	874.31	Instruments & apparatus for measuring/checking the flow/level of liquids
		874.35	Instruments & apparatus for measuring/checking the pressure of liquids/gases
		874.37	Other instruments & apparatus for measuring liquids/gases
	874.4	874.41	Gas/smoke analysis apparatus
		874.46	Instruments & apparatus for physical/chemical analysis, n.e.s.
	874.5	874.53	Machines & appliances for testing the hardness, strength, compressibility, elasticity/other mechanical properties of materials (e.g., metals, wood, textiles, paper, plastics)
		874.55	Hydrometers & similar floating instruments, thermometers, pyrometers, barometers, hygrometers, psychrometers, recording/not, & any combination of these instruments
		874.56	Parts & accessories for the instruments of heading 874.55
	874.6	874.61	Thermostats
	874.7	874.73	Oscilloscopes & oscillographs
		874.75	Other instruments & apparatus, for measuring/checking voltage, current, resistance/power, without a recording device
		874.77	Other instruments & apparatus, specially designed for telecommunications (e.g., crosstalk meters, gain-measuring instruments, distortion factor meters, psophometers)
		874.78	Other instruments & apparatus for measuring/checking electrical quantities
881	881.1	881.13	Photographic flashlight apparatus & flashbulbs
		881.14	Parts & accessories for the photographic cameras of heading 881.11
	881.2	881.21	Cinematographic cameras, whether/not incorporating sound-recording/reproducing apparatus
		881.22	Cinematographic projectors, whether/not incorporating sound-recording/reproducing apparatus
		881.23	Parts & accessories for the cinematographic cameras of heading 881.21
	881.3	881.31	Microfilm, microfiche/other microform readers, whether/not capable of producing copies.
		881.32	Image projectors, n.e.s.
		881.33	Photographic (other than cinematographic) enlargers & reducers
		881.35	Apparatus & equipment for photographic (including cinematographic) laboratories (including apparatus for the projection of circuit patterns on sensitized semiconductor materials), n.e.s.; negatoscopes; projection screens

SITC Group	Sub-group	Basic heading	Description
882	882.2	882.2	Photographic plates & film in the flat, sensitized, unexposed, of any material other than paper, paperboard/textiles; instant print film in the flat, sensitized, unexposed, whether or not in packs
	882.3	882.3	Photographic film in rolls, sensitized, unexposed, of any material other than paper, paperboard/textiles; instant print film in rolls, sensitized, unexposed
884	884.2	884.21	Frames & mountings for spectacles, goggles/the like
		884.23	Spectacles, goggle, and the like, corrective, protective/other
885	885.3	885.31	Wrist-watches, electrically operated, whether or not incorporating a stop-watch facility
		885.39	Pocket watches & other watches (not wrist-watches)
	885.4	885.41	Wrist-watches, electrically operated, whether or not incorporating a stop-watch facility
		885.42	Other wrist-watches, whether/not incorporating a stopwatch facility
		885.49	Pocket-watches & other watches (not wrist-watches), not of 885.39
	885.5	885.51	Watch movements, battery/accumulator powered, complete & assembled
		885.52	Watch movements, not electrically operated, complete & assembled
	885.7	885.72	Clocks with watch movements (excluding clocks of heading 885.71), electrically operated
		885.73	Other clocks with watch movements (excluding clocks of heading 885.71)
		885.74	Alarm clocks, battery, accumulator/mains powered
		885.75	Other alarm clocks
		885.76	Wall clocks, battery, accumulator/mains powered
		885.77	Other wall clocks
		885.78	Other clocks, battery, accumulator/mains powered
		885.79	Clocks, n.e.s.
	885.9	885.95	Time switches with clock/watch movements/with synchronous motors
		885.96	Clock movements, complete & assembled
891	891.1	891.11	Tanks & other armoured fighting vehicles, motorized, whether or not fitted with weapons, & parts of such vehicles
894	894.2	894.2	Tricycles, scooters, pedal cars, and similar wheeled toys; dolls' carriages; dolls; other toys; reduced-size ("scale") models & similar recreational models, working or not; puzzles of all kinds
	894.3	894.31	Video games of a kind used with a television receiver
		894.39	Articles for funfair, table & parlour games, n.e.s.
	894.4	894.41	Lighting sets of a kind used for Christmas trees
		894.45	Other articles for Christmas festivities
		894.49	Other entertainment articles
	894.7	894.75	Golf equipment
		894.79	Sports goods, n.e.s.
895	895.2	895.21	Ballpoint pens; felt-tipped/other porous-tipped pens & markers; fountain-pens, stylograph pens & other pens; duplicating stylos; propelling/sliding pencils; penholders, pencil-holders & similar holders; parts (including caps and clips) the foregoing articles (not including goods of heading 895.22 or 895.23)
		895.22	Pen nibs & nib points
898	898.2	898.25	Keyboard instruments (other than accordions), the sound of which is produced/ must be amplified electrically (e.g., organs)
		898.26	Musical instruments, n.e.s., the sound of which is produced/must be amplified electrically (e.g., guitars, accordions)
899	899.2	899.21	Artificial flowers, foliage/fruit & parts thereof; articles made of plastics
	899.3	899.33	Cigarette lighters & other lighters, whether or not mechanical or electrical
		899.34	Liquid/liquefied-gas fuels in containers of a kind used for filling/refilling cigarette/similar lighters, of a capacity not > 300 cm ³
		899.37	Smoking pipes (including pipe bowls) & cigar/cigarette holders & parts thereof

SITC Group	Sub-group	Basic heading	Description
	899.4	899.41	Umbrellas & sun umbrellas (including walking-stick umbrellas, garden umbrellas & similar umbrellas)
	899.6	899.61	Hearing-aids (excluding parts & accessories)
	899.7	899.72	Brooms, brushes (including brushes constituting parts of machines, appliances/ vehicles), hand-operated mechanical floor sweepers, not motorized, mops & feather dusters; prepared knots & tufts for broom/brush making; paint pads & rollers; squeegees (other than roller squeegees)
	899.8	899.81	Hand sieves & hand riddles
		899.88	Tailors' dummies & other lay figures; automata & other animated displays used for shop-window dressing
		899.89	Combs, hair-slides & the like; hairpins, curling-pins, curling-grips, hair curlers & the like (other than those of heading 775.83) & parts thereof
	899.9	899.95	Wigs, false beards, eyebrows & eyelashes, switches, & the like, of human/animal hair/of textile materials; articles of human hair, n.e.s.
Plastic waste			
579	579.1	579.1	Waste, parings, and scrap of polymers of ethylene
	579.2	579.2	Waste, parings, and scrap of polymers of styrene
	579.3	579.3	Waste, parings, and scrap of polymers of vinyl chloride
	579.9	579.9	Waste, parings, and scrap of other plastics

Annex 3: Links between HS codes relevant to plastic and Plastic-KEYs

Annex 3 present the links between HS codes, relevant to plastic, and Plastic-KEYs (Amadei et al., 2022; Berge et al., 2023; UNEP, 2022). The product groups P1 'Packaging', P2 'Transport', P3 'Building and construction', P5 'Consumer and institutional products', P6 'Industrial machinery', P7 'Apparel and textile furnishing articles', and P8 'Other' are listed in this Annex. The relevant codes for P4 'Electronic and electrical equipment' are listed in Annex 4, which are also named as UNU-KEYs.

Please note that plastic contents listed here are based on publicly available publications and assumptions. The numbers will be updated periodically since they evolve over time. Plastic contents also differ geographically, so countries are encouraged to gather information on plastic content at the national level.

Please note that * in P3 'Building and construction'. It symbolizes that even this CPC/HS code represents the semi-finished plastic; it still links to a Plastic-KEY and is used as an indicator to estimate the plastic in building and construction. The plastic content of the CPC/HS code represents the share of the product used in the P3 'Building and construction'.

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
110412	Cereal grains; rolled or flaked, of oats	P108	Food preparations	...
110419	Cereal grains; rolled or flaked, other than oats	P108	Food preparations	...
110422	Cereal grains; worked (e.g. hulled, pearled, sliced or kibbled) of oats	P108	Food preparations	...
110423	Cereal grains; worked (e.g. hulled, pearled, sliced or kibbled) of maize (corn)	P108	Food preparations	...
110429	Cereal grains; worked, other than rolled or flaked (e.g. Hulled, pearled, sliced or kibbled) of cereals, excluding oats and maize, and rice of heading no.1006	P108	Food preparations	...
110430	Cereal; germ of cereals, whole, rolled, flaked or ground	P108	Food preparations	...
150790	Soya-bean oil and its fractions, whether or not refined (excl. chemically modified and crude)	P106	Oil	0.02
151219	Sunflower-seed or safflower oil and their fractions, whether or not refined, but not chemically modified (excl. crude)	P106	Oil	0.02
190211	Food preparations; pasta, containing eggs, uncooked, not stuffed or otherwise prepared	P108	Food preparations	...
190219	Food preparations; pasta, uncooked (excluding that containing eggs), not stuffed or otherwise prepared	P108	Food preparations	...
190220	Food preparations; pasta, stuffed (with meat or other substances), whether or not cooked or otherwise prepared	P108	Food preparations	...
190230	Food preparations; pasta (excluding stuffed), cooked or otherwise prepared	P108	Food preparations	...
190240	Food preparations; couscous	P108	Food preparations	...
190410	Food preparations; obtained by the swelling or roasting of cereals or cereal products	P108	Food preparations	...
190420	Food preparations; obtained from unroasted cereal flakes or from mixtures of unroasted cereal flakes and roasted cereal flakes or swelled cereals	P108	Food preparations	...
190430	Prepared foods obtained by the swelling or roasting of cereals or cereal products (e.g. corn flakes); cereals, not maize (corn), in grain form or in the form of flakes or other worked grains, from bulgur wheat	P108	Food preparations	...

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
190490	Food preparations; cereal or cereal products (excluding maize), in grain form, pre-cooked or otherwise prepared	P108	Food preparations	...
200811	Nuts; ground-nuts, whether or not containing added sugar, other sweetening matter or spirit	P108	Food preparations	...
200819	Nuts and other seeds; whether or not containing added sugar, other sweetening matter or spirit (excluding ground-nuts except in mixtures)	P108	Food preparations	...
200911	Frozen orange juice, unfermented, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
200912	Orange juice, unfermented, Brix value <= 20 at 20°C, whether or not containing added sugar or other sweetening matter (excl. containing spirit and frozen)	P103	Juices	0.02
200919	Orange juice, unfermented, whether or not containing added sugar or other sweetening matter (excl. containing spirit, frozen, and of a Brix value <= 20 at 20°C)	P103	Juices	0.02
200921	Grapefruit juice, unfermented, Brix value <= 20 at 20°C, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
200929	Grapefruit juice, unfermented, Brix value > 20 at 20°C, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
200931	Single citrus fruit juice, unfermented, Brix value <= 20 at 20°C, whether or not containing added sugar or other sweetening matter (excl. containing spirit, mixtures, orange juice and grapefruit juice)	P103	Juices	0.02
200939	Single citrus fruit juice, unfermented, Brix value > 20 at 20°C, whether or not containing added sugar or other sweetening matter (excl. containing spirit, mixtures, orange juice and grapefruit juice)	P103	Juices	0.02
200941	Pineapple juice, unfermented, Brix value <= 20 at 20°C, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
200949	Pineapple juice, unfermented, Brix value > 20 at 20°C, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
200950	Tomato juice, unfermented, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
200961	Grape juice, incl. grape must, unfermented, Brix value <= 30 at 20°C, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
200969	Grape juice, incl. grape must, unfermented, Brix value > 30 at 20°C, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
200971	Apple juice, unfermented, Brix value <= 20 at 20°C, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
200979	Apple juice, unfermented, Brix value > 20 at 20°C, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
200981	Cranberry (Vaccinium macrocarpon, Vaccinium oxycoccos) juice; lingonberry (Vaccinium vitis-idaea) juice, unfermented, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
200989	Juice of fruit or vegetables, unfermented, whether or not containing added sugar or other sweetening matter (excl. containing spirit, mixtures, and juice of citrus fruit, pineapples, tomatoes, grapes, incl. grape must, apples and cranberries)	P103	Juices	0.02

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
200990	Mixtures of fruit juices, incl. grape must, and vegetable juices, unfermented, whether or not containing added sugar or other sweetening matter (excl. containing spirit)	P103	Juices	0.02
220110	Mineral waters and aerated waters, not containing added sugar, other sweetening matter or flavoured	P104	Waters	0.01
220190	Ordinary natural water, not containing added sugar, other sweetening matter or flavoured; ice and snow (excl. mineral waters and aerated waters, sea water, distilled water, conductivity water or water of similar purity)	P104	Waters	0.01
220210	Waters, incl. mineral and aerated, with added sugar, sweetener or flavour, for direct consumption as a beverage	P104	Waters	0.01
220299	Non-alcoholic beverages (excl. water, fruit or vegetable juices, milk and beer)	P105	Soft drinks	...
300650	Pharmaceutical goods; first aid boxes and kits	P803	Medical and pharmaceutical goods	...
330410	Cosmetic and toilet preparations; lip make-up	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
330420	Cosmetic and toilet preparations; eye make-up	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
330430	Cosmetic and toilet preparations; manicure or pedicure preparations	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
330491	Cosmetic and toilet preparations; powders, whether or not compressed (excluding lip, eye, manicure or pedicure preparations)	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
330499	Cosmetic and toilet preparations; n.e.c. in heading no. 3304, for the care of the skin (excluding medicaments, including sunscreen or sun tan preparations)	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
330510	Hair preparations; shampoos	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
330520	Hair preparations; for permanent waving or straightening	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
330530	Hair preparations; lacquers	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
330590	Hair preparations; n.e.c. in heading no. 3305	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
330610	Oral or dental hygiene preparations; dentifrices	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
330620	Oral or dental hygiene preparations; yarn used to clean between the teeth (dental floss)	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
330690	Oral or dental hygiene preparations; other than dentifrices	P107	Cosmetic, toilet, hair, oral or dental hygiene preparations	...
370110	Photographic plates and film in the flat, sensitised, unexposed, for X-ray (excl. of paper, paperboard and textiles)	P806	Photographic plates and film and instant print film	...
370120	Instant print film in the flat, sensitised, unexposed, whether or not in packs	P806	Photographic plates and film and instant print film	...
370130	Photographic plates and film in the flat, sensitised, unexposed, with any side > 255 mm	P806	Photographic plates and film and instant print film	...
370191	Photographic plates and film in the flat, sensitised, unexposed, of any material other than paper, paperboard or textiles, for colour photography polychrome (excl. instant print film)	P806	Photographic plates and film and instant print film	...
370199	Photographic plates and film in the flat for monochrome photography, sensitised, unexposed, of any material other than paper, paperboard or textiles (excl. X-ray film and photographic plates, film in the flat with any side > 255 mm, and instant print film)	P806	Photographic plates and film and instant print film	...
370210	Photographic film in rolls, unexposed, for X-ray (excl. of paper, paperboard or textiles)	P806	Photographic plates and film and instant print film	...

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
370231	Photographic film incl. instant print film in rolls, sensitised, unexposed, without perforations, width <= 105 mm, for colour photography (polychrome) (excl. that of paper, paperboard or textiles)	P806	Photographic plates and film and instant print film	...
370232	Photographic film incl. instant print film in rolls, sensitised, unexposed, without perforations, width <= 105 mm, with silver halide emulsion for monochrome photography (excl. that of paper, paperboard or textiles and X-ray film)	P806	Photographic plates and film and instant print film	...
370239	Photographic film incl. instant print film in rolls, sensitised, unexposed, without perforations, width <= 105 mm, for monochrome photography (excl. film with silver halide emulsion, film made of paper, paperboard or textiles and X-ray film)	P806	Photographic plates and film and instant print film	...
370241	Photographic film incl. instant print film in rolls, sensitised, unexposed, without perforations, width > 610 mm, length > 200 m, for colour photography (polychrome) (excl. that of paper, paperboard or textiles)	P806	Photographic plates and film and instant print film	...
370242	Photographic film incl. instant print film in rolls, sensitised, unexposed, without perforations, width > 610 mm, length > 200 m, for monochrome photography (excl. that of paper, paperboard or textiles)	P806	Photographic plates and film and instant print film	...
370243	Photographic film incl. instant print film in rolls, sensitised, unexposed, without perforations, width > 610 mm, length <= 200 m (excl. that of paper, paperboard or textiles)	P806	Photographic plates and film and instant print film	...
370244	Photographic film incl. instant print film in rolls, sensitised, unexposed, without perforations, width > 105 mm to 610 mm (excl. that of paper, paperboard or textiles)	P806	Photographic plates and film and instant print film	...
370252	Photographic film, sensitised, in rolls, unexposed, with perforations, for colour photography (polychrome), width <= 16 mm (excl. of paper, paperboard or textiles)	P806	Photographic plates and film and instant print film	...
370253	Photographic film, sensitised, in rolls, unexposed, with perforations, for colour photography (polychrome), width > 16 mm to 35 mm, length <= 30 m, for slides	P806	Photographic plates and film and instant print film	...
370254	Photographic film, sensitised, in rolls, unexposed, with perforations, for colour photograph (polychrome), width > 16 mm but <= 35 mm, length <= 30 m (excl. of paper, paperboard and textiles; for slides)	P806	Photographic plates and film and instant print film	...
370255	Photographic film, sensitised, in rolls, unexposed, with perforations, for colour photography (polychrome), width > 16 mm but <= 35 mm, length > 30 m (excl. of paper, paperboard and textiles; for slides)	P806	Photographic plates and film and instant print film	...
370256	Photographic film, sensitised, in rolls, unexposed, with perforations, for colour photography (polychrome), width > 35 mm (excl. that of paper, paperboard or textiles)	P806	Photographic plates and film and instant print film	...
370296	Photographic film, sensitised, in rolls, unexposed, with perforations, for monochrome photography, width <= 35 mm, length <= 30 m (excl. of paper, paperboard and textiles; X-ray film)	P806	Photographic plates and film and instant print film	...
370297	Photographic film, sensitised, in rolls, unexposed, with perforations, for monochrome photography, width <= 35 mm, length > 30 m (excl. of paper, paperboard and textiles; X-ray film)	P806	Photographic plates and film and instant print film	...
370298	Photographic film, sensitised, in rolls, unexposed, with perforations, for monochrome photography, width > 35 mm (excl. of paper, paperboard and textiles; X-ray film)	P806	Photographic plates and film and instant print film	...
391721*	Rigid tubes, pipes and hoses, of polymers of ethylene*	P301	Tubes, pipes and hoses, and fittings therefor, of plastics, used in construction sector	0.2*

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
391722*	Rigid tubes, pipes and hoses of polymers of propylene*	P301	Tubes, pipes and hoses, and fittings therefor, of plastics, used in construction sector	0.2*
391723*	Rigid tubes, pipes and hoses, of polymers of vinyl chloride*	P301	Tubes, pipes and hoses, and fittings therefor, of plastics, used in construction sector	0.2*
391729*	Rigid tubes, pipes and hoses, of plastics (excl. those of polymers of ethylene, propylene and vinyl chloride)	P301*	Tubes, pipes and hoses, and fittings therefor, of plastics, used in construction sector	0.2*
391731*	Flexible tubes, pipes and hoses, of plastics, burst pressure $\geq 27,6$ MPa*	P301	Tubes, pipes and hoses, and fittings therefor, of plastics, used in construction sector	0.2*
391732*	Flexible tubes, pipes and hoses of plastics, not reinforced or otherwise combined with other materials, without fittings*	P301	Tubes, pipes and hoses, and fittings therefor, of plastics, used in construction sector	0.2*
391733*	Flexible tubes, pipes and hoses of plastics, not reinforced or otherwise combined with other materials, with fittings, seals or connectors*	P301	Tubes, pipes and hoses, and fittings therefor, of plastics, used in construction sector	0.2*
391739*	Flexible tubes, pipes and hoses, of plastics, reinforced or otherwise combined with other materials (excl. those with a burst pressure of $\geq 27,6$ MPa) *	P301	Tubes, pipes and hoses, and fittings therefor, of plastics, used in construction sector	0.2*
391740*	Fittings, e.g. joints, elbows, flanges, of plastics, for tubes, pipes and hoses*	P301	Tubes, pipes and hoses, and fittings therefor, of plastics, used in construction sector	0.2*
391810*	Floor coverings, whether or not self-adhesive, in rolls or in the form of tiles, and wall or ceiling coverings in rolls with a width of ≥ 45 cm, consisting of a layer of plastics fixed permanently on a backing of any material other than paper, the face side of which is grained, embossed, coloured, design-printed or otherwise decorated, of polymers of vinyl chloride*	P302	Floor coverings of plastics, wall or ceiling coverings of plastics	0.74*
391890	Floor coverings of plastics, whether or not self-adhesive, in rolls or in the form of tiles, and wall or ceiling coverings in rolls with a width of ≥ 45 cm, consisting of a layer of plastics fixed permanently on a backing of any material other than paper, the face side of which is grained, embossed, coloured, design-printed or otherwise decorated (excl. coverings of polymers of vinyl chloride)	P302	Floor coverings of plastics, wall or ceiling coverings of plastics	1
391910*	Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics, in rolls ≤ 20 cm wide*	P303	Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics	0.04184*
391990*	Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics, whether or not in rolls > 20 cm wide (excl. floor, wall and ceiling coverings of heading 3918) *	P303	Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics	0.04184*
392010*	Plates, sheets, film, foil and strip, of non-cellular polymers of ethylene, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392020*	Plates, sheets, film, foil and strip, of non-cellular polymers of ethylene, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
392030*	Plates, sheets, foil, film and strip, of non-cellular polymers of styrene, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392043*	Plates, sheets, film, foil and strip, of non-cellular polymers of vinyl chloride, containing by weight >= 6% of plasticisers, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392049*	Plates, sheets, film, foil and strip, of non-cellular polymers of vinyl chloride, containing by weight < 6% of plasticisers, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392051*	Plates, sheets, film, foil and strip, of non-cellular poly (methyl methacrylate), not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392059*	Plates, sheets, film, foil and strip, of non-cellular acrylic polymers, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. those of poly (methyl methacrylate), self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392061*	Plates, sheets, film, foil and strip, of non-cellular polycarbonates, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. those of poly (methyl methacrylate), self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392062*	Plates, sheets, film, foil and strip, of non-cellular poly (ethylene terephthalate), not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. those of poly (methyl methacrylate), self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392063*	Plates, sheets, film, foil and strip, of non-cellular unsaturated polyesters, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. those of poly (methyl methacrylate), self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
392069*	Plates, sheets, film, foil and strip, of non-cellular polyesters, not reinforced, laminated, supported or similarly combined with other materials, not worked or only surface-worked, or only cut to rectangular, incl. square, shapes (excl. polycarbonates, poly (ethylene terephthalate) and other unsaturated polyesters, self-adhesive products, and floor, wall and ceiling coverings in heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392071*	Plates, sheets, film, foil and strip, of non-cellular regenerated cellulose, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392073*	Plates, sheets, film, foil and strip, of non-cellular cellulose acetates, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, and floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392079*	Plates, sheets, film, foil and strip, of non-cellular cellulose derivatives, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. products of cellulose acetates, self-adhesive products, floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392091*	Plates, sheets, film, foil and strip, of non-cellular poly (vinyl butyral), not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392092*	Plates, sheets, film, foil and strip, of non-cellular polyamides, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392093*	Plates, sheets, film, foil and strip, of non-cellular amino-resins, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392094*	Plates, sheets, film, foil and strip, of non-cellular phenolic resins, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, floor, wall and ceiling coverings of heading 3918) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
392099*	Plates, sheets, film, foil and strip, of non-cellular plastics, n.e.s., not reinforced, laminated, supported or similarly combined with other materials, without backing, 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) *	P304	Plates, sheets, film, foil and strip, of plastics, not self-adhesive, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials, used in construction sector	0.0523*
392111*	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) *	P305	Other plates, sheets, film, foil and strip, of plastics, used in construction sector	0.0523*
392112*	Plates, sheets, film, foil and strip, of cellular polymers of vinyl chloride, 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) *	P305	Other plates, sheets, film, foil and strip, of plastics, used in construction sector	0.0523*
392113*	Plates, sheets, film, foil and strip, of cellular polyurethanes, 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) *	P305	Other plates, sheets, film, foil and strip, of plastics, used in construction sector	0.0523*
392114*	Plates, sheets, film, foil and strip, of regenerated cellular cellulose, 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) *	P305	Other plates, sheets, film, foil and strip, of plastics, used in construction sector	0.0523*
392119*	Plates, sheets, film, foil and strip, of cellular plastics, unworked or merely surface-worked or merely cut into squares or rectangles (excl. those of polymers of styrene, vinyl chloride, polyurethanes and regenerated cellulose, self-adhesive products, floor, wall and ceiling coverings of heading 3918 and sterile surgical or dental adhesion barriers of subheading 3006.10.30) *	P305	Other plates, sheets, film, foil and strip, of plastics, used in construction sector	0.0523*
392190*	Plates, sheets, film, foil and strip, of plastics, reinforced, laminated, supported or similarly combined with other materials, unworked or merely surface-worked or merely cut into squares or rectangles (excl. of cellular plastics; self-adhesive products, floor, wall and ceiling coverings of heading 3918) *	P305	Other plates, sheets, film, foil and strip, of plastics, used in construction sector	0.0523*
392210	Baths, shower-baths, sinks and washbasins, of plastics	P306	Plastics sanitary ware (baths, wash-basins, etc.)	1
392220	Lavatory seats and covers, of plastics	P306	Plastics sanitary ware (baths, wash-basins, etc.)	1
392290	Bidets, lavatory pans, flushing cisterns and similar sanitary ware, of plastics (excl. baths, shower-baths, sinks, washbasins, lavatory seats and covers)	P306	Plastics sanitary ware (baths, wash-basins, etc.)	1
392310	Boxes, cases, crates and similar articles for the conveyance or packaging of goods, of plastics	P101	Boxes, cases, crates, and similar packing articles made of plastic	1
392321	Sacks and bags, incl. cones, of polymers of ethylene	P102	Plastic sacks and bags	1
392329	Sacks and bags, incl. cones, of plastics (excl. those of polymers of ethylene)	P102	Plastic sacks and bags	1
392340	Spools, cops, bobbins and similar supports, of plastics	P101	Boxes, cases, crates, and similar packing articles made of plastic	1
392350	Stoppers, lids, caps and other closures, of plastics	P101	Boxes, cases, crates, and similar packing articles made of plastic	1

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
392390	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)	P101	Boxes, cases, crates, and similar packing articles made of plastic	1
392410	Tableware and kitchenware, of plastics	P501	Household articles and toilet articles, of plastics	1
392490	Household articles and toilet articles, of plastics (excl. tableware, kitchenware, baths, shower-baths, washbasins, bidets, lavatory pans, seats and covers, flushing cisterns and similar sanitary ware)	P501	Household articles and toilet articles, of plastics	1
392510	Reservoirs, tanks, vats and similar containers, of plastics, with a capacity of > 300 l	P307	Other builders' ware of plastics n.e.c.	1
392520	Doors, windows and their frames and thresholds for doors, of plastics	P307	Other builders' ware of plastics n.e.c.	1
392530	Shutters, blinds, incl. Venetian blinds, and similar articles and parts thereof, of plastics (excl. fittings and similar articles)	P307	Other builders' ware of plastics n.e.c.	1
392590	Building elements for the manufacture of floors, walls, partition walls, ceilings, roofs, etc., of plastics; gutters and accessories of plastics; railings, fences and similar barriers, of plastics; large shelves, for assembly and permanent installation in shops, workshops, etc., of plastics; architectural ornaments, e.g. friezes, of plastics; fittings and similar products for permanent mounting on buildings, of plastics	P307	Other builders' ware of plastics n.e.c.	1
392610	Office or school supplies, of plastics, n.e.s.	P502	Office or school supplies	1
392620	Articles of apparel and clothing accessories produced by the stitching or sticking together of plastic sheeting, incl. gloves, mittens and mitts (excl. goods of 9619)	P703	Apparel and clothing accessories of plastics (incl. gloves)	1
392630	Fittings for furniture, coachwork and the like, of plastics (excl. building components for permanent mounting on parts of buildings)	P504	Furniture	1
392640	Statuettes and other ornamental articles, of plastics	P801	Plastic statuettes and other ornamental articles	1
392690	Articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s (excl. goods of 9619)	P809	Other articles	0.8
420212	Trunks, suitcases, vanity cases, executive-cases, briefcases, school satchels and similar containers, with outer surface of plastics or textile materials	P506	Luggage, handbags, travel sets, and similar articles	...
420222	Handbags, whether or not with shoulder straps, incl. those without handles, with outer surface of plastic sheeting or textile materials	P506	Luggage, handbags, travel sets, and similar articles	...
420229	Handbags, whether or not with shoulder strap, incl. those without handle, with outer surface of vulcanised fibre or paperboard, or wholly or mainly covered with such materials or with paper	P506	Luggage, handbags, travel sets, and similar articles	...
420232	Wallets, purses, key-pouches, cigarette-cases, tobacco-pouches and similar articles carried in the pocket or handbag, with outer surface of plastic sheeting or textile materials	P506	Luggage, handbags, travel sets, and similar articles	...
420239	Wallets, purses, key-cases, cigarette-cases, tobacco-pouches and similar articles of a kind normally carried in the pocket or handbag, with outer surface of vulcanised fibre or paperboard, or wholly or mainly covered with such materials or with paper, incl. spectacle cases of moulded plastic material	P506	Luggage, handbags, travel sets, and similar articles	...

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
420292	Travelling-bags, insulated food or beverage bags, toilet bags, rucksacks, shopping-bags, map-cases, tool bags, sports bags, jewellery boxes, cutlery cases, binocular cases, camera cases, musical instrument cases, gun cases, holsters and similar containers, with outer surface of plastic sheeting or textile materials (excl. trunks, briefcases, school satchels and similar containers, handbags and articles carried in the pocket or handbag)	P506	Luggage, handbags, travel sets, and similar articles	...
420299	Travelling-bags, shopping or tool bags, jewellery boxes, cutlery cases and similar, with outer surface of vulcanised fibre or paperboard; cases for binoculars, cameras, musical instruments, guns, holsters and similar containers with outer surface of materials (not leather, plastic sheeting or textile materials) (excl. trunks, briefcases, school satchels and similar; handbags; articles normally carried in pocket or handbag)	P506	Luggage, handbags, travel sets, and similar articles	...
430400	Artificial fur and articles thereof (excl. gloves made of leather and artificial fur, footwear and headgear and parts thereof, and goods of chapter 95, e.g. toys, games and sports equipment)	P705	Artificial fur; articles thereof	...
560811	Twine, cordage or rope; fishing nets, made up, of man made textile materials	P808	Fishing nets	...
570232	Carpets and other floor coverings, of man-made textile materials, woven, not tufted or flocked, of pile construction, not made up (excl. "Kelem", "Schumacks", "Karamanie" and similar hand-woven rugs)	P704	Carpets and other floor coverings	0.9
570242	Carpets and other floor coverings, of man-made textile materials, woven, not tufted or flocked, of pile construction, made up (excl. "Kelem", "Schumacks", "Karamanie" and similar hand-woven rugs)	P704	Carpets and other floor coverings	0.9
570250	Carpets and other textile floor coverings, woven, not tufted or flocked, not of pile construction, not made up (excl. "Kelem", "Schumacks", "Karamanie" and similar hand-woven rugs, and floor coverings of coconut fibres coir")	P704	Carpets and other floor coverings	...
570292	Carpets and other floor coverings, of man-made textile materials, woven, not tufted or flocked, not of pile construction, made up (excl. "Kelem", "Schumacks", "Karamanie" and similar hand-woven rugs)	P704	Carpets and other floor coverings	0.9
570320	Carpets and other floor coverings, of nylon or other polyamides, tufted needle punched, whether or not made up	P704	Carpets and other floor coverings	0.29
570330	Carpets and other floor coverings, of man-made textile materials, tufted needle punched, whether or not made up (excl. those of nylon or other polyamides)	P704	Carpets and other floor coverings	0.9
570410	Floor tiles, of felt, not tufted or flocked, with an area of $\leq 0,3 \text{ m}^2$	P704	Carpets and other floor coverings	...
570420	Floor tiles, of felt, not tufted or flocked, with an area of $> 0,3 \text{ m}^2$ but $\leq 1 \text{ m}^2$	P704	Carpets and other floor coverings	...
570490	Carpets and other floor coverings, of felt, not tufted or flocked, whether or not made up (excl. floor tiles with an area of $\leq 1 \text{ m}^2$)	P704	Carpets and other floor coverings	...
570500	Carpets and other textile floor coverings, whether or not made up (excl. knotted, woven or tufted needle punched, and of felt)	P704	Carpets and other floor coverings	0.4
610130	Coats; men's or boys' overcoats, car-coats, capes, anoraks, wind-jackets and similar articles, of man-made fibres, knitted or crocheted (excluding those of heading no. 6103)	P701	Wearing apparel	...
610230	Coats; women's or girls' overcoats, car-coats, capes, anoraks, wind-jackets and similar articles, of man-made fibres, knitted or crocheted (excluding those of heading no. 6104)	P701	Wearing apparel	...

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
610310	Suits; men's or boys', knitted or crocheted	P701	Wearing apparel	...
610323	Ensembles; men's or boys', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
610333	Jackets and blazers; men's or boys', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
610343	Trousers, bib and brace overalls, breeches and shorts; men's or boys', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
610413	Suits; women's or girls', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
610423	Ensembles; women's or girls', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
610433	Jackets; women's or girls', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
610443	Dresses; women's or girls', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
610453	Skirts and divided skirts; women's or girls', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
610463	Trousers, bib and brace overalls, breeches and shorts; women's or girls', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
610520	Shirts; men's or boys', of man-made fibres, knitted or crocheted	P701	Wearing apparel	...
610620	Blouses, shirts and shirt-blouses; women's or girls', of man-made fibres, knitted or crocheted	P701	Wearing apparel	...
610712	Underpants and briefs; men's or boys', of man-made fibres, knitted or crocheted	P701	Wearing apparel	...
610722	Nightshirts and pyjamas; men's or boys', of man-made fibres, knitted or crocheted	P701	Wearing apparel	...
610811	Slips and petticoats; women's or girls', of man-made fibres, knitted or crocheted	P701	Wearing apparel	...
610822	Briefs and panties; women's or girls', of man-made fibres, knitted or crocheted	P701	Wearing apparel	...
610832	Nightdresses and pyjamas; women's or girls', of man-made fibres, knitted or crocheted	P701	Wearing apparel	...
610892	N negligees, bathrobes, dressing gowns and similar articles; women's or girls', of man-made fibres, knitted or crocheted	P701	Wearing apparel	...
611030	Jerseys, pullovers, cardigans, waistcoats and similar articles; of man-made fibres, knitted or crocheted	P701	Wearing apparel	...
611130	Garments and clothing accessories; babies', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
611212	Track suits; of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
611231	Swimwear; men's or boys', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
611241	Swimwear; women's or girls', of synthetic fibres, knitted or crocheted	P701	Wearing apparel	...
611430	Garments; of man-made fibres, knitted or crocheted, n.e.c. in chapter 61	P701	Wearing apparel	...
611510	Graduated compression hosiery (for example, stockings for varicose veins), knitted or crocheted	P701	Wearing apparel	...
611521	Hosiery; panty hose and tights (other than graduated compression hosiery), of synthetic fibres, measuring per single yarn less than 67 decitex, knitted or crocheted	P701	Wearing apparel	...
611522	Hosiery; panty hose and tights (other than graduated compression hosiery), of synthetic fibres, measuring per single yarn 67 decitex or more, knitted or crocheted	P701	Wearing apparel	...
611530	Hosiery; women's, full-length or knee-length (other than graduated compression hosiery), measuring per single yarn less than 67 decitex, knitted or crocheted	P701	Wearing apparel	...

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
611596	Hosiery and footwear; without applied soles, of synthetic fibres, knitted or crocheted (excluding graduated compression hosiery, panty hose, tights, full or knee-length hosiery measuring per single yarn less than 67 decitex)	P701	Wearing apparel	...
611610	Gloves, mittens and mitts; knitted or crocheted, impregnated, coated or covered with plastics or rubber	P701	Wearing apparel	...
611693	Gloves, mittens and mitts; of synthetic fibres, knitted or crocheted, (other than impregnated, coated or covered with plastics or rubber)	P701	Wearing apparel	...
611710	Shawls, scarves, mufflers, mantillas, veils and the like; knitted or crocheted	P701	Wearing apparel	...
611780	Clothing accessories; knitted or crocheted, n.e.c. in heading no. 6117	P701	Wearing apparel	...
611790	Clothing; parts, knitted or crocheted	P701	Wearing apparel	...
620113	Coats; men's or boys', overcoats, raincoats, car-coats, capes, cloaks and similar articles, of man-made fibres, other than those of heading no. 6203 (not knitted or crocheted)	P701	Wearing apparel	...
620193	Anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles; men's or boys', of man-made fibres, other than those of heading no. 6203 (not knitted or crocheted)	P701	Wearing apparel	...
620213	Coats; women's or girls', overcoats, raincoats, car-coats, capes, cloaks and similar articles, of man-made fibres, other than those of heading no. 6204 (not knitted or crocheted)	P701	Wearing apparel	...
620293	Anoraks (including ski-jackets), wind-cheaters, wind-jackets and similar articles; women's or girls', of man-made fibres, other than those of heading no. 6204 (not knitted or crocheted)	P701	Wearing apparel	...
620312	Suits; men's or boys', of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
620323	Ensembles; men's or boys', of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
620333	Jackets and blazers; men's or boys', of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
620343	Trousers, bib and brace overalls, breeches and shorts; men's or boys', of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
620413	Suits; women's or girls', of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
620423	Ensembles; women's or girls', of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
620433	Jackets and blazers; women's or girls', of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
620443	Dresses; women's or girls', of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
620453	Skirts and divided skirts; women's or girls', of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
620463	Trousers, bib and brace overalls, breeches and shorts; women's or girls', of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
620530	Shirts; men's or boys', of man-made fibres (not knitted or crocheted)	P701	Wearing apparel	...
620640	Blouses, shirts and shirt-blouses; women's or girls', of man-made fibres (not knitted or crocheted)	P701	Wearing apparel	...
620722	Nightshirts and pyjamas; men's or boys', of man-made fibres (not knitted or crocheted)	P701	Wearing apparel	...
620811	Slips and petticoats; women's or girls', of man-made fibres (not knitted or crocheted)	P701	Wearing apparel	...

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
620822	Nightdresses and pyjamas; women's or girls', of man-made fibres (not knitted or crocheted)	P701	Wearing apparel	...
620892	Singlets and other vests, briefs, panties, negligees, bathrobes, dressing gowns etc.; women's or girls', of man-made fibres (not knitted or crocheted), excluding incontinence or other sanitary garments or garment liners of heading no. 96.19	P701	Wearing apparel	...
620930	Garments and clothing accessories; babies', of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
621010	Garments; of felt or non-wovens (not knitted or crocheted)	P701	Wearing apparel	...
621020	Garments; overcoats, raincoats, car-coats, capes, cloaks and similar articles, men's or boys', of the fabrics of heading no. 5602, 5603, 5903, 5906 or 5907 (not knitted or crocheted)	P701	Wearing apparel	...
621030	Garments; overcoats, raincoats, car-coats, capes, cloaks and similar articles, women's or girls', of the fabrics of heading no. 5602, 5603, 5903, 5906 or 5907 (not knitted or crocheted)	P701	Wearing apparel	...
621040	Garments; men's or boys', n.e.c. in item no. 6210.2, of the fabrics of heading no. 5602, 5603, 5903, 5906 or 5907 (not knitted or crocheted)	P701	Wearing apparel	...
621050	Garments; women's or girls', n.e.c. in item no. 6210.3, of the fabrics of heading no. 5602, 5603, 5903, 5906 or 5907 (not knitted or crocheted)	P701	Wearing apparel	...
621111	Swimwear; men's or boys', (not knitted or crocheted)	P701	Wearing apparel	...
621112	Swimwear; women's or girls', (not knitted or crocheted)	P701	Wearing apparel	...
621120	Ski suits; (not knitted or crocheted)	P701	Wearing apparel	...
621133	Track suits and other garments n.e.c.; men's or boys', of man-made fibres (not knitted or crocheted)	P701	Wearing apparel	...
621143	Track suits and other garments n.e.c.; women's or girls', of man-made fibres (not knitted or crocheted)	P701	Wearing apparel	...
621210	Brassieres; whether or not knitted or crocheted	P701	Wearing apparel	...
621220	Girdles and panty-girdles; whether or not knitted or crocheted	P701	Wearing apparel	...
621230	Corselettes; whether or not knitted or crocheted	P701	Wearing apparel	...
621290	Braces, suspenders, garters and similar articles; whether or not knitted or crocheted, n.e.c. in heading no. 6212	P701	Wearing apparel	...
621430	Shawls, scarves, mufflers, mantillas, veils and the like; of synthetic fibres (not knitted or crocheted)	P701	Wearing apparel	...
621520	Ties, bow ties and cravats; of man-made fibres (not knitted or crocheted)	P701	Wearing apparel	...
621600	Gloves, mittens and mitts (not knitted or crocheted)	P701	Wearing apparel	...
621710	Clothing accessories; other than those of heading no. 6212 (not knitted or crocheted)	P701	Wearing apparel	...
621790	Clothing; parts of garments or of clothing accessories, other than those of heading no. 6212 (not knitted or crocheted)	P701	Wearing apparel	...
650100	Hat-forms, hat bodies and hoods of felt, neither blocked to shape nor with made brims; plateaux and manchons (including slit manchons) of felt	P701	Wearing apparel	...
650200	Hat-shapes; plaited or made by assembling strips of any material, neither blocked to shape, nor with made brims, nor lined, nor trimmed	P701	Wearing apparel	...
650400	Hats and other headgear; plaited or made by assembling strips of any material, whether or not lined or trimmed	P701	Wearing apparel	...

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
650500	Hats and other headgear; knitted or crocheted, or made up from lace, felt or other textile fabric, in the piece (but not in strips), whether or not lined or trimmed; hair-nets of any material, whether or not lined or trimmed	P701	Wearing apparel	...
650610	Safety headgear	P307	Other builders' ware of plastics n.e.c.	...
650691	other safety headgear, of rubber or of plastics	P307	Other builders' ware of plastics n.e.c.	...
650700	Head-bands, linings, covers, hat foundations, hat frames, peaks and chinstraps; for headgear	P701	Wearing apparel	...
660110	Garden or similar umbrellas (excl. beach tents)	P503	Umbrellas, sun-umbrellas, walking-sticks, seat-sticks and the like	0.5
660191	Umbrellas having a telescopic shaft (excl. toy umbrellas)	P503	Umbrellas, sun-umbrellas, walking-sticks, seat-sticks and the like	0.5
660199	Umbrellas and sun umbrellas, incl. walking-stick umbrellas (excl. umbrellas having a telescopic shaft, garden umbrellas and the like, and toy umbrellas)	P503	Umbrellas, sun-umbrellas, walking-sticks, seat-sticks and the like	0.5
670210	Artificial flowers, foliage and fruit and parts thereof, and articles made of artificial flowers, foliage or fruit, by binding, glueing, fitting into one another or similar methods, of plastics	P509	Brooms, brushes, and artificial flowers	1
670411	Complete wigs of synthetic textile materials	P512	Wigs, false beards, eyebrows and eyelashes, and the like	0.2
670419	False beards, eyebrows and eyelashes, switches and the like, of synthetic textile materials (excl. complete wigs)	P512	Wigs, false beards, eyebrows and eyelashes, and the like	0.2
820110	Tools, hand; spades and shovels	P804	Hand tools	...
820150	Tools, hand; one-handed secateurs (including poultry shears)	P804	Hand tools	...
820160	Tools, hand; hedge shears, two-handed pruning shears and similar two-handed shears	P804	Hand tools	...
820210	Tools, hand; hand saws	P804	Hand tools	0.5
820310	Tools, hand; files, rasps and similar tools	P804	Hand tools	...
820320	Tools, hand; pliers (including cutting pliers), pincers, tweezers and similar tools	P804	Hand tools	...
820330	Tools, hand; metal cutting shears and similar tools	P804	Hand tools	...
820340	Tools, hand; pipe-cutters, bolt croppers, perforating punches and similar tools	P804	Hand tools	...
820411	Tools, hand; hand-operated spanners and wrenches (including torque meter wrenches but not including tap wrenches), non-adjustable	P804	Hand tools	...
820412	Tools, hand; hand-operated spanners and wrenches (including torque meter wrenches but not including tap wrenches), adjustable	P804	Hand tools	...
820420	Tools, hand; interchangeable spanner sockets, with or without handles	P804	Hand tools	...
820510	Tools, hand; drilling, threading or tapping tools	P804	Hand tools	...
820540	Tools, hand; screwdrivers	P804	Hand tools	0.2
820551	Tools, hand; household tools	P804	Hand tools	0.5
842710	Self-propelled trucks fitted with lifting or handling equipment, powered by an electric motor	P209	Fork-lift trucks and other work trucks; tractors of the type used on railway station platforms	...
842720	Self-propelled trucks fitted with lifting or handling equipment, non-powered by an electric motor	P209	Fork-lift trucks and other work trucks; tractors of the type used on railway station platforms	...

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
842790	Works trucks fitted with lifting or handling equipment, not self-propelled	P209	Fork-lift trucks and other work trucks; tractors of the type used on railway station platforms	...
854720	Insulating fittings for electrical purposes, of plastics	P308	Other construction-related plastics	...
860110	Rail locomotives powered from an external source of electricity	P201	Locomotives	0.01
860120	Rail locomotives powered by electric accumulators	P201	Locomotives	...
860210	Diesel-electric locomotives	P201	Locomotives	0.01
860290	Rail locomotives (excl. those powered from an external source of electricity or by accumulators and diesel-electric locomotives)	P201	Locomotives	0.01
860310	Self-propelled railway or tramway coaches, vans and trucks, powered from an external source of electricity (excl. those of heading 8604)	P202	Railway or tramway coaches, self-propelled	0.01
860390	Self-propelled railway or tramway coaches, vans and trucks (excl. those powered from an external source of electricity and those of heading 8604)	P202	Railway or tramway coaches, self-propelled	0.01
860400	Railway or tramway maintenance or service vehicles, whether or not self-propelled, e.g., workshops, cranes, ballast tampers, trackliners, testing coaches and track inspection vehicles	P223	Other vehicles	0.01
860500	Railway or tramway passenger coaches, luggage vans, post office coaches and other special purpose railway or tramway coaches (excl. self-propelled railway or tramway coaches, vans and trucks, railway or tramway maintenance or service vehicles and goods vans and wagons)	P203	Railway or tramway goods vans and wagons, not self-propelled	0.01
860610	Railway or tramway tank wagons and the like (excl. self-propelled)	P203	Railway or tramway goods vans and wagons, not self-propelled	0.01
860630	Railway or tramway self-discharging goods vans and wagons (excl. tank wagons and the like and insulated or refrigerated goods vans and wagons)	P203	Railway or tramway goods vans and wagons, not self-propelled	...
860691	Railway or tramway goods vans and wagons, covered and closed (excl. self-discharging goods vans and wagons and tank wagons and the like)	P203	Railway or tramway goods vans and wagons, not self-propelled	0.01
860692	Railway or tramway goods vans and wagons, open, with non-removable sides of a height > 60 cm (excl. self-discharging wagons)	P203	Railway or tramway goods vans and wagons, not self-propelled	0.01
860699	Railway or tramway goods vans and wagons (excl. those specially designed for the transport of highly radioactive materials, tank wagons and the like, insulated, refrigerated or self-discharging goods vans and wagons and open goods vans and wagons with non-removable sides of a height > 60 cm)	P203	Railway or tramway goods vans and wagons, not self-propelled	0.01
870110	Pedestrian-controlled agricultural tractors and similar tractors for industry (excl. tractor units for articulated lorries)	P204	Tractors	0.01
870120	Road tractors for semi-trailers	P204	Tractors	...
870130	Track-laying tractors (excl. pedestrian-controlled)	P204	Tractors	...
870191	Tractors, of an engine power ≤ 18 kW (excl. those of heading 8709, pedestrian-controlled tractors, road tractors for semi-trailers and track-laying tractors)	P204	Tractors	0.01
870192	Tractors, of an engine power > 18 kW but ≤ 37 kW (excl. those of heading 8709, pedestrian-controlled tractors, road tractors for semi-trailers and track-laying tractors)	P204	Tractors	0.01
870193	Tractors, of an engine power > 37 kW but ≤ 75 kW (excl. those of heading 8709, pedestrian-controlled tractors, road tractors for semi-trailers and track-laying tractors)	P204	Tractors	0.01

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
870194	Tractors, of an engine power > 75 kW but <= 130 kW (excl. those of heading 8709, pedestrian-controlled tractors, road tractors for semi-trailers and track-laying tractors)	P204	Tractors	0.01
870195	Tractors, of an engine power > 130 kW (excl. those of heading 8709, pedestrian-controlled tractors, road tractors for semi-trailers and track-laying tractors)	P204	Tractors	...
870210	Motor vehicles for the transport of >= 10 persons, incl. driver, with only diesel engine	P205	Public transport-type passenger motor vehicles	0.075
870220	Motor vehicles for the transport of >= 10 persons, incl. driver, with both diesel engine and electric motor as motors for propulsion	P205	Public transport-type passenger motor vehicles	...
870230	Motor vehicles for the transport of >= 10 persons, incl. driver, with both spark-ignition internal combustion reciprocating piston engine and electric motor as motors for propulsion	P205	Public transport-type passenger motor vehicles	...
870240	Motor vehicles for the transport of >= 10 persons, incl. driver, with only electric motor for propulsion	P205	Public transport-type passenger motor vehicles	0.075
870290	Motor vehicles for the transport of >= 10 persons, incl. driver (excl. with diesel engine or electric motor for propulsion)	P205	Public transport-type passenger motor vehicles	0.075
870310	Vehicles for the transport of <10 persons on snow; golf cars and similar vehicles	P205	Public transport-type passenger motor vehicles	0.075
870321	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with only spark-ignition internal combustion reciprocating piston engine of a cylinder capacity <= 1.000 cm³ (excl. vehicles for travelling on snow and other specially designed vehicles of subheading 8703.10)	P206	Passenger cars	...
870322	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with only spark-ignition internal combustion reciprocating piston engine of a cylinder capacity > 1.000 cm³ but <= 1.500 cm³ (excl. vehicles for travelling on snow and other specially designed vehicles of subheading 8703.10)	P206	Passenger cars	...
870323	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with only spark-ignition internal combustion reciprocating piston engine of a cylinder capacity > 1.500 cm³ but <= 3.000 cm³ (excl. vehicles for travelling on snow and other specially designed vehicles of subheading 8703.10)	P206	Passenger cars	0.075
870324	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with only spark-ignition internal combustion reciprocating piston engine of a cylinder capacity > 3.000 cm³ (excl. vehicles for travelling on snow and other specially designed vehicles of subheading 8703.10)	P206	Passenger cars	0.075
870331	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with only diesel engine of a cylinder capacity <= 1.500 cm³ (excl. vehicles for travelling on snow and other specially designed vehicles of subheading 8703.10)	P206	Passenger cars	0.075
870332	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with only diesel engine of a cylinder capacity > 1.500 cm³ but <= 2.500 cm³ (excl. vehicles for travelling on snow and other specially designed vehicles of subheading 8703.10)	P206	Passenger cars	0.075

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
870333	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with only diesel engine of a cylinder capacity > 2.500 cm³ (excl. vehicles for travelling on snow and other specially designed vehicles of subheading 8703.10)	P206	Passenger cars	0.075
870340	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with both spark-ignition internal combustion reciprocating piston engine and electric motor as motors for propulsion (excl. vehicles for travelling on snow, other specially designed vehicles of subheading 8703.10 and plug-in hybrids)	P206	Passenger cars	0.075
870350	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with both diesel engine and electric motor as motors for propulsion (excl. vehicles for travelling on snow, other specially designed vehicles of subheading 8703.10 and plug-in hybrids)	P206	Passenger cars	0.075
870360	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with both spark-ignition internal combustion reciprocating piston engine and electric motor as motors for propulsion, capable of being charged by plugging to external source of electric power (excl. vehicles for travelling on snow and other specially designed vehicles of subheading 8703.10)	P206	Passenger cars	0.075
870370	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with both diesel engine and electric motor as motors for propulsion, capable of being charged by plugging to external source of electric power (excl. vehicles for travelling on snow and other specially designed vehicles of subheading 8703.10)	P206	Passenger cars	...
870380	Motor cars and other motor vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with only electric motor for propulsion (excl. vehicles for travelling on snow and other specially designed vehicles of subheading 8703.10)	P206	Passenger cars	...
870390	Motor cars and other vehicles principally designed for the transport of <10 persons, incl. station wagons and racing cars, with engines other than internal combustion piston engine or electric motor (excl. vehicles for the transport of persons on snow and other specially designed vehicles of subheading 8703.10)	P206	Passenger cars	0.075
870410	Dumpers for off-highway use	P207	Trucks	0.075
870421	Motor vehicles for the transport of goods, with compression-ignition internal combustion piston engine (diesel or semi-diesel) engine of a gross vehicle weight ≤ 5 t (excl. dumpers for off-highway use of subheading 8704.10 and special purpose motor vehicles of heading 8705)	P207	Trucks	...
870422	Motor vehicles for the transport of goods, with compression-ignition internal combustion piston engine (diesel or semi-diesel) engine of a gross vehicle weight > 5 t but ≤ 20 t (excl. dumpers for off-highway use of subheading 8704.10 and special purpose motor vehicles of heading 8705)	P207	Trucks	...
870423	Motor vehicles for the transport of goods, with compression-ignition internal combustion piston engine (diesel or semi-diesel) engine of a gross vehicle weight > 20 t (excl. dumpers for off-highway use of subheading 8704.10 and special purpose motor vehicles of heading 8705)	P207	Trucks	0.075

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
870431	Motor vehicles for the transport of goods, with spark-ignition internal combustion piston engine, of a gross vehicle weight ≤ 5 t (excl. dumpers for off-highway use of subheading 8704.10 and special purpose motor vehicles of heading 8705)	P207	Trucks	0.075
870432	Motor vehicles for the transport of goods, with spark-ignition internal combustion piston engine, of a gross vehicle weight > 5 t (excl. dumpers for off-highway use of subheading 8704.10 and special purpose motor vehicles of heading 8705)	P207	Trucks	0.075
870490	Motor vehicles for the transport of goods, with engines other than internal combustion piston engine (excl. dumpers for off-highway use of subheading 8704.10 and special purpose motor vehicles of heading 8705)	P207	Trucks	0.075
870510	Crane lorries (excl. breakdown lorries)	P208	Special-purpose motor vehicles n.e.c.	0.075
870520	Mobile drilling derricks	P208	Special-purpose motor vehicles n.e.c.	...
870530	Fire fighting vehicles (excl. vehicles for transporting persons)	P208	Special-purpose motor vehicles n.e.c.	...
870540	Concrete-mixer lorries	P208	Special-purpose motor vehicles n.e.c.	0.075
870590	Special purpose motor vehicles (other than those principally designed for the transport of persons or goods and excl. concrete-mixer lorries, fire fighting vehicles, mobile drilling derricks and crane lorries)	P208	Special-purpose motor vehicles n.e.c.	...
870911	Electrical vehicles not fitted with lifting or handling equipment, of the type used in factories, warehouses, dock areas or airports for short distance transport of goods; tractors of the type used on railway station platforms	P209	Fork-lift trucks and other work trucks; tractors of the type used on railway station platforms	0.075
870919	Works trucks, self-propelled, not fitted with lifting or handling equipment, of the type used in factories, warehouses, dock areas or airports for short distance transport of goods; tractors of the type used on railway station platforms (excl. electrical trucks)	P209	Fork-lift trucks and other work trucks; tractors of the type used on railway station platforms	0.075
871000	Tanks and other armoured fighting vehicles, motorised, whether or not fitted with weapons, and parts of such vehicles, n.e.s.	P210	Tanks and other armoured fighting vehicles, motorised, and parts thereof	0.075
871110	Motorcycles, incl. mopeds, with reciprocating internal combustion piston engine of a cylinder capacity ≤ 50 cm ³	P211	Motorcycles	0.075
871120	Motorcycles, incl. mopeds, with reciprocating internal combustion piston engine of a cylinder capacity > 50 cm ³ but ≤ 250 cm ³	P211	Motorcycles	...
871130	Motorcycles, incl. mopeds, with reciprocating internal combustion piston engine of a cylinder capacity > 250 cm ³ but ≤ 500 cm ³	P211	Motorcycles	...
871140	Motorcycles, incl. mopeds, with reciprocating internal combustion piston engine of a cylinder capacity > 500 cm ³ but ≤ 800 cm ³	P211	Motorcycles	0.075
871150	Motorcycles, incl. mopeds, with reciprocating internal combustion piston engine of a cylinder capacity > 800 cm ³	P211	Motorcycles	0.075
871160	Motorcycles, incl. mopeds, and cycles fitted with an auxiliary motor, with electric motor for propulsion	P211	Motorcycles	0.075
871190	Motorcycles, incl. mopeds, and cycles fitted with an auxiliary motor and side cars for motorcycles (excl. electric or with reciprocating internal combustion piston engine)	P211	Motorcycles	...
871200	Bicycles and other cycles, incl. delivery tricycles, not motorised	P212	Bicycles	0.075
871310	Carriages for disabled persons, not mechanically propelled	P213	Wheelchairs	0.075

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
871390	Carriages for disabled persons, motorised or otherwise mechanically propelled (excl. specially designed motor vehicles and bicycles)	P213	Wheelchairs	0.075
871610	Trailers and semi-trailers of the caravan type, for housing or camping	P214	Trailers and semi-trailers of the caravan type, for housing or camping	0.075
871631	Tanker trailers and tanker semi-trailers, not designed for running on rails	P214	Trailers and semi-trailers of the caravan type, for housing or camping	0.075
871639	Trailers and semi-trailers for the transport of goods, not designed for running on rails (excl. self-loading or self-unloading trailers and semi-trailers for agricultural purposes and tanker trailers and tanker semi-trailers)	P214	Trailers and semi-trailers of the caravan type, for housing or camping	0.075
871640	Trailers and semi-trailers, not designed for running on rails (excl. trailers and semi-trailers for the transport of goods and those of the caravan type for housing or camping)	P214	Trailers and semi-trailers of the caravan type, for housing or camping	...
880100	Balloons and dirigibles; gliders, hang gliders and other non-powered aircraft	P215	Balloons and dirigibles; gliders, hang gliders and other non-powered aircraft	0.075
880211	Helicopters of an unladen weight <= 2.000 kg	P216	Helicopters, aeroplanes, and other powered aircraft	0.075
880212	Helicopters of an unladen weight > 2.000 kg	P216	Helicopters, aeroplanes, and other powered aircraft	#N/A
880220	Aeroplanes and other powered aircraft of an unladen weight <= 2.000 kg (excl. helicopters and dirigibles)	P216	Helicopters, aeroplanes, and other powered aircraft	#N/A
880230	Aeroplanes and other powered aircraft of an unladen weight > 2.000 kg but <= 15.000 kg (excl. helicopters and dirigibles)	P216	Helicopters, aeroplanes, and other powered aircraft	#N/A
880240	Aeroplanes and other powered aircraft of an of an unladen weight > 15.000 kg (excl. helicopters and dirigibles)	P216	Helicopters, aeroplanes, and other powered aircraft	0.075
880260	Spacecraft, incl. satellites, and suborbital and spacecraft launch vehicles	P217	Spacecraft and spacecraft launch vehicles	0.075
890110	Cruise ships, excursion boats and similar vessels principally designed for the transport of persons; ferry-boats of all kinds	P218	Large ships and vessels	0.075
890120	Tankers	P218	Large ships and vessels	...
890130	Refrigerated vessels (excl. tankers)	P218	Large ships and vessels	...
890190	Vessels for the transport of goods and vessels for the transport of both persons and goods (excl. refrigerated vessels, tankers, ferry-boats and vessels principally designed for the transport of persons)	P218	Large ships and vessels	0.075
890200	Fishing vessels; factory ships and other vessels for processing or preserving fishery products (excl. fishing boats for sport)	P218	Large ships and vessels	0.075
890310	Inflatable vessels for pleasure or sports	P220	Vessels for pleasure and sport	0.075
890391	Sailboats and yachts, with or without auxiliary motor, for pleasure or sports	P220	Vessels for pleasure and sport	0.075
890392	Motor boats and motor yachts, for pleasure or sports (other than outboard motor boats)	P220	Vessels for pleasure and sport	0.075
890399	Vessels for pleasure or sports; rowing boats (excl. motor boats and motor yachts powered other than by outboard motors, sailboats and yachts with or without auxiliary motor and inflatable boats)	P220	Vessels for pleasure and sport	0.075
890400	Tugs and pusher craft	P221	Other vessels	0.075
890510	Dredgers	P221	Other vessels	0.075
890520	Floating or submersible drilling or production platforms	P222	Rafts, tanks, coffer-dams, landing stages, buoys, beacons, and other floating structures	...

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
890590	Light-vessels, fire-floats, floating cranes and other vessels, the navigability of which is subsidiary to their main function (excl. dredgers, floating or submersible drilling or production platforms; fishing vessels and warships)	P221	Other vessels	0.075
890610	Warships of all kinds	P221	Other vessels	0.075
890690	Vessels, incl. lifeboats (excl. warships, rowing boats and other vessels of heading 8901 to 8905 and vessels for breaking up)	P221	Other vessels	0.075
890710	Inflatable rafts	P222	Rafts, tanks, coffer-dams, landing stages, buoys, beacons, and other floating structures	0.075
890790	Rafts, tanks, coffer-dams, landing stages, buoys, beacons and other floating structures (excl. inflatable rafts, vessels of heading 8901 to 8906 and floating structures for breaking up)	P222	Rafts, tanks, coffer-dams, landing stages, buoys, beacons, and other floating structures	0.075
900311	Frames and mountings for spectacles, goggles or the like, of plastics	P507	Glasses	0.85
900410	Sunglasses	P507	Glasses	0.85
900490	Spectacles, goggles and the like, corrective, protective or other (excl. spectacles for testing eyesight, sunglasses, contact lenses, spectacle lenses and frames and mountings for spectacles)	P507	Glasses	...
900510	Binoculars	P507	Glasses	0.075
900580	Monoculars, astronomical and other optical telescopes and other astronomical instruments (excl. binoculars, instruments for radio-astronomy and other instruments or apparatus specified elsewhere)	P507	Glasses	...
901831	Syringes, with or without needles, used in medical, surgical, dental or veterinary sciences	P803	Medical and pharmaceutical goods	0.36
940140	Seats, convertible into beds (excl. garden seats and camping equipment, and medical, dental or surgical furniture)	P504	Furniture	0.075
940180	Seats, n.e.s.	P504	Furniture	...
940370	Furniture of plastics (excl. medical, dental, surgical or veterinary, and seats)	P504	Furniture	...
940430	Sleeping bags, whether or non-electrically heated	P702	Make-up textile articles other than apparel	...
940490	Articles of bedding and similar furnishing, fitted with springs or stuffed or internally filled with any material or of cellular rubber or plastics (excl. mattress supports, mattresses, sleeping bags, pneumatic or water mattresses and pillows, blankets and covers)	P702	Make-up textile articles other than apparel	...
940550	Non-electrical lamps and lighting fittings, n.e.s.	P505	Non-electrical lamps and lighting fittings	0.075
940560	Illuminated signs, name-plates and the like	P807	Illuminated signs	...
940592	Parts of lamps and lighting fittings, illuminated signs and nameplates and the like, of plastics, n.e.s.	P307	Other builders' ware of plastics n.e.c.	...
940690	Prefabricated buildings, whether or not complete or already assembled (excl. of wood)	P308	Other construction-related plastics	...
950300	Tricycles, scooters, pedal cars and similar wheeled toys; dolls' carriages; dolls; other toys; reduced-size ("scale") models and similar recreational models, working or not; puzzles of all kinds.	P510	Non-electric toys	...
950510	Christmas articles (excl. candles and electric lighting sets, natural Christmas trees and Christmas tree stands)	P513	Festival, carnival or other entertainment articles	0.075
950590	Festival, carnival or other entertainment articles, incl. conjuring tricks and novelty jokes, n.e.s.	P513	Festival, carnival or other entertainment articles	0.075
950632	Golf balls	P511	Sporting balls and other sport equipment	0.3

HS Code	HS Description	Plastic-KEY	Plastic-KEY Description	Plastic Content (tentative)
950662	Inflatable balls	P511	Sporting balls and other sport equipment	...
950669	Balls (excl. inflatable, tennis balls, golf balls, and table-tennis balls)	P511	Sporting balls and other sport equipment	0.56
960321	Tooth brushes, incl. dental-plate brushes	P509	Brooms, brushes, and artificial flowers	...
960329	Shaving brushes, hair brushes, nail brushes, eyelash brushes and other brushes for use on the person (excl. tooth brushes)	P509	Brooms, brushes, and artificial flowers	...
960330	Artists' brushes, writing brushes and similar brushes for the application of cosmetics	P509	Brooms, brushes, and artificial flowers	...
960340	Paint, distemper, varnish or similar brushes, paint pads and rollers (excl. artists' and similar brushes of subheading 9603.30)	P509	Brooms, brushes, and artificial flowers	...
960350	Brushes constituting parts of machines, appliances or vehicles	P509	Brooms, brushes, and artificial flowers	...
960390	Mops and leather dusters; prepared knots and tufts for broom or brush making; squeegees of rubber or other flexible materials; brooms and brushes, n.e.s.	P509	Brooms, brushes, and artificial flowers	0.49
960500	Travel sets for personal toilet, sewing or shoe or clothes cleaning (excl. manicure sets)	P506	Luggage, handbags, travel sets, and similar articles	0.075
960810	Ball-point pens	P502	Office or school supplies	0.63
960820	Felt-tipped and other porous-tipped pens and markers	P502	Office or school supplies	...
960830	Fountain pens, stylograph pens and other pens	P502	Office or school supplies	...
960840	Propelling or sliding pencils	P502	Office or school supplies	0.075
960850	Sets of articles from two or more of the following: ball-point pens, felt or fibre-tipped pens and markers, fountain pens and propelling pencils	P502	Office or school supplies	...
960860	Refills for ball-point pens, comprising the ball-point and ink-reservoir	P502	Office or school supplies	0.48
960891	Pen nibs and nib points	P502	Office or school supplies	0.075
960899	Parts of ball-point pens, felt-tipped and other porous-tipped pens and markers, fountain pens and propelling pencils n.e.s, pencil-holders, pen-holders and the like, and duplicating stylos	P502	Office or school supplies	...
961310	Pocket lighters, gas fuelled, non-refillable	P508	Lighters and smoking pipes	0.45
961320	Pocket lighters, gas fuelled, refillable	P508	Lighters and smoking pipes	...
961380	Lighters (excl. gas fuelled pocket lighters, and fuses and primers for propellant powders and explosives)	P508	Lighters and smoking pipes	...
961400	Smoking pipes, incl. pipe bowls, cigar or cigarette holders, and parts thereof, n.e.s.	P508	Lighters and smoking pipes	...
961511	Combs, hair-slides and the like of hard rubber or plastics	P509	Brooms, brushes, and artificial flowers	0.83
961800	Tailors' dummies and other lay figures, automata and other animated displays used for shop window dressing (excl. the articles actually on display, educational models and toy dolls)	P805	Tailors' dummies and other lay figures, automata and other animated displays used for shop window dressing	0.075
962000	Monopods, bipods, tripods and similar articles	P802	Monopods, bipods, tripods and similar articles	...
		P6	Further detailing needs to be developed	

Annex 4: Links between HS codes relevant to plastic and UNU-KEYs

This Annex presents the Plastic-KEY group P4 'Electronic and electrical equipment'. The Plastic-KEYs in this group are adapted from the UNU-KEYs (Forti et al., 2018) by prefixing the four-digit UNU-KEYs with P4.

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
630110	Electric blankets of textile material	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
840310	Boilers; central heating boilers (excluding those of heading no. 8402)	P40001	Central heating (household installed)	...
841350	Pumps; reciprocating positive displacement pumps, n.e.c. in heading no. 8413, for liquids	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
841370	Pumps; centrifugal, n.e.c. in heading no. 8413, for liquids	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
841381	Pumps and liquid elevators; n.e.c. in heading no. 8413	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
841451	Table, window, ceiling fans, electric motor <125 watts	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
841459	Fans; n.e.c. in item no. 8414.51	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
841460	Hoods; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters, having a maximum horizontal side not exceeding 120cm	P40106	Household Heating & Ventilation (e.g. hoods, ventilators, space heaters)	...
841510	Air conditioning machines; comprising a motor-driven fan and elements for changing the temperature and humidity, of a kind designed to be fixed to a window, wall, ceiling or floor, self-contained or "split-system"	P40111	Air Conditioners (household-installed and portable)	...
841581	Air conditioning machines; containing a motor driven fan, other than window or wall types, incorporating a refrigerating unit and a valve for reversal of the cooling/heat cycle (reversible heat pumps)	P40111	Air Conditioners (household-installed and portable)	...
841582	Air conditioning machines; containing a motor driven fan, other than window or wall types, incorporating a refrigerating unit	P40111	Air Conditioners (household-installed and portable)	...
841583	Air conditioning machines; containing a motor driven fan, other than window or wall types, not incorporating a refrigerating unit	P40113	Professional Cooling (e.g. large air conditioners, cooling displays)	...
841810	Refrigerators and freezers; combined refrigerator-freezers, fitted with separate external doors, electric or other	P40108	Fridges (incl. combi-fridges)	...
841821	Refrigerators; for household use, compression-type, electric or other	P40108	Fridges (incl. combi-fridges)	...
841829	Refrigerators; household, electric or not, other than compression-type	P40108	Fridges (incl. combi-fridges)	...
841830	Freezers; of the chest type, not exceeding 800l capacity	P40109	Freezers	...

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
841840	Freezers; of the upright type, not exceeding 900l capacity	P40109	Freezers	...
841850	Furniture incorporating refrigerating or freezing equipment; for storage and display, n.e.c. in item no. 8418.1, 8418.2, 8418.3 or 8418.4 (chests, cabinets, display counters, show-cases and the like)	P40113	Professional Cooling (e.g. large air conditioners, cooling displays)	...
841861	Heat pumps; other than air conditioning machines of heading no. 8415	P40112	Other Cooling (e.g. dehumidifiers, heat pump dryers)	...
841869	Refrigerating or freezing equipment; n.e.c. in heading no. 8418	P40112	Other Cooling (e.g. dehumidifiers, heat pump dryers)	...
842112	Centrifuges; clothes-dryers	P40105	Dryers (wash dryers, centrifuges)	...
842211	Dish washing machines; of the household type	P40102	Dishwashers	...
842219	Dish washing machines; of other than household type	P40102	Dishwashers	...
842310	Weighing machines; personal (including baby scales) and household scales	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
842430	Mechanical appliances; steam or sand blasting machines and similar jet projecting machines	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
843061	Machinery; for tamping or compacting, not self-propelled	P40602	Professional Tools (e.g. for welding, soldering, milling)	...
843311	Mowers; lawn, parks or sports-grounds, powered, with the cutting device rotating in a horizontal plane	P40602	Professional Tools (e.g. for welding, soldering, milling)	...
843319	Mowers; for lawns, parks or sports-grounds, other than with the cutting device rotating in a horizontal plane	P40602	Professional Tools (e.g. for welding, soldering, milling)	...
844312	Printing machinery; offset, sheet-fed, office type (sheet size not exceeding 22 x 36cm in the unfolded state)	P40307	Professional IT (e.g. servers, routers, data storage, copiers)	...
844315	Printing machinery; letterpress, other than reel-fed, excluding flexographic printing	P40304	Printers (e.g. scanners, multifunctionals, faxes)	...
844319	Printing machinery; used for printing by means of plates, cylinders and other printing components of heading 84.42, n.e.c. in item no. 8443.1	P40304	Printers (e.g. scanners, multifunctionals, faxes)	...
844331	Printing, copying, and facsimile machines; machines which perform two or more of the functions of printing, copying or facsimile transmission, capable of connecting to an automatic data processing machine or to a network	P40304	Printers (e.g. scanners, multifunctionals, faxes)	...
844332	Printing, copying, and facsimile machines; single-function printing, copying or facsimile machines, capable of connecting to an automatic data processing machine or to a network	P40304	Printers (e.g. scanners, multifunctionals, faxes)	...
844339	Printing, copying, and facsimile machines; single-function printing, copying or facsimile machines, not capable of connecting to an automatic data processing machine or to a network	P40307	Professional IT (e.g. servers, routers, data storage, copiers)	...
845011	Washing machines; household or laundry-type, fully-automatic, (of a dry linen capacity not exceeding 10kg)	P40104	Washing Machines (incl. combined dryers)	...
845012	Washing machines; household or laundry-type, with built-in centrifugal drier, (not fully-automatic), of a dry linen capacity not exceeding 10kg	P40104	Washing Machines (incl. combined dryers)	...

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
845019	Washing machines; household or laundry-type, not fully-automatic, without built-in centrifugal drier, of a dry linen capacity not exceeding 10kg	P40104	Washing Machines (incl. combined dryers)	...
845020	Washing machines; household or laundry-type, of a dry linen capacity exceeding 10kg	P40104	Washing Machines (incl. combined dryers)	...
845110	Dry-cleaning machines	P40101	Professional Heating & Ventilation (excl. cooling equipment)	...
845121	Drying machines; of a dry linen capacity not exceeding 10kg	P40105	Dryers (wash dryers, centrifuges)	...
845129	Drying machines; of a dry linen capacity exceeding 10kg	P40105	Dryers (wash dryers, centrifuges)	...
845130	Ironing machines and presses (including fusing presses)	P40101	Professional Heating & Ventilation (excl. cooling equipment)	...
845210	Sewing machines; of the household type	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
845819	Lathes; for removing metal, horizontal, other than numerically controlled	P40602	Professional Tools (e.g. for welding, soldering, milling)	...
845929	Machine-tools; for drilling by removing metal, other than numerically controlled	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
846090	Machine-tools; for deburring, grinding, polishing or otherwise finishing metal, sintered metal carbides or cermets by means of grinding stones, abrasives or polishing products, n.e.c. in heading no. 8460	P40602	Professional Tools (e.g. for welding, soldering, milling)	...
846591	Machine-tools; for working wood, cork, bone, hard rubber, hard plastics or similar hard materials; sawing machines	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
846596	Machine-tools; for working wood, cork, bone, hard rubber, hard plastics or similar hard materials; splitting, slicing or paring machines	P40602	Professional Tools (e.g. for welding, soldering, milling)	...
846721	Tools; for working in the hand, with self-contained electric motor; drills of all kinds	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
846722	Tools; for working in the hand, with self-contained electric motor; saws	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
846729	Tools; for working in the hand, with self-contained electric motor; other than saws and drills	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
847010	Calculating machines; electronic calculators capable of operation without an external source of electric power and pocket-size data recording, reproducing and displaying machines with calculating functions	P40301	Small IT (e.g. routers, mice, keyboards, external drives & accessories)	...
847021	Calculating machines; electronic, incorporating a printing device, needing an external source of power	P40301	Small IT (e.g. routers, mice, keyboards, external drives & accessories)	...
847029	Calculating machines; electronic, (not incorporating a printing device), needing an external power source	P40301	Small IT (e.g. routers, mice, keyboards, external drives & accessories)	...
847050	Cash registers	P40307	Professional IT (e.g. servers, routers, data storage, copiers)	...
847090	Machines incorporating a calculating device; n.e.c. in heading no. 8470	P40307	Professional IT (e.g. servers, routers, data storage, copiers)	...
847130	Automatic data processing machines; portable, weighing not more than 10kg, consisting of at least a central processing unit, a keyboard and a display	P40303	Laptops (incl. tablets)	...

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
847141	Automatic data processing machines; comprising in the same housing at least a central processing unit and an input and output unit, whether or not combined, n.e.c. in item no. 8471.30	P40302	Desktop PCs (excl. monitors, accessories)	...
847149	Automatic data processing machines; presented in the form of systems, n.e.c. in item no. 8471.30 or 8471.41	P40302	Desktop PCs (excl. monitors, accessories)	...
847150	Units of automatic data processing machines; processing units other than those of item no. 8471.41 or 8471.49, whether or not containing in the same housing one or two of the following types of unit: storage units, input units or output units	P40302	Desktop PCs (excl. monitors, accessories)	...
847160	Units of automatic data processing machines; input or output units, whether or not containing storage units in the same housing	P40301	Small IT (e.g. routers, mice, keyboards, external drives & accessories)	...
847170	Units of automatic data processing machines; storage units	P40301	Small IT (e.g. routers, mice, keyboards, external drives & accessories)	...
847180	Units of automatic data processing machines; n.e.c. in item no. 8471.50, 8471.60 or 8471.70	P40301	Small IT (e.g. routers, mice, keyboards, external drives & accessories)	...
847190	Magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, not elsewhere specified or included	P40301	Small IT (e.g. routers, mice, keyboards, external drives & accessories)	...
847210	Office machines; duplicating machines	P40307	Professional IT (e.g. servers, routers, data storage, copiers)	...
847230	Office machines; for sorting or folding mail or for inserting mail in envelopes or bands, machines for opening, closing or sealing mail and machines for affixing or cancelling postage stamps	P40307	Professional IT (e.g. servers, routers, data storage, copiers)	...
847290	Office machines; not elsewhere classified	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
847431	Machines; concrete or mortar mixers	P40602	Professional Tools (e.g. for welding, soldering, milling)	...
847621	Machines; automatic beverage-vending machines, incorporating heating or refrigerating devices	P41002	Cooled Dispensers (e.g. for vending, cold drinks)	...
847629	Machines; automatic beverage-vending machines, not incorporating heating or refrigerating devices	P41001	Non-Cooled Dispensers (e.g. for vending, hot drinks, tickets, money)	...
847681	Machines; automatic goods-vending machines, (e.g. postage stamp, cigarette, food or money-changing machines, excluding beverage-vending machines), incorporating heating or refrigerating devices	P41002	Cooled Dispensers (e.g. for vending, cold drinks)	...
847689	Machines; automatic goods-vending machines, (e.g. postage stamp, cigarette, food or money-changing machines, excluding beverage-vending machines), not incorporating heating or refrigerating devices	P41001	Non-Cooled Dispensers (e.g. for vending, hot drinks, tickets, money)	...
850811	Vacuum cleaners, with self-contained electric motor, of a power not exceeding 1,500 W and having a dust bag or other receptacle capacity not exceeding 20L	P40204	Vacuum Cleaners (excl. professional)	...
850819	Vacuum cleaners, with self-contained electric motor, n.e.c. in item no. 8508.1	P40204	Vacuum Cleaners (excl. professional)	...
850860	Vacuum cleaners, other than with a self-contained electric motor	P40204	Vacuum Cleaners (excl. professional)	...

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
850940	Electro-mechanical domestic appliances; food grinders and mixers, fruit or vegetable juice extractors, with self-contained electric motor	P40202	Food (e.g. toaster, grills, food processing, frying pans)	...
850980	Electro-mechanical domestic appliances; with self-contained electric motor, other than vacuum cleaners of heading 85.08, n.e.c. in heading no. 8509	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
851010	Shavers; with self-contained electric motor	P40205	Personal Care (e.g. toothbrushes, hairdryers, razors)	...
851020	Hair clippers; with a self-contained electric motor	P40205	Personal Care (e.g. toothbrushes, hairdryers, razors)	...
851030	Hair-removing appliances; with self-contained electric motor	P40205	Personal Care (e.g. toothbrushes, hairdryers, razors)	...
851210	Lighting or visual signalling equipment; electrical, of a kind used on bicycles, excluding articles of heading no. 8539	P40501	Lamps (e.g. pocket, Christmas, excl. LED & incandescent)	...
851310	Lamps; portable, electric, designed to function by their own source of energy (excluding lighting equipment of heading no. 8512)	P40501	Lamps (e.g. pocket, Christmas, excl. LED & incandescent)	...
851511	Brazing or soldering machines and apparatus; soldering irons and guns, whether or not capable of cutting	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
851519	Brazing or soldering machines and apparatus; other than soldering irons and guns, whether or not capable of cutting	P40602	Professional Tools (e.g. for welding, soldering, milling)	...
851521	Welding machines and apparatus; for resistance welding of metal, fully or partly automatic, whether or not capable of cutting	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
851529	Welding machines and apparatus; for resistance welding of metal, other than fully or partly automatic, whether or not capable of cutting	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
851531	Welding machines and apparatus; for arc (including plasma arc) welding of metals, fully or partly automatic, whether or not capable of cutting	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
851610	Heaters; electric, instantaneous or storage water and immersion heaters	P40203	Hot Water (e.g. coffee, tea, water cookers)	...
851621	Heating apparatus; electric storage heating radiators	P40106	Household Heating & Ventilation (e.g. hoods, ventilators, space heaters)	...
851629	Heating apparatus; electric soil heating apparatus and space heating apparatus (excluding storage heating radiators)	P40106	Household Heating & Ventilation (e.g. hoods, ventilators, space heaters)	...
851631	Hair-dressing apparatus; electro-thermic hair dryers	P40205	Personal Care (e.g. toothbrushes, hairdryers, razors)	...
851632	Hair-dressing apparatus; electro-thermic, other than hair dryers	P40205	Personal Care (e.g. toothbrushes, hairdryers, razors)	...
851633	Hand-drying apparatus; electro-thermic	P40205	Personal Care (e.g. toothbrushes, hairdryers, razors)	...
851640	Smoothing irons; electric	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
851650	Ovens; microwave, of a kind used for domestic purposes	P40114	Microwaves (incl. combined, excl. grills)	...
851660	Ovens, cookers, cooking plates, boiling rings, grillers and roasters; of a kind used for domestic purposes (excluding microwaves)	P40103	Kitchen (e.g. large furnaces, ovens, cooking equipment)	...
851671	Electro-thermic appliances; coffee or tea makers, of a kind used for domestic purposes	P40203	Hot Water (e.g. coffee, tea, water cookers)	...
851672	Electro-thermic appliances; toasters, of a kind used for domestic purposes	P40202	Food (e.g. toaster, grills, food processing, frying pans)	...

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
851679	Electro-thermic appliances; n.e.c. in heading no. 8516, used for domestic purposes	P40202	Food (e.g. toaster, grills, food processing, frying pans)	...
851711	Line telephone sets with cordless handsets	P40305	Telecom (e.g. (cordless) phones, answering machines)	...
851712	Telephones for cellular networks or for other wireless networks	P40306	Mobile Phones (incl. smartphones, pagers)	...
851718	Telephone sets n.e.c. in item no. 8517.1	P40305	Telecom (e.g. (cordless) phones, answering machines)	...
851761	Base stations	P40305	Telecom (e.g. (cordless) phones, answering machines)	...
851762	Communication apparatus (excluding telephone sets or base stations); machines for the reception, conversion and transmission or regeneration of voice, images or other data, including switching and routing apparatus	P40305	Telecom (e.g. (cordless) phones, answering machines)	...
851769	Communication apparatus (excluding telephone sets or base stations); machines for the transmission or reception of voice, images or other data (including wired/wireless networks), n.e.c. in item no. 8517.6	P40305	Telecom (e.g. (cordless) phones, answering machines)	...
851810	Microphones and stands therefor	P40401	Small Consumer Electronics (e.g. headphones, remote controls)	...
851821	Loudspeakers; single, mounted in their enclosures	P40405	Speakers	...
851822	Loudspeakers; multiple, mounted in the same enclosure	P40405	Speakers	...
851830	Headphones and earphones, whether or not combined with a microphone, and sets consisting of a microphone and one or more loudspeakers	P40401	Small Consumer Electronics (e.g. headphones, remote controls)	...
851840	Amplifiers; audio-frequency electric	P40602	Professional Tools (e.g. for welding, soldering, milling)	...
851850	Amplifier sets; electric sound	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
851920	Sound recording or reproducing apparatus; operated by coins, banknotes, bank cards, tokens or by other means of payment	P40703	Leisure (e.g. large exercise, sports equipment)	...
851930	Sound recording or reproducing apparatus; turntables (record-decks)	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
851950	Sound recording or reproducing apparatus; telephone answering machines	P40305	Telecom (e.g. (cordless) phones, answering machines)	...
851981	Sound recording or reproducing apparatus; using magnetic, optical or semiconductor media, n.e.c. in item no 8519.20, 8519.30 or 8519.50	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
851989	Sound recording or reproducing apparatus; n.e.c. in heading no 8519	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
852110	Video recording or reproducing apparatus; magnetic tape-type	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
852190	Video recording or reproducing apparatus; other than magnetic tape-type	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
852560	Transmission apparatus for radio-broadcasting or television, whether or not incorporating sound recording or reproducing apparatus, incorporating reception apparatus	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
852580	Television cameras, digital cameras and video camera recorders	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
852691	Radio navigational aid apparatus	P40402	Portable Audio & Video (e.g. MP3, e-readers, car navigation)	...
852692	Radio remote control apparatus	P40401	Small Consumer Electronics (e.g. headphones, remote controls)	...

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
852712	Radio broadcast receivers capable of operating without an external power source; pocket-size radio cassette-players	P40402	Portable Audio & Video (e.g. MP3, e-readers, car navigation)	...
852713	Radio broadcast receivers capable of operating without an external power source; apparatus (other than pocket-size radio cassette-players), combined with sound recording or reproducing apparatus	P40402	Portable Audio & Video (e.g. MP3, e-readers, car navigation)	...
852719	Radio broadcast receivers capable of operating without an external power source; n.e.c. in item no. 8527.1	P40402	Portable Audio & Video (e.g. MP3, e-readers, car navigation)	...
852721	Radio-broadcast receivers not capable of operating without an external source of power, of a kind used in motor vehicles; combined with sound recording or reproducing apparatus	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
852729	Radio-broadcast receivers not capable of operating without an external source of power, of a kind used in motor vehicles; not combined with sound recording or reproducing apparatus	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
852791	Radio-broadcast receivers n.e.c. in heading no. 8527; combined with sound recording or reproducing apparatus	P40402	Portable Audio & Video (e.g. MP3, e-readers, car navigation)	...
852792	Radio-broadcast receivers n.e.c. in heading no. 8527; not combined with sound recording or reproducing apparatus but combined with a clock	P40402	Portable Audio & Video (e.g. MP3, e-readers, car navigation)	...
852799	Radio-broadcast receivers n.e.c. in heading no. 8527; not combined with sound recording or reproducing apparatus and not combined with a clock	P40402	Portable Audio & Video (e.g. MP3, e-readers, car navigation)	...
852842	Monitors; cathode-ray tube, capable of directly connecting to and designed for use with an automatic data processing machine of heading 84.71	P40308	Cathode Ray Tube Monitors	...
852849	Monitors; cathode-ray tube, n.e.c. in subheading 8528.42, whether or not colour	P40308	Cathode Ray Tube Monitors	...
852852	Monitors; other than cathode-ray tube; capable of directly connecting to and designed for use with an automatic data processing machine of heading 84.71	P40309	Flat-Panel Display Monitors (LCD, LED)	...
852859	Monitors other than cathode-ray tube; n.e.c. in subheading 8528.52, whether or not colour	P40309	Flat-Panel Display Monitors (LCD, LED)	...
852862	Projectors; capable of directly connecting to and designed for use with an automatic data processing machine of heading 84.71	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
852869	Projectors; n.e.c. in subheading 8528.62, whether or not colour	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
852871	Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus; not designed to incorporate a video display or screen	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
852872	Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus; incorporating a colour video display or screen	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
852873	Reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus; incorporating a monochrome video display or screen	P40407	Cathode Ray Tube TVs	...
853110	Signalling apparatus; electric, sound or visual, burglar or fire alarms and similar, other than those of heading no. 8512 or 8530	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
853120	Signalling apparatus; electric, sound or visual, indicator panels incorporating liquid crystal devices (LCD) or light-emitting diodes (LED), excluding those of heading no. 8512 or 8530	P40309	Flat-Panel Display Monitors (LCD, LED)	...
853180	Signalling apparatus; electric, sound or visual, apparatus n.e.c. in heading no. 8531, excluding those of heading no. 8512 or 8530	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
853931	Lamps; discharge, (excluding ultra-violet), fluorescent, hot cathode	P40503	Straight Tube Fluorescent Lamps	...
853932	Lamps; discharge, (excluding ultra-violet), mercury or sodium vapour lamps, metal halide lamps	P40504	Special Lamps (e.g. professional mercury, high & low-pressure sodium)	...
853939	Lamps; discharge, (excluding ultra-violet, excluding fluorescent, hot cathode)	P40504	Special Lamps (e.g. professional mercury, high & low-pressure sodium)	...
853941	Lamps; arc-lamps	P40504	Special Lamps (e.g. professional mercury, high & low-pressure sodium)	...
853949	Lamps; ultra-violet or infra-red lamps, (excluding arc-lamps)	P40503	Straight Tube Fluorescent Lamps	...
853950	Lamps; light-emitting diode (LED) lamps	P40505	LED lamps (incl. retrofit LED lamps)	...
854140	Electrical apparatus; photosensitive, including photovoltaic cells, whether or not assembled in modules or made up into panels, light-emitting diodes (LED)	P40505	LED lamps (incl. retrofit LED lamps)	...
854150	Electrical apparatus; photosensitive semiconductor devices n.e.c. in heading no. 8541, including photovoltaic cells, whether or not assembled in modules or made up into panels	P40505	LED lamps (incl. retrofit LED lamps)	...
854370	Electrical machines and apparatus; having individual functions, not specified or included elsewhere in this chapter, n.e.c. in heading no. 8543	P40401	Small Consumer Electronics (e.g. headphones, remote controls)	...
900661	Photographic flashlight apparatus; discharge lamp (electronic)	P40406	Cameras (e.g. camcorders, foto & digital still cameras)	...
900669	Photographic flashlight apparatus; n.e.c. in heading no. 9006	P40406	Cameras (e.g. camcorders, foto & digital still cameras)	...
900710	Cameras, cinematographic; whether or not incorporating sound recording apparatus	P40406	Cameras (e.g. camcorders, foto & digital still cameras)	...
900720	Projectors, cinematographic; whether or not incorporating sound recording or reproducing apparatus	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
900850	Image projectors, photographic enlargers and reducers, excluding cinematographic	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
901010	Photographic laboratory apparatus and equipment; for automatically developing photographic (including cinematographic) film or paper in rolls or for automatically exposing developed film to rolls of paper	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
901050	Photographic laboratory apparatus and equipment; n.e.c. in item no. 9010.10, for photographic (including cinematographic) laboratories; negatoscopes	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
901060	Photographic laboratory apparatus and equipment (including cinematographic); projection screens	P40404	Video (e.g. Video recorders, DVD, Blu-Ray, set-top boxes)	...
901480	Navigational instruments and appliances; for navigation other than aeronautical or space navigation (excluding direction finding compasses)	P40402	Portable Audio & Video (e.g. MP3, e-readers, car navigation)	...
901510	Rangefinders	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
901520	Surveying equipment; theodolites and tachometers	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
901540	Surveying equipment; photogrammetrical surveying instruments and appliances	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
901580	Surveying equipment; articles n.e.c. in heading no. 9015, including hydrographic, oceanographic, hydrological, meteorological or geophysical instruments and appliances (excluding compasses)	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
901811	Medical, surgical instruments and appliances; electro-cardiographs	P40802	Professional Medical (e.g. hospital, dentist, diagnostics)	...
901812	Medical, surgical instruments and appliances; ultrasonic scanning apparatus	P40802	Professional Medical (e.g. hospital, dentist, diagnostics)	...
901813	Medical, surgical instruments and appliances; magnetic resonance imaging apparatus	P40802	Professional Medical (e.g. hospital, dentist, diagnostics)	...
901814	Medical, surgical instruments and appliances; scintigraphic apparatus	P40802	Professional Medical (e.g. hospital, dentist, diagnostics)	...
901819	Medical, surgical instruments and appliances; electro-diagnostic apparatus (including apparatus for functional exploratory examination or for checking physiological parameters), n.e.c. in item no. 9018.1	P40802	Professional Medical (e.g. hospital, dentist, diagnostics)	...
901841	Dental instruments and appliances; dental drill engines, whether or not combined on a single base with other dental equipment	P40802	Professional Medical (e.g. hospital, dentist, diagnostics)	...
901910	Mechano-therapy appliances; massage apparatus and psychological aptitude-testing apparatus	P40205	Personal Care (e.g. toothbrushes, hairdryers, razors)	...
902140	Hearing aids (excluding parts and accessories)	P40801	Household Medical (e.g. thermometers, blood pressure meters)	...
902410	Machines and appliances; for testing the hardness, strength, compressibility, elasticity or other mechanical properties of metals	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
902480	Machines and appliances; for testing the hardness, strength, compressibility, elasticity or other mechanical properties of materials other than metals	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
902511	Thermometers and pyrometers; liquid filled, for direct reading, not combined with other instruments	P40906	#N/A	...
902519	Thermometers and pyrometers; (other than liquid filled, for direct reading), not combined with other instruments	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
902580	Hydrometers and similar floating instruments, barometers, hygrometers, psychrometers, thermometers, pyrometers; recording or not, any combination of these instruments (excluding thermometers and barometers not combined with other instruments)	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
902590	Hydrometers and similar floating instruments, barometers, hygrometers, psychrometers, thermometers, pyrometers; recording or not, any combination of these instruments, parts and accessories	P40907	#N/A	...
902610	Instruments and apparatus; for measuring or checking the flow or level of liquids	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
902620	Instruments and apparatus; for measuring or checking pressure	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
902680	Instruments and apparatus; for measuring or checking variables of liquids or gases (excluding pressure or the flow and level of liquids and those of heading no. 9014, 9015, 9028 and 9032)	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
902710	Instruments and apparatus; gas or smoke analysis apparatus, for physical or chemical analysis	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
902780	Instruments and apparatus; for physical or chemical analysis, for measuring or checking viscosity, porosity, expansion, surface tension or quantities of heat, sound or light, n.e.c. in heading no. 9027	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
902830	Meters; electricity supply or production meters, including calibrating meters thereof	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
902920	Meters; speed indicators and tachometers; stroboscopes	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
903020	Oscilloscopes and oscillographs	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
903031	Multimeters; for measuring or checking voltage, current, resistance or power, without a recording device	P40601	Household Tools (e.g. drills, saws, high-pressure cleaners, lawn mowers)	...
903033	Instruments and apparatus; for measuring or checking voltage, current, resistance or power, without a recording device (excluding multimeters)	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
903040	Instruments and apparatus; specially designed for telecommunications (e.g. cross-talk meters, gain measuring instruments, distortion factor meters, psophometers)	P40305	Telecom (e.g. (cordless) phones, answering machines)	...
903089	Instruments and apparatus; n.e.c. in heading no. 9030, without a recording device	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
903141	Optical instruments and appliances; for inspecting semiconductor wafers or devices or for inspecting photomasks or reticles used in manufacturing semiconductor devices, n.e.c. in chapter 90	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
903149	Optical instruments and appliances; for measuring or checking, n.e.c. in chapter 90	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
903180	Instruments, appliances and machines; for measuring or checking n.e.c. in chapter 90	P40902	Professional Monitoring & Control (e.g. laboratory, control panels)	...
903210	Regulating or controlling instruments and apparatus; automatic type, thermostats	P40901	Household Monitoring & Control (alarm, heat, smoke, excl. screens)	...
910111	Wrist-watches; electrically operated, with or without a stop-watch, with case of precious metal or of metal clad with precious metal, with mechanical display only	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910119	Wrist-watches; electrically operated, with or without a stop-watch, with case of precious metal or metal clad with precious metal, without mechanical display	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910191	Pocket-watches and other watches, including stop-watches; (excluding wrist-watches), with case of precious metal or of metal clad with precious metal, electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910211	Wrist-watches; electrically operated, with or without a stop-watch, (other than those of heading no. 9101) with mechanical display only	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910212	Wrist-watches; electrically operated, with or without a stop-watch, (other than those of heading no. 9101) with opto-electronic display only	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910219	Wrist-watches; electrically operated, with or without a stop-watch, (other than those of heading no. 9101) without mechanical or opto-electronic display	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910221	Wrist-watches; whether or not incorporating a stop-watch facility, with automatic winding	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
910291	Pocket watches and other watches, including stop-watches; (excluding wrist-watches), other than those of heading no. 9101, electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910299	Pocket watches and other watches, including stop-watches; (excluding wrist-watches), other than those of heading no. 9101, other than electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910310	Clocks; with watch movements, electrically operated, excluding clocks of heading no. 9104	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910390	Clocks; with watch movements, other than electrically operated, excluding clocks of heading no. 9104	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910511	Clocks; (excluding those with watch movements and instrument panel clocks), alarm clocks, electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910519	Clocks; (excluding those with watch movements and instrument panel clocks), alarm clocks, other than electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910521	Clocks; (excluding those with watch movements and instrument panel clocks), wall clocks, electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910529	Clocks; (excluding those with watch movements and instrument panel clocks), wall clocks, other than electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910591	Clocks; (excluding those with watch movements and instrument panel clocks), (other than alarm or wall clocks), electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910599	Clocks; (excluding those with watch movements and instrument panel clocks), other than alarm or wall clocks, other than electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910700	Time switches; with clock, watch movement or synchronous motor	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910811	Watch movements; complete and assembled, electrically operated, with mechanical display only or with a device to which a mechanical display can be incorporated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910812	Watch movements; complete and assembled, electrically operated, by means of solar cells, with opto-electronic display	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910819	Watch movements; complete and assembled, electrically operated, by means of solar cells, without mechanical display or device including such or opto-electronic display	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910890	Watch movements; complete and assembled, not automatic winding or electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910910	Clock movements; complete and assembled, electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
910990	Clock movements; complete and assembled, other than electrically operated	P40201	Other Small Household (e.g. small ventilators, irons, clocks, adapters)	...
920710	Musical instruments; keyboard, (other than accordions), the sound of which is produced or must be amplified electrically	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
920790	Musical instruments; (other than keyboard), the sound of which is produced or must be amplified electrically	P40403	Music Instruments, Radio, HiFi (incl. audio sets)	...
940510	Chandeliers and other electric ceiling or wall light fittings; excluding those used for lighting public open spaces or thoroughfares	P40506	Household Luminaires (incl. household incandescent fittings)	...
940520	Lamps, electric; floor-standing or for table, desk or bedside	P40506	Household Luminaires (incl. household incandescent fittings)	...

HS	HS Description	UNU-KEY	UNU KEY Description	Plastic Content (tentative)
940530	Lighting sets; of a kind used for Christmas trees	P40506	Household Luminaires (incl. household incandescent fittings)	...
940540	Lamps and light fittings; electric, n.e.c. in heading no. 9405	P40507	Professional Luminaires (offices, public space, industry)	...
950300	Tricycles, scooters, pedal cars and similar wheeled toys; dolls' carriages; dolls; other toys; reduced-size (scale) models and similar recreational models, working or not; puzzles of all kinds	P40701	Toys (e.g. car racing sets, electric trains, music toys, biking, computers)	...
950450	Games; video game consoles and machines, other than those of subheading 9504.30	P40702	Game Consoles	...
950490	Games; articles for funfair, table or parlour games, including pintables, special tables for casino games, automatic bowling alley equipment, n.e.c. in heading 9504	P40701	Toys (e.g. car racing sets, electric trains, music toys, biking, computers)	...

Annex 5: Links between Plastic-KEYs and EWC-Stat

This Annex presents the links between Plastic-KEY groups/UNU-KEY categories and EWC-Stat. The EWC-Stat categories listed in the table are the most possible categories based on the waste management regulations. In some cases, plastic waste can end up in the other unlisted EWC-Stat categories as well.

Plastic-KEY Group and Description	EWC-Stat Category and Description
P1 Packaging	W074 Plastics wastes W101 Household and similar wastes W102 Mixed and undifferentiated materials
P2 Transport	W081 Discarded vehicles
P3 Building and construction	W074 Plastics wastes W121 Construction and demolition wastes
P4 Electrical and electronic equipment	W082 Discarded electrical and electronic equipment
P5 Consumer and institutional products	W074 Plastics wastes W101 Household and similar wastes W102 Mixed and undifferentiated materials
P6 Industrial machinery	W084 Discarded machines and equipment components
P7 Apparel and textile furnishing articles	W076 Textile wastes W101 Household and similar wastes
P8 Other	W074 Plastics wastes W101 Household and similar wastes W102 Mixed and undifferentiated materials

References

- Amadei, A. M., Sanyé-Mengual, E. and Sala, S. (2022). Modeling the EU plastic footprint: Exploring data sources and littering potential. *Resources, Conservation and Recycling*, 178, 106086. <https://doi.org/10.1016/j.resconrec.2021.106086>.
- Aurisano, N., Huang, L., Milà i Canals, L., Jolliet, O. and Fantke, P. (2021). Chemicals of concern in plastic toys. *Environment International* 146, 106194. <https://doi.org/10.1016/j.envint.2020.106194>.
- Ballatore, A., Verhagen, T. J., Li, Z. and Cucurachi, S. (2022). This city is not a bin: Crowdmapping the distribution of urban litter. *Journal of Industrial Ecology* 26(1), 197–212. <https://doi.org/10.1111/jiec.13164>.
- Barrowclough, D., Birkbeck, C. D. and Christen, J. (2020). *Global trade in plastics: insights from the first life-cycle trade database*. https://unctad.org/system/files/official-document/ser-rp-2020d12_en.pdf.
- Berge, G., Landsem, T. L. and Skjerpen, C. (2023). *Plastic account for Norway: Preliminary methodological approach and use of data sources*. <https://ssb.brage.unit.no/ssb-xmlui/handle/11250/3146426>.
- Cooper, D. R., Skelton, A. C. H., Moynihan, M. C. and Allwood, J. M. (2014). Component level strategies for exploiting the lifespan of steel in products. *Resources, Conservation and Recycling* 84. <https://doi.org/10.1016/j.resconrec.2013.11.014>.
- Cottom, J. W., Cook, E. and Velis, C. A. (2024). A local-to-global emissions inventory of macroplastic pollution. *Nature* 633(8028), 101–108. <https://doi.org/10.1038/s41586-024-07758-6>.
- Cunningham, P. R. and Miller, S. A. (2022). A material flow analysis of carpet in the United States: Where should the carpet go? *Journal of Cleaner Production* 368, 133243. <https://doi.org/10.1016/j.jclepro.2022.133243>.
- Davis, J., Geyer, R., Ley, J., He, J., Clift, R., Kwan, A., Sansom, M. and Jackson, T. (2007). Time-dependent material flow analysis of iron and steel in the UK. Part 2. Scrap generation and recycling. *Resources, Conservation and Recycling*, 51(1). <https://doi.org/10.1016/j.resconrec.2006.08.007>.
- European Commission. (n.d.). *Classifying plastics*. <https://trade.ec.europa.eu/access-to-markets/en/content/classifying-plastics>. Accessed 27.06.2025.
- European Commission, International Monetary Fund, OECD, UN and World Bank. (2009). System of National Accounts 2008. In *System of National Accounts 2008*. <https://doi.org/10.5089/9789211615227.071>.
- EUROSTAT. (2010). *Guidance on classification of waste according to EWC-Stat categories*. https://www.ksh.hu/docs/osztalyozasok/ewc/ewc2010_methodology.pdf.
- Eurostat. (2021). *National requirements for the Intrastat system*. <https://ec.europa.eu/eurostat/documents/3859598/12889594/KS-GQ-21-011-EN-N.pdf>.
- Eurostat. (2023). *International trade statistics - background*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=International_trade_statistics_-_background#Comparison_with_other_sources.
- Forti, V., Baldé, K. and Kuehr, R. (2018). *E-waste statistics: guidelines on classifications, reporting and indicators*. <https://collections.unu.edu/view/UNU:6477>.
- Fraisl, D., See, L., Bowers, R., Seidu, O., Fredua, K. B., Bowser, A., Meloche, M., Weller, S., Amaglo-Kobla, T., Ghafari, D., Bayas, J. C. L., Campbell, J., Cameron, G., Fritz, S. and McCallum, I. (2023). The contributions of citizen science to SDG monitoring and reporting on marine plastics. *Sustainability Science* 18(6), 2629–2647. <https://doi.org/10.1007/s11625-023-01402-4>.
- Galgani, F. and Rangel-Buitrago, N. (2024). White tides: The plastic nurdles problem. *Journal of Hazardous Materials* 470, 134250. <https://doi.org/10.1016/j.jhazmat.2024.134250>.
- Geyer, R. (2020). Production, use, and fate of synthetic polymers. In *Plastic Waste and Recycling* (pp. 13–32). Elsevier. <https://doi.org/10.1016/B978-0-12-817880-5.00002-5>.
- Geyer, R., Jambeck, J. R. and Law, K. L. (2017). Production, use, and fate of all plastics ever made. *Science Advances*,

3(7), e1700782. <https://pubmed.ncbi.nlm.nih.gov/28776036/>.

Gonser, J., Böhm, C., and Küchen, V. (2022). *Secondary Raw Materials and Waste Accounting*. <https://circabc.europa.eu/rest/download/b1e41bf3-ec32-409b-a07b-13639dcc073e?ticket=>.

International Standards Organisation (ISO). (2013). ISO 472:2013 *Plastics – vocabulary*. <https://www.iso.org/standard/44102.html>. Accessed 27.06.2025.

Kawecki, D., Scheeder, P. R. W., & Nowack, B. (2018). Probabilistic Material Flow Analysis of Seven Commodity Plastics in Europe. *Environmental Science and Technology* 52(17), 9874–9888.

Krausmann, F., Schandl, H., Eisenmenger, N., Giljum, S. and Jackson, T. (2017). Material flow accounting: measuring global material use for sustainable development. *Annual Review of Environment and Resources* 42(1), 647–675. <https://doi.org/10.1146/annurev-environ-102016-060726>.

Lau, W. W. Y., Shiran, Y., Bailey, R. M., Cook, E., Stuchtey, M. R., Koskella, J., Velis, C. A., Godfrey, L., Boucher, J., Murphy, M. B., Thompson, R. C., Jankowska, E., Castillo Castillo, A., Pilditch, T. D., Dixon, B., Koerselman, L., Kosior, E., Favoino, E., Gutberlet, J., ... Palardy, J. E. (2020). Evaluating scenarios toward zero plastic pollution. *Science* 369(6510), 1455–1461. <https://doi.org/10.1126/science.aba9475>.

Lebreton, L. C. M., Van Der Zwet, J., Damsteeg, J. W., Slat, B., Andrady, A. and Reisser, J. (2017). River plastic emissions to the world's oceans. *Nature Communications*. <https://doi.org/10.1038/ncomms15611>.

Marine Debris Tracker. (2022). *Debris Tracker Citizen Science Field Guide: Mississippi River Plastic Pollution Initiative*. chrome-extension://efaihttps://assets.ctfassets.net/rtuukkt2fs3w/3xoRM4092s5j4m1hgOP6h7/e9c75b680285676c026a595c342c3657/Field_Guide_Mississippi_Delta.pdf.

Murakami, S., Oguchi, M., Tasaki, T., Daigo, I. and Hashimoto, S. (2010). Lifespan of Commodities, Part I. *Journal of Industrial Ecology* 14(4). <https://doi.org/10.1111/j.1530-9290.2010.00250.x>.

Murakami, S., Yamamoto, H. and Oguchi, M. (2017). Uncertainty in Lifespan Estimation and its Potential Impacts on our Social System. *Procedia CIRP* 61, 140–145. <https://doi.org/10.1016/j.procir.2016.11.229>.

Mutha, N. H., Patel, M. and Premnath, V. (2006). Plastics materials flow analysis for India. *Resources, Conservation and Recycling* 47(3). <https://doi.org/10.1016/j.resconrec.2005.09.003>.

OECD. (2018). *Improving Markets for Recycled Plastics*. <https://doi.org/doi:https://doi.org/10.1787/9789264301016-en>.

OECD. (2022a). *Global Plastics Outlook*. OECD. <https://doi.org/10.1787/aa1edf33-en>.

OECD. (2022b). *Global Plastics Outlook: Economic Drivers, Environmental Impacts and Policy Options*. OECD. <https://doi.org/10.1787/de747aef-en>.

Plastics Europe. (2019). *Plastics-the Facts 2018*. <https://plasticseurope.org/>.

Rodrigue, J.-P. (2020). *The Geography of Transport Systems*. Routledge. <https://doi.org/10.4324/9780429346323>.

The Commonwealth. (2020). *Case Study: Litter Intelligence Programme, New Zealand (on-going)*. <https://thecommonwealth.org/case-study/case-study-litter-intelligence-programme-new-zealand-going#:~:text=Litter%20Intelligence%20is%20led%20by,the%20Environment's%20Waste%20Minimisation%20Fund>.

UNCTAD. (2023a). *New data on sustainable oceans, plastics and trade of biodiversity-based products offer a tool for global action*. <https://sdgpulse.unctad.org/sustainable-trade/>.

UNCTAD. (2023b). *Plastic pollution: The pressing case for natural and environmentally friendly substitutes to plastics*. <https://unctad.org/publication/plastic-pollution-pressing-case-natural-and-environmentally-friendly-substitutes>.

UNCTAD. (n.d.). *Classifications*. <https://unctadstat.unctad.org/EN/Classifications.html>. Accessed 27.06.2025.

UNECE. (2022). *Conference of European Statisticians Framework on Waste Statistics*. UN. <https://unece.org/statistics/publications/conference-european-statisticians-framework-waste-statistics#:~:text=The%20Waste%20Statistics%20Framework%20was,Conference%2C%20and%20major%20international%20organizations>.

UNECE. (2024). *Conference of European Statisticians Guidelines for Measuring Circular Economy Part A: Conceptual Framework, Indicators and Measurement Framework*. <https://unece.org/statistics/publications/guidelines-measuring-circular-economy-part-conceptual-framework-indicators>.

- UNEP. (2022). *Practical guidance on the development of inventories of plastic waste*. <https://www.basel.int/tabid/8755>.
- UNEP. (2023a). *Chemicals in plastics: a technical report*. <https://www.unep.org/resources/report/chemicals-plastics-technical-report>.
- UNEP. (2023b). *Intergovernmental Negotiating Committee on Plastic Pollution*. <https://www.unep.org/inc-plastic-pollution>.
- UNEP. (2023c). *Technical guidelines on the environmentally sound management of plastic wastes*. <https://www.basel.int/tabid/8025>.
- UNEP. (2024). *Text of the Global Framework on Chemicals*. <https://www.unep.org/global-framework-chemicals/framework/text-global-framework-chemicals>.
- United Nations. (2014). *System of Environmental-Economic Accounting 2012-Central Framework*. https://unstats.un.org/unsd/envaccounting/seearev/seea_cf_final_en.pdf.
- United Nations. (2017). *Framework for the Development of Environment Statistics (FDES 2013)*. <https://unstats.un.org/unsd/environment/fdes/FDES-2015-supporting-tools/FDES.pdf>.
- United Nations. (2022). *The Handbook on Management and Organization of National Statistical Systems. 4th Edition of the Handbook of Statistical Organization*. https://unstats.un.org/capacity-development/handbook/Handbook_20230417.pdf.
- United Nations. (n.d.). *UN Comtrade Database*. <https://comtradeplus.un.org/>. Accessed 27.06.2025.
- United States Department of Transportation. (2021). *Default Useful Life Benchmark (ULB) Cheat Sheet*. https://www.transit.dot.gov/TAM/ULBcheatsheet?utm_source=chatgpt.com.
- UNSD. (2023). *Harmonized Commodity Description and Coding Systems (HS)*. <https://unstats.un.org/wiki/pages/viewpage.action?pageId=87426301>.
- UNSD. (n.d.). *UNSD classifications*. <https://unstats.un.org/unsd/classifications/unsdclassifications>. Accessed 27.06.2025.
- UNSTATS. (1997). *Environment Glossary*. <https://unstats.un.org/unsd/environmentgl/gesform.asp?getitem=116#:~:text=Apparent%20Consumption,of%20the%20product%20or%20material>.
- Velis, C. A., Hardesty, B. D., Cottom, J. W. and Wilcox, C. (2022). Enabling the informal recycling sector to prevent plastic pollution and deliver an inclusive circular economy. *Environmental Science and Policy* 138, 20–25. <https://doi.org/10.1016/j.envsci.2022.09.008>.
- Wang, F., Huisman, J., Baldé, K. and Stevels, A. (2012). A systematic and compatible classification of WEEE. *2012 Electronics Goes Green 2012+*, 1–6. <https://collections.unu.edu/view/UNU:8752>.
- Wiesinger, H., Wang, Z. and Hellweg, S. (2021). Deep Dive into Plastic Monomers, Additives, and Processing Aids. *Environmental Science & Technology* 55(13), 9339–9351. <https://doi.org/10.1021/acs.est.1c00976>.
- WTO. (2017). *China's import ban on solid waste queried at import licensing meeting*. https://www.wto.org/english/news_e/news17_e/impl_03oct17_e.htm.
- WTO. (2020). *Plastics pollution and environmentally sustainable plastics trade*. https://www.wto.org/english/tratop_e/ppesp_e/ppesp_e.htm#:~:text=Plastics%20pollution%20and%20environmentally%20sustainable%20plastics%20trade,-*%26text=A%20group%20of%20WTO%20members,environmentally%20sustainable%20trade%20in%20plastics.

Special thanks to UNEP's funding partners. For more than 50 years, UNEP has served as the leading global authority on the environment, mobilizing action through scientific evidence, raising awareness, building capacity and convening stakeholders. UNEP's core programme of work is made possible by flexible contributions from Member States and other partners to the Environment Fund and UNEP Planetary Funds. These funds enable agile, innovative solutions for climate change, nature and biodiversity loss, and pollution and waste.

Support UNEP. Invest in people and planet.
www.unep.org/funding



www.unep.org
unep-communication-director@un.org