



Production of industrial products in 2019–2023



Production of industrial products in 2019–2023

Statistics Poland

Warsaw 2024

Content-related works

Statistics Poland, Enterprises Department

Supervised by

Katarzyna Walkowska

Editorial team

Elżbieta Fidrych, Adam Górecki, Monika Hodzyńska, Katarzyna Korfanty-Rusiniak, Anna Kruk, Agnieszka Marczak, Anna Pazik, Krzysztof Szewczuk, Jerzy Tumiłowicz

Editorial work

Zakład Wydawnictw Statystycznych

Typesetting and graphics

Anna Drewnik, Aleksandra Paprocka, Beata Lipińska, Marek Bartosz

e-ISSN 2720-667X

Publications available on website

<http://www.stat.gov.pl>

When publishing Statistics Poland data — please indicate the source

Preface

This study is the next edition of the analytical publication, which presents a rich set of information on the production of major industrial products in the last four years 2019–2023. This publication is a broadening of an annual publication from the Statistical Information series, published every July and containing preliminary data on the last surveyed year. Purpose of the analytical publication is to present information on the production of industrial products in Poland in terms of quantity and value, taking into account individual industries and type of enterprises producing these products. In addition, the publication presents data on the production of industrial products in Poland compared to other European Union countries.

The publication consists of an analytical part and methodological notes containing a description of the scope of the publication and definitions of basic concepts. The analytical part is supplemented by a tabular annex, which contains data in Excel file. The data were published in July of this year in the publication „Production of industrial products in 2023”. Data in the present publication have been updated, according to the revision policy of data on production of industrial products.

Presenting this publication we hope that the data will be a valuable source of information on production of major products in Poland. At the same time, we will appreciate any comments and suggestions regarding the scope of data presented in this publication, which will lead to better adaptation to the needs of users.

We would like to thank all Respondents participating in the yearly survey on the production of industrial products carried out on the P-01 form "Report on production" who made compiling this publication possible.

Director
of Enterprises Department



Katarzyna Walkowska

President
Statistics Poland



Dominik Rozkrut, Ph.D.

Contents

Preface	3
Contents	4
List of tables	5
List of charts and map	7
List of tables available online in the Excel file	6
Symbols	9
Main abbreviations	9
Introduction	10
Executive summary	11
Chapter 1. Sold production of industrial products	15
1.1. Sold production of industrial products by divisions and groups of PKWiU	16
1.2. Production under sub-contracted operations	21
1.3. Sold production of industrial products by voivodships	23
1.4. Sold production of industrial products by size class of entities	26
1.5. Sold production of industrial products by kind of activity of entities producing products... ..	29
1.6. Sold production of major industrial products	31
1.7. Sold production of products with embedded systems	33
1.7.1. Structure of entities reporting data on products with embedded systems	33
1.7.2. Structure of sold production of products with embedded systems	37
Chapter 2. Manufactured production of selected industrial products by industry branch	41
2.1. Energy raw materials	41
2.2. Products of food and tobacco industry	43
2.3. Textiles, wearing apparel and leather products	50
2.4. Products of wood and paper industry	55
2.5. Chemicals and chemical products	59
2.6. Rubber and plastic products	63
2.7. Non-metallic minerals and non-metallic mineral products	68
2.8. Basic metals and fabricated metal products	72
2.9. Computer, electronic and optical products	77
2.10. Machinery and equipment	78
2.11. Transport equipment	84
2.12. Products of furniture industry	88
2.13. Secondary raw materials	89
Chapter 3. Production of industrial products in Poland compared to other European Union countries	92
Methodological notes	99
1. Subject and scope of the study	99
2. Main definitions	98
Annex 1	100
Table 54 Share in value of sold production of industrial products in PKWiU divisions by the most common predominant activity of entities in 2023	102
Annex 2	105
Abbreviations of descriptions of sections, divisions and products and list of measurement units	105

List of tables

Table 1.	Sold production of products by selected PKWiU divisions	17
Table 2.	Groups with the largest share in value of sold production of products by PKWiU divisions in 2023	20
Table 3.	Sold production under sub-contracted operations	22
Table 4.	Production of selected wearing apparel	23
Table 5.	Share of voivodship in sold production of industrial products	24
Table 6.	Sold production of products by size class of entities	26
Table 7.	Share of entities with 50 and more persons employed in value of sold production of products by PKWiU divisions	27
Table 8.	Sold production of products by primary activity of entities	29
Table 9.	Sold production of products by kind of activity of non-industrial entities	30
Table 10.	Sold production of industrial products with the largest share in PKWiU divisions (in thousand PLN)	32
Table 11.	Number of entities producing products with embedded systems	34
Table 12.	Sold production of products with embedded system and IoT by origin of the company's capital	37
Table 13.	Sold production of products with embedded system and IoT in 2023 by predominant activity of entity	39
Table 14.	Sold production of products with embedded system and IoT in 2023 by predominant activity of entity and origin of the capital	40
Table 15.	Manufactured production of selected energy raw materials	42
Table 16.	Manufactured production of canned meat	44
Table 17.	Manufactured production of soup, prepared meals and dishes	44
Table 18.	Manufactured production of sugar and sugar confectionery	47
Table 19.	Manufactured production of pet foods	49
Table 20.	Manufactured production of vodka	50
Table 21.	Manufactured production of cigarettes and tobacco	50
Table 22.	Manufactured production of woven fabrics	51
Table 23.	Manufactured production of men's wearing apparel	51
Table 24.	Manufactured production of women's wearing apparel	52
Table 25.	Manufactured production of footwear by type	54
Table 26.	Manufactured production of selected products of wood industry	56
Table 27.	Manufactured production of selected wooden packagins	57
Table 28.	Manufactured production of paper hygiene products	58
Table 29.	Manufactured production of major basic chemicals	59
Table 30.	Manufactured production of plastics	61
Table 31.	Manufactured production of cleaning products	62
Table 32.	Manufactured production of selected rubber goods	65
Table 33.	Manufactured production of plastic windows and doors for building industry	68

Table 34.	Manufactured production of selected building materials used in construction	69
Table 35.	Manufactured production of aluminium plates	73
Table 36.	Manufactured production of metal construction	74
Table 37.	Manufactured production of metal windows and doors	75
Table 38.	Manufactured production of radiators and central heating boilers	76
Table 39.	Manufactured production of selected fabricated metal products	76
Table 40.	Manufactured production of television receivers and radio receivers	77
Table 41.	Manufactured production of selected electrical equipment	79
Table 42.	Manufactured production of selected household appliances	80
Table 43.	Manufactured production of selected items of general-purpose machinery	81
Table 44.	Manufactured production of selected soil machinery	82
Table 45.	Manufactured production of motor vehicles for the transport of 10 and more persons (buses)	86
Table 46.	Manufactured production of pleasure and sports boats	86
Table 47.	Manufactured production of railway rolling stock	87
Table 48.	Manufactured production of wooden furniture	88
Table 49.	Manufactured production of metal furniture and plastic furniture	89
Table 50.	Recovery of selected metallic secondary raw materials	90
Table 51.	Sold production of products covered by PRODCOM survey by selected CPA divisions in 2023	94
Table 52.	Number of products with share of more than 10% in EU volume of sold production in 2023	96
Table 53.	Share in EU sold production volume of selected products of five selected EU member states in 2023	97
Table 54.	Share in value of sold production of industrial products in PKWiU divisions by the most common predominant activity of entities in 2023	102

List of charts and map

Chart 1.	Dynamics of sold production of industrial products by PKWiU sections (previous year = 100)	16
Chart 2.	Change in value of sold production of industrial products by PKWiU divisions in 2023 (2022 = 100)	18
Chart 3.	Structure of value of sold production of industrial products by PKWiU divisions in 2023 and its change (previous year=100)	19
Chart 4.	Sold production under sub-contracted operations	21
Chart 5.	Sold production of industrial products by voivodships in 2023	24
Chart 6.	Dynamics of sold production of industrial products by voivodship	25
Chart 7.	Sold production by size classes and PKWiU divisions in 2023	28
Chart 8.	Share of industrial and non-industrial entities in the value of sold production of products by PKWiU divisions in 2023	30
Chart 9.	Top 10 of industrial products by value of sold production	31
Chart 10.	Number of entities declaring sold production of products with embedded systems by origin of capital	35
Chart 11.	Structure of entities producing products with embedded systems and Internet of Things by predominant activity of entities in 2023	36
Chart 12.	Sold production of products with embedded systems	38
Chart 13.	Manufactured production of selected fuel products	41
Chart 14.	Manufactured production of fuels for vehicles	42
Chart 15.	Manufactured production of fresh and chilled beef and pork meat	43
Chart 16.	Manufactured production of butter and margarine	46
Chart 17.	Manufactured production of groats and meal from cereals	47
Chart 18.	Manufactured production of coffee, tea and herbal infusions	48
Chart 19.	Manufactured production of prepared feeds for farm animals	48
Chart 20.	Manufactured production of mineral waters	49
Chart 21.	Structure of manufactured production of woven fabrics by type	50
chart 22.	Manufactured production of men's wearing apparel	52
Chart 23.	Manufactured production of women's wearing apparel	53
Chart 24.	Manufactured production of women's blouses and men's shirts	53
Chart 25.	Manufactured production of men's and women's outerwear	54
Chart 26.	Manufactured production of footwear by type	55
Chart 27.	Manufactured production of assembled parquet panels of wood	56
Chart 28.	Manufactured production of wooden windows and wooden doors.....	57
Chart 29.	Structure of manufactured production of packages of paper and paperboard	58
Chart 30.	Manufactured production of trays, dishes, plates, cups and the like of paper or paperboard.....	59

Chart 31.	Structure of manufactured production of chemical fertilizers	60
Chart 32.	Manufactured production of pesticides and other agrochemicals	60
Chart 33.	Manufactured production of paints and painting materials	62
Chart 34.	Manufactured production of selected toiletries	63
Chart 35.	Manufactured production of tyres by types	64
Chart 36.	Structure of manufactured production of plates, sheets, film, foil and strip by types in 2023	66
Chart 37.	Manufactured production of selected plastic tubes	67
Chart 38.	Manufactured production of selected plastic sanitary ware	68
Chart 39.	Manufactured production of selected non-metallic mineral products	69
Chart 40.	Structure of manufactured production of ceramic tiles and flags	70
Chart 41.	Manufactured production of cement and cement clinker	71
Chart 42.	Manufactured production of crude steel	72
Chart 43.	Manufactured production of rolled products	72
Chart 44.	Manufactured production of steel tubes	73
Chart 45.	Structure of manufactured production of copper products	74
Chart 46.	Manufactured production of data processing machines	77
Chart 47.	Manufactured production of water and electricity meters	78
Chart 48.	Manufactured production of AC motors	80
Chart 49.	Structure of manufactured production of agricultural tractors	81
Chart 50.	Manufactured production of selected mowers, harvesting machinery and sprayers	83
Chart 51.	Manufactured production of selected machine tools for working metal	83
Chart 52.	Manufactured production of selected machinery and equipment for construction and road building	84
Chart 53.	Manufactured production of passenger cars and trucks and road tractors	85
Chart 54.	Manufactured production of internal combustion engines for motor vehicle	85
Chart 55.	Manufactured production of bicycles	87
Chart 56.	Structure of manufactured production of mattresses	89
Chart 57.	Recovery of metallic secondary raw materials in 2023	90
Chart 58.	Recovery of non-metallic secondary raw materials	91
Chart 59.	Percentage of PRODCOM headings for which sold production was reported for 2023 by EU countries	93
Chart 60.	Sold production value of selected products in Poland and in the European Union in 2023	95
Map 1.	Manufactured production of milk per capita by voivodship in 2023	45

List of tables available online in the Excel file

Table 1.	Manufactured production of industrial products in 2023
Table 2.	Manufactured production of major industrial products in 2019–2023
Table 3.	Sold production of major products and industrial services in PRODCOM survey in 2023
Table 4.	Value of sold production by PKWiU divisions, groups and classes in 2021–2023
Table 5.	Sold production of products with embedded systems, including the Internet of Things, by predominant activity of the entity and the origin of capital

Symbols

Symbol	Description	Symbol	Description
(.)	data not available, classified data (statistical confidentiality) or providing data impossible or purposeless	(-)	magnitude zero
		(*)	revised data
		„of which”	indicates that not all elements of the sum are given

Main abbreviations

Symbol	Description	Symbol	Description
CPA	Classification of Products by Activity	PRODCOM	European product statistics
p.p.	percentage points	UE	European Union
PKD	Polish Classification of Activities	UE27	27 European Union Member States
PKWiU	Polish Classification of Goods and Services	IoT	Internet Rzeczy

The abbreviated names of sections, divisions and industrial products used in the publication and units of measurement are included in Annex 2.

Introduction

The analytical publication Production of industrial products in Poland contains data on production of major products or assortment groups representing various divisions of the Polish Classification of Goods and Services (PKWiU 2015), belonging to the sections: Products of mining and quarrying and Manufactured products, obtained in annual survey compliant with the requirements of the Community survey of industrial production. The annual survey is based on data collected from enterprises employing 10 or more persons using the data set P-01 Production report.

The purpose of the publication is to present changes in the national production of industrial products on the basis of data expressed in physical units of measurement and to compare the results in the Community survey of industrial production PRODCOM. The publication includes a retrospective of manufactured and sold production of major industrial products in the years 2019–2023. The selection of presented industrial products responds to the needs of a wide range of users, including government administration, industry associations, individual producers and scientific institutions.

The first chapter presents data on sold production of products in various cross-sections, i.e. according to product classifications and nomenclatures used in product surveys (PKWiU, PRODPOL), by voivodships and by selected features of entities producing products, i.e. size class, activity as defined in NACE. Data on subcontracted production and the production of products incorporating embedded systems, including the Internet of Things, were also presented. The second chapter contains data on the volume of manufactured production of representative products selected from individual industries at the country level and data on the recovery of secondary raw materials in industrial entities. In chapter three, data from the Community survey of industrial production PRODCOM are presented, collected according to the PRODCOM List binding for 2023 in European Union countries.

Executive summary

Key data

about the survey on the production of industrial products in 2023

37 628	economic entities covered by the annual survey on the production of industrial products
27	divisions of PKWiU covered by the survey on the production of industrial products
4 858	products or assortment groups covered by the observation in the annual survey
1 786.3 mld PLN	value of sold production of products
14.2 mld PLN	value of the sold production of products manufactured under subcontracting
32.7 mld PLN	value of sold production of products with embedded systems
26.6%	share of products with the Internet of Things in the value of sold production of products containing embedded systems
17.2%	the largest increase in the value of sold production (2022=100) – division Motor vehicles, trailers and semi-trailers
18.1%	the largest share in the value of sold products – division Food products
94.5%	the share of sold production of entities employing 50 persons and more
29.5%	the largest share of entities employing 10–49 persons in the sold production – division Wearing apparel
96.6%	the share of sold production of industrial enterprises
76.1%	the share of sold production reported by non-industrial entities – entities classified in section Wholesale and retail trade
21.4%	the share of sold production of products in terms of the value of entities that had their seat in Mazowieckie voivodship
1st place	in the ranking of products with the highest value of sold production – diesel oils

The industrial production survey covers products classified to two sections of PKWiU 2015: Products of mining and quarrying and Manufactured products.

Sold production of industrial products

In 2023, the value of sold production at current prices amounted to 1,786,258,128.1 thousand PLN and was lower than in the previous year by 5.1% but compared to 2019 it was higher by 46.9%.

In 2023, compared to the previous year, the value of sold production of products increased in 13 divisions, among others Motor vehicles, trailers and semi-trailers (by 17.2%), Other transport equipment (by 14.0%), Pharmaceutical products and preparations (by 11.5%), Other products of mining and quarrying (by 9.0%).

A decrease of the value of sold production of products in comparison to 2022 was noted in 14 divisions, among others Metal ores (by 86.1%), Chemicals and chemical products (by 23.9%), Crude petroleum and natural gas (by 19.3%), Basic metals (by 16.9%), Wood and products of wood, cork and straw (by 16.7%), Paper and paper products (by 12.3%), Computers, electronic and optical products (by 11.8%).

Sold production under subcontracting amounted to 14,202.8 million PLN in 2023 and increased by 4.8% compared to 2022. The increase in subcontracting production at the national level was primarily influenced by increases in such production in the following sections: Electrical equipment (by 90.5%), Computers, electronic and optical products (by 35.0%), Machinery and equipment (by 25.5%), Motor vehicles, trailers and semi-trailers (by 20.1%), Chemicals and chemical products (by 18.8%)

In 2023, the largest value of sold production of products, as in previous years, was recorded in Mazowieckie – 383,748.8 million PLN, which accounted for 21.4% of share in the domestic value of sold production of products. The second voivodship with a significant share was Śląskie – 276,693.7 million PLN (15.5% of the total value), followed by Dolnośląskie – 212,923.0 million PLN (11.9%), Wielkopolskie – 211,073.4 million PLN (11.8%) and Małopolskie – 122,975.9 million PLN (6.9%). The lowest value of sold production was recorded in Świętokrzyskie – 33,663.5 million PLN.

In the analysed period, the share of total value of sold production reported by entities with 50 and more persons employed increased from 93.5% to 94.5%. In 2023 the value of sold production of products of large enterprises (50 and more persons employed) amounted to 1,687,851.3 million PLN, while for medium-sized enterprises (having 10–49 persons employed) – 98,406.9 million PLN.

Considering the primary kind of activity of enterprises manufacturing products, sold production was reported in largest part by industrial entities having their primary activities classified to the following sections of NACE: Mining and quarrying; Manufacturing.

The value of sold production of products manufactured by industrial units in relation to the total sold production of products in 2023 decrease to 1,725,290.6 million PLN (by 5,2%).

The value of sold production of products manufactured by non-industrial entities in 2023 was 60,967.6 million PLN, of which 96.7% of sold production was reported by entities, whose activities were classified in five sections: Wholesale and retail trade (section G), Construction (section F), Agriculture, forestry, hunting and fishing (section A), Information and communication (section J) and Professional, scientific and technical activities (section M).

In terms of the value of sold production, from 2019 diesel oils remain on the first place. Whereas, on the second and the third place, as in the previous year, there were respectively: lithium-ion batteries and other parts and accessories for motor vehicles.

In 2023 sold production of products with embedded systems amounted to 32,696.1 million PLN. The share of products with Internet of Things in the value of sold production of products with embedded systems was 26.6%. The production of products with embedded systems was dominated by entities with foreign capital, whose share amounted to 60.7% in 2023. The highest value of sold production in 2023 for products with embedded systems was recorded for entities with the primary kind of activity classified in divisions 26 Manufacture of computers, electronic and optical products and 27 Manufacture of electrical equipment.

Manufactured production of products

In 2023, volume of production of measurement according to PRODPOL nomenclature was surveyed for 4,858 products and assortment groups, and for 3,911 of them, entities of national economy reported manufactured production.

In the years 2019–2023, production increased, among others, for: women's suits and ensembles, knitted or crocheted (by 368.8%), bicycles for children (by 264.1%), unwrought non-alloy aluminium (by 149.9%), fixed resistors (by 124.8%), road tractors for semi-trailers (by 118.9%), pesticides (by 117.4%), self-adhesive printed labels of paper or paperboard (by 117.8%), combine harvester-threshers (by 108.0%), white chocolate (by 107.7%), prepared meals and dishes based on meat (by 105.5%), glues based on synthetic resins (by 104.3%), heaters (by 102.6%), trays, dishes, plates, cups and the like of paper or paperboard (by 100.4%), converter copper from recycling materials (by 94.7%), iron or steel solid fuel domestic appliance (by 90.1%), non-refractory surfacing preparations for facades, inside walls, ceilings and the like (by 86.3%), radio receivers (by 84.8%), self-ignition internal combustion piston engines for vehicles (by 83.3%), floor, wall or ceiling coverings of plastics (by 80.8%), anti-knock preparations; additives for mineral oils and similar products (by 78.2%), multi-phase alternating current motors (by 71.0%), table candles (by 64.6%), tissues (by 59.7%), aluminium stranded wire, cables, plaited bands and the like excluding electrically insulated (by 59.4%), agricultural tractors (by 58.7%), yarn of artificial staple fibres, not packaged for retail sale (by 58.4%), reciprocating displacement compressors (by 56.0%), air-cooled transformers (by 52.1%), mustard (by 51.3%), frozen bread (by 49.2%), polishes, creams and similar preparations, for the maintenance of wooden furniture, floors or other woodwork (excluding artificial and prepared waxes) (by 48.3%), chocolate and other food preparations containing cocoa, with added cereal; fruit or nuts (by 47.9%), boards, sheets, panels, tiles and similar articles of plaster or of compositions based on plaster, not faced or reinforced with paper or paperboard only (by 45.1%), motor oils (by 44.6%), plastic sinks (by 43.5%).

In the analysed period, a decrease in the production was recorded for: toluene (by 96.0%), lead, zinc and tin ores and concentrates (by 95.5%), vacuum pumps (by 90.5%), domestic food grinders, mixers and fruit or vegetable juice extractors (by 87.6%), refined sunflower-seed oil and their fractions, for human consumption (by 81.6%), toilet and kitchen linen (by 79.6%), passenger cars with engine of cylinder capacity 1001 – 1500 cm³ (by 79.4%), other glazed ceramic flags and paving, hearth or wall tiles, with a face less than 90 cm² (by 79.1%), self propelled bulldozers and angledozers (by 78.3%), fixed capacitors (by 75.1%), bricks made of clay (by 74.2%), women's jackets and blazers, knitted or crocheted (by 71.8%), time-registers, time-recorders (by 70.0%), harrows excluding disc harrows (by 69.4%), woven fabrics of synthetic filament yarn and artificial filament yarn (by 65.5%), women's dresses, skirts and culottes not knitted or crocheted (by 64.3%), men's suits and ensembles, not knitted or crocheted (by 64.3%), buckwheat groats (by 64.1%), butanols (excluding butanol-1 (n-butyl alcohol)) (by 63.1%), concrete mixers (excluding for road construction) (by 62.2%), assembled parquet panels of wood for mosaic floors (by 60.6%), glycerol (by 60.4%), footwear with leather uppers (by 59.6%), women's trousers, overalls, breeches and shorts, not knitted or crocheted (by 59.2%), distributors for mineral or chemical fertilizer (by 58.3%), butanol-1 (by 58.1%), handbags of leather (by 57.4%), gas stoves with oven (by 56.2%), men's or boys' shirts, not knitted or crocheted (by 55.5%), coal steamers (by 55.5%), phosphatic (including multi-compound fertilizers) (by 55.1%), hosiery (by 54.9%), needle roller bearing (by 52.9%), canned pork, beef, veal meat, including shoulders and hams and canned edible meat offal (by 51.0%), telephone sets (by 51.2%), potassic fertilizers (by 51.0%), ploughs (by 50.8%), mixing valves for baths of brass (by 50.4%).

In 2023, in comparison to 2022, manufactured production increased, among others, for unwrought aluminium for steel deoxidation, technically pure (by 205.1%), optical fibre cables (by 117.5%), glues based on synthetic resins (by 102.3%), polishes, creams and similar preparations, for the maintenance of wooden furniture, floors or other woodwork (excluding artificial and prepared waxes) (by 101.8%), passenger cars with engine of cylinder capacity 1001–1500 cm³ (by 92.7%), continuous-action elevators and conveyors, for underground use (by 76.6%), direct current motors and generators (by 57.6%), lifts (by 51.8%), frozen sea fish (48.5%), heaters (by 46.1%), road tractors for semi-trailers (by 45.1%), machines for cleaning or sorting seed, grain or dried leguminous vegetables (by 45.0%), reciprocating displacement compressors

(by 44.3%), white chocolate (by 44.0%), self-adhesive printed labels of paper or paperboard (by 42.7%), fixed resistors (by 37.9%), pile fabrics, terry towelling and other special fabrics (by 37.2%), lorries (by 37.1%), structural-floor clay hollow bricks (by 36.7%), table, kitchen articles or buckets of tinplated sheet, including varnished or painted (by 34.6%), overhead travelling cranes on fixed support (by 33.6%), pesticides (by 33.1%), women's jackets not knitted or crocheted (by 32.3%), sorting, screening, separating, crushing, grinding, mixing machines for mining (by 31.9%), handbags of leather (by 29.9%), paints and varnishes, based on polyesters dispersed/dissolved in a nonaqueous medium, weight of the solvent more than 50% of the weight of the solution including enamels and lacquers (by 29.1%), self-ignition internal combustion piston engines for vehicles (by 27.3%).

Decrease of production in 2023 in comparison to the previous year was recorded, among others, for: vacuum pumps (by 80.5%), toilet and kitchen linen (by 70.2%), self-propelled bulldozers and angledozers (by 69.4%), pickled mushrooms (by 69.2%), bricks made of clay (by 66.2%), domestic food grinders, mixers and fruit or vegetable juice extractors (by 65.0%), preparations for perfuming or deodorising rooms, including odoriferous preparations used during religious rituals (by 55.2%), refined sunflowerseed oil and its fractions, for human consumption (by 51.2%), sprayers designed to be drawn by agricultural tractors, of a kind used in forestry and orcharding (by 51.1%), wired sheets or profiles, of cast or rolled glass whether or not with absorbent, reflecting or non-reflecting layer, but not otherwise worked (by 51.0%), sorting, screening, separating, washing, crushing, mixing machines for earth, stone, ores and other mineral substances (by 50.8%), mountain bikes (by 49.6%), portable automatic data-processing machines weighing ≤ 10 kg, such as laptop and notebook computers; personal digital assistants and similar computers (by 46.8%), assembled parquet panels of wood for mosaic floors (by 46.4%), telephone sets (by 45.1%), compression-ignition engines for industrial use (by 44.3%), wire of stainless steel (by 44.3%), aluminium plates, sheets and strip, of a thickness $>0,2$ mm (by 43.9%), harrows excluding disc harrows (by 43.5%), polyvinyl chloride not mixed with any other substances (by 43.5%), tourist / city bikes (by 43.2%), non-wired sheets of cast or rolled glass, whether or not with absorbent, reflecting or non-reflecting layer, but not otherwise worked (by 43.2%), chaff cutter for cutting green forage and straw (by 43.1%), women's suits and ensembles, not knitted or crocheted (by 43.0%), aluminium reservoirs, tanks, vats and similar containers for any material (other than compressed or liquefied gas), of a capacity > 300 liters (by 42.9%).

Production of industrial products compared to other European Union countries

In 2023, similar to 2020–2022, Poland ranked fifth, after Germany, France, Italy and Spain, in terms of the number of PRODCOM items for which sold production was reported. In the year 2023 Poland reported sold production data for 3,141 products and product assortment groups, which constitutes 77.7% of all headings covered by the survey.

Poland's significant share of over 20% in the value of production sold in the European Union in 2023 was recorded for 237 products, including television receivers (55.5%), cloth washing and drying machines, of household type (53.5%), apple juice (37.4%), upholstered seats with wooden frames (34.8%), household dishwashing machines (33.8%), laminated safety glass suitable for incorporation in vehicles (28.9%), smoking tobacco (excluding tobacco duty) (24.1%).

In 2023, for 346 products Poland had a share of between 10.1% and 20.0% in the volume of production sold in the European Union. Most products were classified in the divisions: Food products – 61 products, Chemicals and chemical products – 34, Rubber and plastic products – 29, Machinery and equipment and Basic metals – 27 products each, Electrical equipment – 25 products.

For 298 products, a share of more than 20% in the volume of EU27 sold production was recorded, of which 71 products had a share exceeding 50%, including raw sugar, desktop computers, television receivers, medium density fibreboard (MDF) of a thickness not exceeding 5 mm, candles, household dishwashing machines, cloth washing and drying machines, of household type.

Chapter 1. Sold production of industrial products

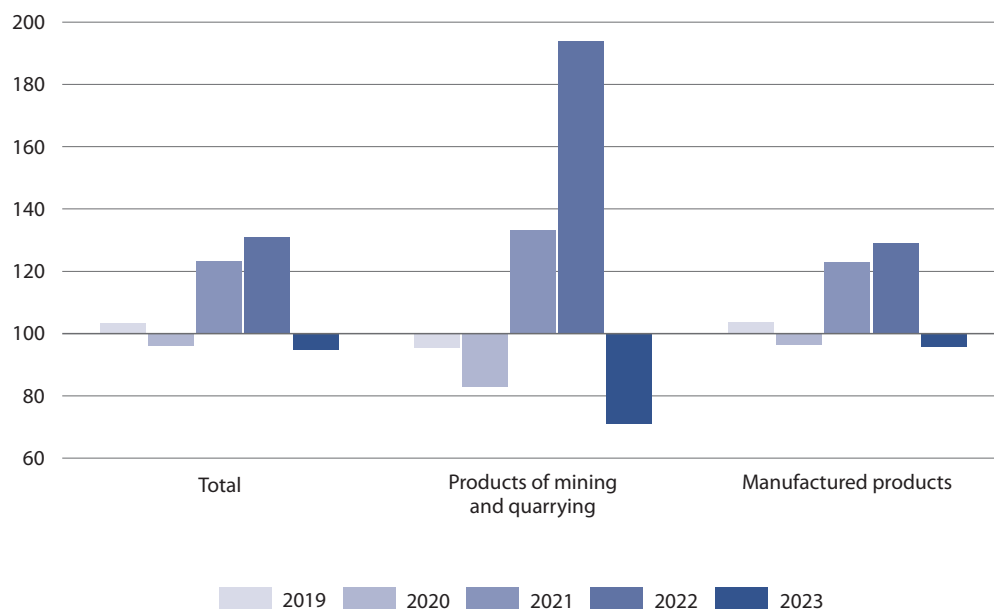
Sold production of industry products is the volume and value of goods sold outside the enterprise during reporting period, manufactured as own production or made by subcontracting in other unit from materials provided by the enterprise, regardless of the time of their production.

Sold production value includes:

- 1) received and receivable amounts for products of own production sold outside the enterprise during the reporting period, for products manufactured by the enterprise as subcontractor from enterprise's own materials, and for products manufactured by another producer – subcontractor – from materials provided by the enterprise – adjusted for due extra charges, granted rebates, reductions, discounts or contractual due payments for the sale of products;
- 2) the value of goods not categorized as sale but treated as sales, i.e. the value of own products supplied to own retail outlets as well as to own catering or wholesale establishments;
- 3) the value of products manufactured and treated as sales, i.e.: transferred free of charge to enterprise's benefit fund, used for enterprise's investment, for the purpose of representation and advertisement, provided for the taxpayer's and staff's personal needs, and donated free of charge.

Sold production value of products are presented at current prices without VAT, but including excise tax.

The survey of sold production of products covers producers' own products, classified into two sections of PKWiU 2015: Mining and quarrying products and Manufactured products. In 2023, the value of production sold at current prices amounted to 1,786,258,128.1 thousand PLN and was lower than the year before by 5.1%, and compared to 2019 was higher by 46.9%

Chart 1. Dynamics of sold production of industrial products by PKWiU sections (previous year = 100)

Dynamics calculated on the basis of value of sold production.

1.1. Value of sold production of products by divisions and groups of PKWiU

In 2023, in comparison to 2019, the value of sold production of products increased in 24 divisions, among others in divisions Electrical equipment (by 102.7%), Hard coal and lignite (by 83.3%), Food products (by 58.9%), Pharmaceutical products and preparations (by 49.5%), Other manufactured goods (by 46.5%), Machinery and equipment (by 45.5%), Other transport equipment (by 45.2%), Motor vehicles, trailers and semi-trailers (by 45.0%), Basic metals (by 44.8%), Fabricated metal products (by 44.3%), Rubber and plastic products (by 40.4%), Paper and paper products (by 40.1%), Wood and products of wood, cork and straw (by 40.0%), Other products of mining and quarrying (by 37.4%), Other non-metallic mineral products (by 36.9%), Chemicals and chemical products (by 34.7%), Computers, electronic and optical products (by 31.9%), Beverages (by 31.0%), Textiles (by 20.6%), Furniture (by 18.4%), Printing services and reproduction services of recorded media (by 16.1%). A decrease of the value of sold production of products in comparison to 2019 was recorded, among other in division Leather and related products (by 15.6%).

Table 1. Sold production of products by selected PKWiU divisions

Specification	2019	2020	2021	2022	2023	
	in million PLN					2019=100
Total	1 215 629.2	1 167 267.8	1 437 864.4	1 882 900.0	1 786 258.1	146.9
Products of mining and quarrying	34 527.1	28 661.5	38 213.6	74 092.2	52 646.9	152.5
of which						
Hard coal and lignite	21 387.6	17 341.7	21 339.7	37 455.4	39 203.6	183.3
Other products of mining and quarrying	6 890.4	6 619.5	7 334.7	8 686.0	9 466.3	137.4
Manufactured products	1 181 102.1	1 138 606.3	1 399 650.8	1 808 807.5	1 733 611.2	146.8
Food products	203 527.8	208 670.2	233 302.7	311 705.5	323 410.1	158.9
Beverages	33 374.2	33 169.2	36 371.0	41 291.5	43 724.9	131.0
Tobacco products	17 923.6	17 777.7	17 248.2	18 502.8	19 462.5	108.6
Textiles	9 373.9	9 645.1	11 087.5	11 174.5	11 302.3	120.6
Wearing apparel	5 281.7	4 333.3	4 628.1	5 161.9	5 455.7	103.3
Leather and related products	3 552.4	2 901.5	3 016.3	3 083.7	2 998.7	84.4
Wood and products of wood, cork and straw	28 338.4	28 539.8	38 154.9	47 589.1	39 660.3	140.0
Paper and paper products	43 515.4	42 653.9	52 888.8	69 475.7	60 943.6	140.1
Printing services and reproduction services of recorded media	7 889.2	7 092.5	7 253.5	8 826.1	9 157.7	116.1
Chemicals and chemical products	69 998.6	68 424.4	88 904.0	123 990.6	94 317.7	134.7
Pharmaceutical products and preparations	10 865.5	11 418.1	12 020.1	14 575.0	16 245.1	149.5
Rubber and plastic products	84 654.4	84 735.6	105 960.5	127 921.5	118 845.6	140.4
Other non-metallic mineral products	53 011.7	52 570.9	60 140.9	74 389.6	72 549.7	136.9
Basic metals	72 292.8	68 944.5	102 565.3	125 986.7	104 674.0	144.8
Fabricated metal products	68 591.0	68 324.2	84 669.1	104 531.7	98 997.8	144.3
Computers, electronic and optical products	34 411.5	36 396.2	47 783.7	51 456.9	45 400.0	131.9
Electrical equipment	71 615.9	81 814.6	106 561.0	135 788.6	145 146.8	202.7
Machinery and equipment	48 052.7	44 984.3	55 683.2	68 168.3	69 913.1	145.5
Motor vehicles, trailers and semi-trailers	141 442.3	120 690.5	142 361.7	174 976.2	205 136.7	145.0
Other transport equipment	20 287.2	18 940.3	19 413.8	25 831.8	29 447.8	145.2
Furniture	43 649.9	41 858.2	49 510.4	54 491.5	51 669.4	118.4
Other manufactured goods	9 828.0	9 825.6	12 671.4	15 062.5	14 394.6	146.5

Chart 2. Structure of value of sold production of products by PKWiU divisions in 2023 and its change (previous year=100)

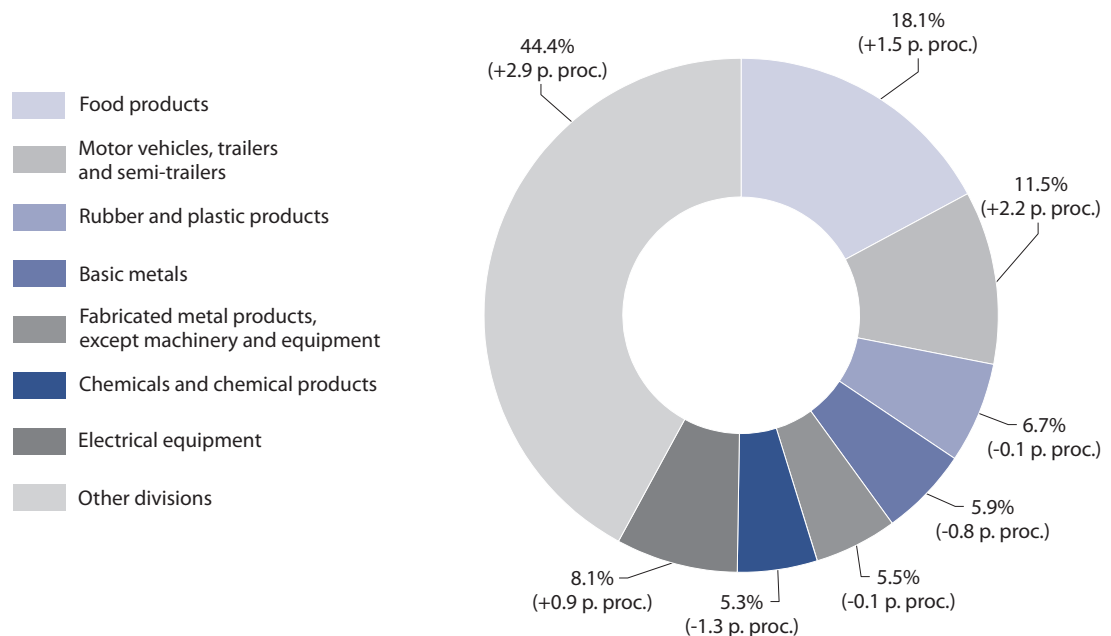
In 2023, compared to the previous year, the value of sold production of products increased in 13 divisions, among others Motor vehicles, trailers and semi-trailers (by 17.2%), Other transport equipment (by 14.0%), Pharmaceutical products and preparations (by 11.5%), Other products of mining and quarrying (by 9.0%), Electrical equipment (by 6.9%), Beverages (by 5.9%), Tobacco products (by 5.2%), Hard coal and lignite (by 4.7%), Food products (by 3.8%), Printing services and reproduction services of recorded media (by 3.8%). A decrease of the value of sold production of products in comparison to 2022 was noted in 14 divisions, among others Metal ores (by 86.1%), Chemicals and chemical products (by 23.9%), Crude petroleum and natural gas (by 19.3%), Basic metals (by 16.9%), Wood and products of wood, cork and straw (by 16.7%), Paper and paper products (by 12.3%), Computers, electronic and optical products (by 11.8%), Rubber and plastic products (by 7.1%), Fabricated metal products, excluding machinery and equipment (by 5.3%).

In 2023, the largest share in the value of sold production of products had divisions: Food products – 18.1%. Motor vehicles, trailers and semi-trailers – 11.5%. Electrical equipment – 8.1%. Rubber and plastic products – 6.7%. Basic metals – 5.9%, Fabricated metal products – 5.5%, Chemicals and chemical products – 5.3%. The lowest share in the value of sold production had divisions: Metal ores, Leather and related products, Crude petroleum and natural gas, Wearing apparel.

In comparison to 2022 the share in the sold production of products increased the most in divisions Motor vehicles, trailers and semi-trailers (by 2.2 p.p.) and Food products (by 1.5 p.p.) and it fell the most in divisions Crude petroleum and natural gas (by 1.3 p.p.) and Chemicals and chemical products (by 1.3 p.p.).

In comparison to 2019 the most increased the share of divisions Electrical equipment (by 2.2 p.p.), Food products (by 1.4 p.p.), and Hard coal and lignite (by 0.4 p.p.). The largest decline in share was recorded for divisions: Furniture (by 0.7 p.p.), Chemicals and chemical products (by 0.5 p.p.) and Tobacco products (by 0.4 p.p.).

Chart 3. Structure of value of sold production of products by PKWiU divisions in 2023 and its change (previous year=100)



The division with the highest share in the value of total sold production of products in 2023 was Food products, in which the largest share in sales was held by Preserved meat and meat products (31.3%). The next two groups with the largest share in the sold production of this division were Other food products (16.3%) and Dairy products (14.7%). The smallest share in sales was recorded for Vegetable and animal oils and fats (3.3%). Other dominant division in terms of the value of sold production was the division Motor vehicles, trailers and semi-trailers, in which the largest share had groups Parts and accessories for motor vehicle (51.4%) and Motor vehicles, excluding motorcycles (43.4%), while the smallest share in this division had group Bodies (coachwork) for motor vehicles, trailers and semi-trailers – 5.3%.

Table 2. Groups with the largest share in value of sold production of products by PKWiU divisions in 2023

Specification – Divisions	Specification – Groups	Share of group in division in %
Hard coal and lignite	Hard coal	97.3
Other products of mining and quarrying	Stone, sand and clay	86.5
Food products	Preserved meat and meat products	31.3
Beverages	Beverages	100.0
Tobacco products	Tobacco products	100.0
Textiles	Other textiles	86.6
Wearing apparel	Wearing apparel except fur apparel	87.3
Leather and related products	Footwear	51.7
Wood and products of wood, cork and straw	Products of wood, cork, straw and plaiting materials	85.2
Paper and paper products	Articles of paper and paperboard	72.7
Printing services and reproduction services of recorded media	Printing services and services related to printing	100.0
Chemicals and chemical products	Basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms	53.8
Pharmaceutical products and preparations	Pharmaceutical preparations	93.4
Rubber and plastic products	Plastics products	78.9
Other non-metallic mineral products	Products of concrete, cement and plaster	30.3
Basic metals	Basic precious and other non-ferrous metals structural metal products	46.3
Fabricated metal products	Structural metal products	37.9
Computers, electronic and optical products	Consumer electronics	51.0
Electrical equipment	Batteries and accumulators	36.5
Machinery and equipment	Other general-purpose machinery	33.7
Motor vehicles, trailers and semi-trailers	Parts and accessories for motor vehicles	51.4
Other transport equipment	Railway locomotives and rolling stock	37.2
Furniture	Furniture	100.0
Other manufactured goods	Medical and dental instruments and supplies	40.9

Among most divisions covered by the survey of industrial products, one group of products clearly dominated in the division, e.g. in the division Pharmaceutical products and medicines the group Pharmaceutical preparations with a share of 93.4% of the value of sold production, or in the division Rubber and plastic products – Plastic products (share of 78.9% in the value of sold production). However, there were divisions in which the share of the main group of products in the value of sold production did not exceed 40.0%. These divisions included a wide range of products and product groups, diversified in terms of purpose, degree of processing and technological advancement, materials and raw materials used for production. In 2023, these included among others: Railway locomotives and rolling stock (share of 37.2% in the division Other transport equipment), Batteries and accumulators (share of 36.5% in the division Electrical equipment), Other general-purpose machines (share of 33.7% in the division Machinery and equipment) or Products made of concrete, cement and plaster (share of 30.3% in the division Other non-metallic mineral products).

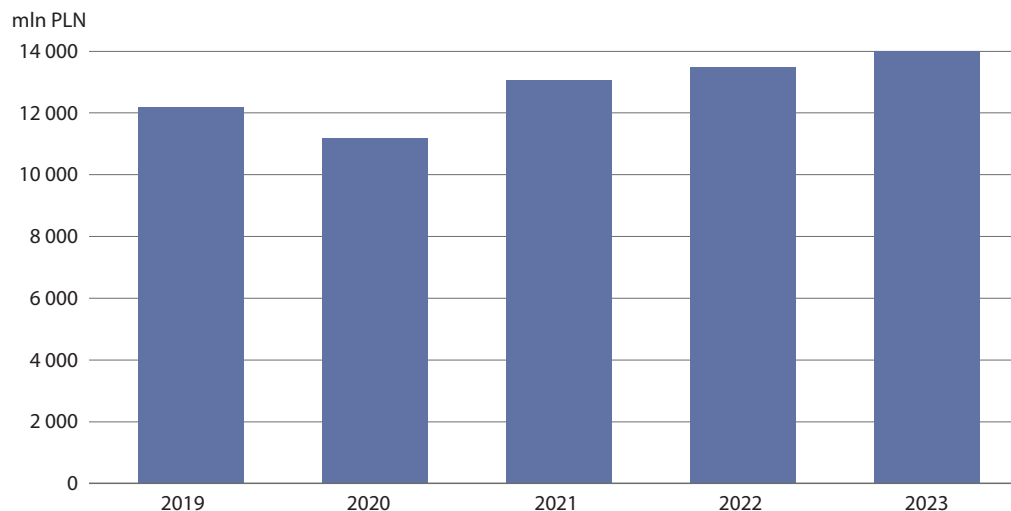
1.2. Production under sub-contracted operations

Production under sub-contracted operations is the production of products made under a contract between the principal and the contractor from material entrusted by the principal, where the value of the entrusted materials must exceed 80% of the value of the materials used in the production. The principal also provides, in whole or in part, technical specifications, samples, cut-outs, recipes. The principal sells the sub-contracted manufactured product as a final product or incorporated into its other products and assumes full after-sales responsibility for the manufactured product.

The majority of industrial products are produced by entities of the national economy under own-account production, which means that the producer carries out the entire production process himself from raw materials and materials purchased by himself. Some products, in addition to own-account production, are also produced under sub-contracting, which means that the national economy entity producing the product is not the actual owner of the product and the production process carried out by it is carried out with a significant share of materials entrusted by the principal and according to the technical specifications provided. Production under sub-contracted operations may take place for a number of reasons, e.g. the principal does not have sufficient capacity to fulfil the contract acquired, does not have suitable machinery at its disposal, the process of manufacturing the product on its own is not cost-effective as it requires too much investment or additional production conditions.

Production under sub-contracted operations amounted to 14,202.8 million PLN in 2023, and increased by 4.8% compared to 2022, when it was recorded at its highest level in the entire period under review. The increase in production under sub-contracted operations at the national level was mainly influenced by increases in the divisions: Electrical equipment (by 90.5%), Computers, electronic and optical products (by 35.0%), Machinery and equipment (by 25.5%), Motor vehicles, trailers and semi-trailers (by 20.1%), Chemicals and chemical products (by 18.8%).

Chart 4. Sold production under sub-contracted operations



In 2023, the largest share of the value of production under sub-contracting was recorded for the Food and Tobacco industry (38.1%), comprising the Food, Beverages and Tobacco Products divisions, as well as the Basic metals and Fabricated metal products divisions (11.5% in total) and Motor vehicles, trailers and semi-trailers (10.1%). The marginal importance of production under sub-contracted operations was recorded in the divisions: Pharmaceutical products and preparations and Furniture.

Table 3. Sold production under sub-contracted operations

Specification	2023	
	thousand PLN	in %
Manufactured products	14 202 755.3	100.0
of which:		
Food products, Beverages, Tobacco products	5 411 171.0	38.1
Textiles	587 316.0	4.1
Wearing apparel, Leather and related products	699 164.7	5.0
Wood and products of wood, cork and straw, Paper and paper products	465 675.0	3.2
Printing services and reproduction services of recorded media	384 624.5	2.7
Chemicals and chemical products	1 400 190.6	9.9
Pharmaceutical products and preparations	29 934.1	0.2
Rubber and plastic products	202 464.0	1.4
Basic metals, Fabricated metal products	1 632 307.1	11.5
Computers, electronic and optical products	414 689.4	2.9
Electrical equipment	809 621.1	5.7
Machinery and equipment	168 682.3	1.2
Motor vehicles, trailers and semi-trailers	1 436 473.6	10.1
Other transport equipment	117 754.5	0.8
Furniture	84 251.7	0.6
Other manufactured goods	174 941.9	1.2

Production under sub-contracted operations plays a large role in divisions that do not record a high value of sold production. These are divisions that include relatively low-cost industrial products, their manufacturing costs are not high and production does not require high investment.

In the division Wearing apparel, as many as 81 products or product assortment groups, out of the 142 covered by the survey, were reported to be manufactured to order from outsourced material in addition to own-account production (57%). In the division Printing services and reproduction services of recorded media, this was 40%, and in the division Furniture it was 44%. Although as many as 90 under sub-contracted products were reported in the division Food products, they accounted for only 18% of all food products under observation.

Table 4. Production of selected wearing apparel

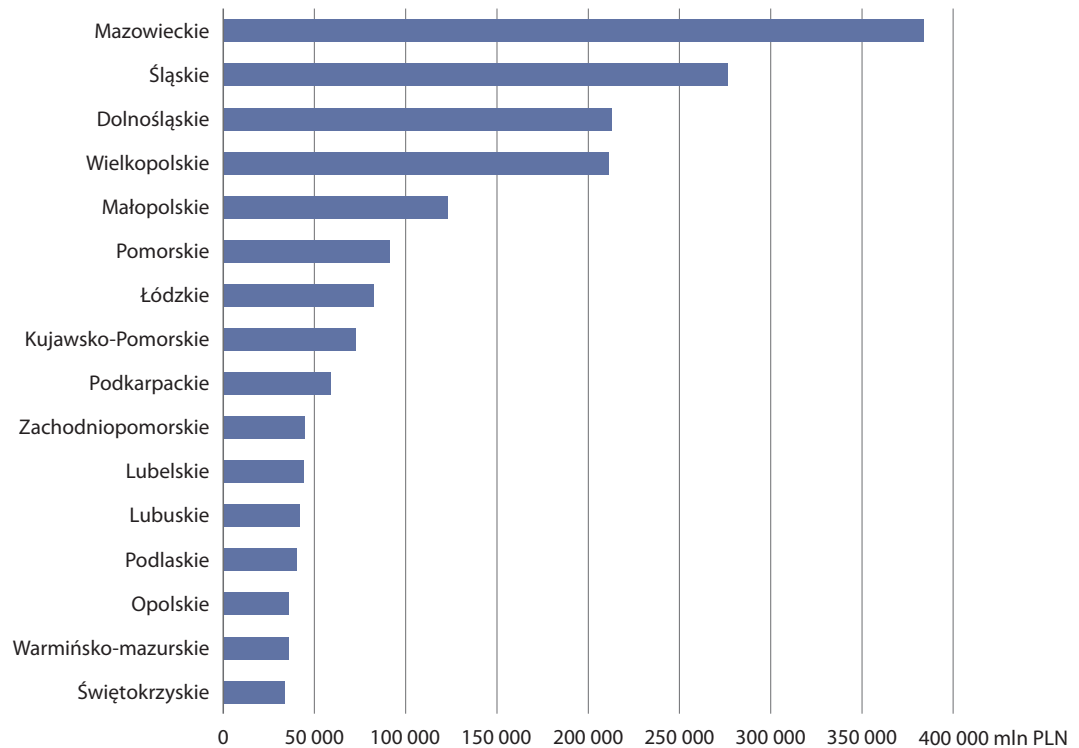
Specification	Unit	Manufactured production	Sold production	
			on own account	under sub-contracted operations
Men's or boys' ensembles, of cotton or man-made fibres, for industrial and occupational wear	unit	2 556 561	2 258 469	302 413
Men's or boys' trousers and breeches, of cotton or man-made fibres, for industrial or occupational	unit	1 062 268	904 757	150 981
Men's or boys' overcoats, car-coats, capes, cloaks and similar articles, of knitted or crocheted textiles (excluding jackets and blazers, anoraks, wind-cheaters and windjackets)	unit	368 965	149 653	218 241
Women's or girls' jackets and blazers (excluding knitted or crocheted)	unit	819 149	568 223	348 325
Women's or girls' dresses (excluding knitted or crocheted)	unit	965 205	696 211	352 105
Women's or girls' skirts and divided skirts (excluding knitted or crocheted)	unit	192 550	134 453	96 152
Women's or girls' trousers and breeches, of cotton (excluding denim, for industrial or occupational wear)	unit	563 056	336 815	244 193
Men's or boys' shirts, knitted or crocheted	unit	957 671	417 670	532 698
Women's or girls' blouses, shirts and shirt-blouses (excluding knitted or crocheted)	unit	908 470	438 321	500 547

1.3. Sold production of products by voivodship

In 2023, the highest value of sold production of products, similarly to previous years, was recorded in Mazowieckie Voivodship – 383,748.8 million PLN, which constituted a 21.4% share in the national value of sold production of products. Such a large share results from the fact that it is the seat of the management boards of many manufacturers of product operating in Poland¹. The second Voivodship with a significant share was Śląskie Voivodship – 276,693.7 million PLN (15.5% of the total value), followed by Dolnośląskie Voivodship – 212,923 million PLN (11.9%), Wielkopolskie Voivodship – 211,073.4 million PLN (11.8%) and Małopolskie Voivodship – 122,975.9 million PLN (6.9%). The lowest value of sold production was recorded for Świętokrzyskie Voivodship – 33,663.5 million PLN.

In 2019–2023, the share of most voivodships in the value of sold production of industrial products changed slightly or remained at a similar level. In 2023, compared to 2022, the largest change in the share in the value of sold production was recorded for Dolnośląskie Voivodship (an increase of 1.1 p.p., the share was 11.9%) and Mazowieckie Voivodship (a decrease of 1.8 p.p. the share was 21.4%). In 2023, for six voivodships there was a decrease in the share in the value of sold production, while for seven voivodships was recorded an increase. In Lublin Voivodship, Opole Voivodship and Podlaskie Voivodship, the share in the value of sold production remained at the same level as in the previous year. Compared to 2019, the largest increase in the share was recorded in Dolnośląskie Voivodship, by 2.6 p.p. and Mazowieckie Voivodship, by 1.0 p.p. The shares of Podkarpackie, Łódzkie and Kujawsko-Pomorskie Voivodships remained unchanged (3.3%, 4.6% and 4.1% respectively). For the remaining voivodships, a decrease in the share of the value of sold production was recorded, the largest in Pomorskie Voivodship, (by 1.2 p.p.), and in Wielkopolskie Voivodship, (by 0.8 p.p.).

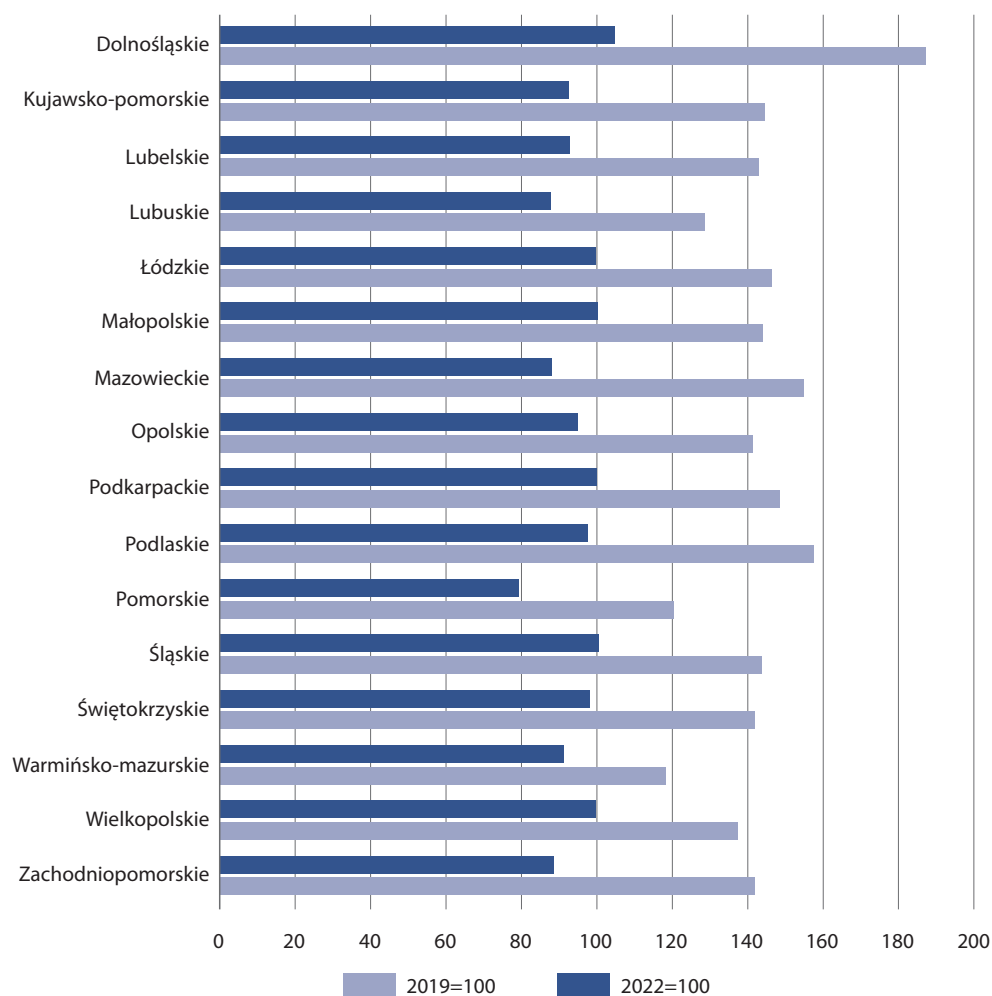
¹ Data are collected and presented according to the subject method, i.e. according to the company's headquarters.

Chart 5. Share of voivodship in sold production of industrial products in 2023**Table 5. Share of voivodship in sold production of industrial products in 2023**

Voivodship	2019	2020	2021	2022	2023
	in %				
Dolnośląskie	9.3	10.4	11.2	10.8	11.9
Kujawsko-pomorskie	4.1	4.4	4.1	4.2	4.1
Lubelskie	2.6	2.6	2.6	2.5	2.5
Lubuskie	2.7	2.7	2.7	2.5	2.3
Łódzkie	4.6	4.7	4.6	4.4	4.6
Małopolskie	7.0	6.7	6.8	6.5	6.9
Mazowieckie	20.4	20.6	20.7	23.2	21.4
Opolskie	2.1	2.1	2.1	2.0	2.0
Podkarpackie	3.3	3.2	3.3	3.1	3.3
Podlaskie	2.1	2.3	2.2	2.2	2.2
Pomorskie	6.3	6.0	6.2	6.1	5.1
Śląskie	15.8	14.5	14.8	14.6	15.5
Świętokrzyskie	2.0	2.0	1.9	1.8	1.9
Warmińsko-mazurskie	2.5	2.1	2.1	2.1	2.0
Wielkopolskie	12.6	12.8	12.1	11.3	11.8
Zachodniopomorskie	2.6	2.9	2.6	2.7	2.5

In 2023, enterprises from Mazowieckie Voivodship had the largest share in the value of production sold at the level of Poland in the following divisions: Computers, electronic and optical products; Pharmaceutical products and preparations; Printing services and reproduction services of recorded media; Food products; Chemicals and chemical products; Machinery and equipment. Śląskie Voivodship had a leading role in the production of the following divisions: Hard coal and brown coal (lignite); Basic metals; Motor vehicles, trailers and semi-trailers; Other non-metallic mineral products; Rubber and plastic products; Finished metal products. In Dolnośląskie Voivodship, the largest share in the value of total sold production was recorded in the divisions: Electrical equipment and Leather and leather products. The Wielkopolskie Voivodship had the largest share in the value of sold production of products in the following divisions: Furniture; Beverages; Textiles; Other products; Małopolskie Voivodship – Tobacco products; Kujawsko-Pomorskie Voivodship – Paper and paper products; Łódzkie Voivodship – Wearing apparel; Podkarpackie Voivodship – Other transport equipment; Świętokrzyskie Voivodship – Other products of mining and quarrying; Zachodniopomorskie Voivodship – Wood and products of wood, cork and straw.

Chart 6. Dynamics of sold production of products by voivodship in 2023 (2019=100; 2022=100)



Dynamics calculated on the basis of value of sold production.

In 2023, compared to 2019, an increase in the value of sold production was recorded in all voivodships. The largest increase in sold production was recorded in the following voivodships: Dolnośląskie (by 87.2%), Podlaskie (by 57.6%), Mazowieckie (by 54.8%), Podkarpackie (by 48.6%), Łódzkie (by 46.3%), Kujawsko-Pomorskie (by 44.5%). Compared to 2022, an increase in the value of production sold was recorded in the Dolnośląskie Voivodship (4.6%), Śląskie Voivodship (0.6%) and Małopolskie Voivodship (0.3%), in the remaining Voivodships there was a decrease in the value of sold production – the largest decrease was recorded in the Pomorskie Voivodship (by 20.6%), Lubuskie (by 12.3%), Mazowieckie (by 12.0%) and Zachodniopomorskie Voivodship (by 11.4%).

1.4. Sold production of industrial products by size class of entities

The survey on the production of industrial products involves economic entities employing 10 or more persons employed, whose activity results in production of industrial products classified in two sections: Products of mining and quarrying and Manufactured products. In 2019–2023, the share of the value of sold production of products reported by enterprises employing 50 or more persons (large entities) in the total value increased from 93.5% to 94.5%. In 2023, the value of sold production of products in total by large enterprises amounted to 1,687,851.3 million PLN, while for enterprises employing 10–49 persons it was 98,406.9 million PLN. In 2020, both in the Products of mining and quarrying and Manufactured products sections, declines in production were recorded in both size classes of entities, caused by production downtimes caused by the Covid-19 pandemic. In 2021 and 2022, in both size classes of the analysed sections, production increased compared to the previous year, but in 2023, for entities employing 50 or more people, there was another decline in sold production in both sections. In the case of entities employing 10–49 people, production fell in the Manufactured products section, while it increased slightly in the Products of mining and quarrying section.

Table 6. Sold production of products by size class of entities

Specification	2019	2020	2021	2022	2023
	in million PLN				
TOTAL					
entities with 50 and more persons employed	1 136 504.3	1 093 305.7	1 352 707.1	1 781 383.0	1 687 851.3
entities with 10–49 persons employed	79 124.9	73 962.1	85 157.3	101 508.5	98 406.9
PRODUCTS OF MINING AND QUARRYING					
entities with 50 and more persons employed	33 362.3	27 615.3	37 062.1	72 751.1	51 275.6
entities with 10–49 persons employed	1 164.8	1 046.2	1 151.5	1 341.2	1 371.4
MANUFACTURED PRODUCTS					
entities with 50 and more persons employed	1 103 142.0	1 065 690.4	1 315 645.0	1 708 632.0	1 636 575.7
entities with 10–49 persons employed	77 960.1	72 916.0	84 005.8	100 167.3	97 035.5

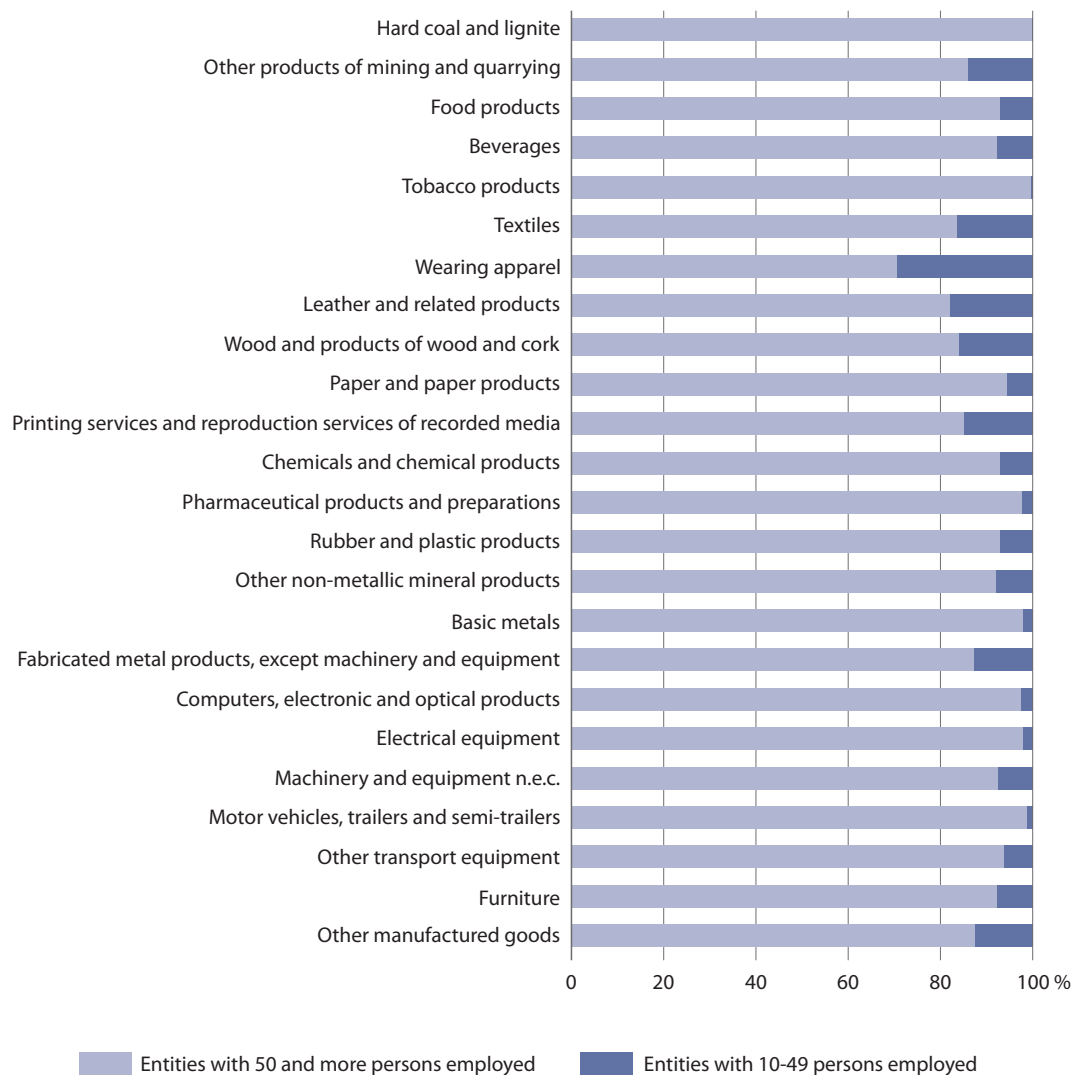
In 2023, the largest share of production of enterprises employing 50 or more people was recorded in the following divisions: Hard coal and lignite (99.9%), Tobacco products (99.7%), Motor vehicles, trailers and semi-trailers (98.8%), Basic metals (98.0%). The largest share of medium-sized entities employing 10 to 49 persons in 2023 was recorded in the following divisions: Wearing apparel (29.5%), Leather and related products (17.9%), Textiles (16.4%), Wood and products of wood, cork and straw (15.9%), Printing services and reproduction services of recorded media (14.8%), Other products of mining and quarrying (13.9%), Fabricated metal products (12.6%), Other manufactured goods (12.4%).

Table 7. Share of entities with 50 and more persons employed in value of sold production of products by PKWiU divisions

Specification	2019	2020	2021	2022	2023
	in %				
Total	93.5	93.7	94.1	94.6	94.5
Hard coal and lignite	99.9	99.7	99.8	99.8	99.9
Other products of mining and quarrying	83.5	85.0	85.1	85.7	86.1
Food products	91.0	91.2	92.3	92.7	92.9
Beverages	93.5	93.5	93.4	92.8	92.4
Tobacco products	99.8	99.8	99.9	99.9	99.7
Textiles	84.7	82.1	85.5	84.0	83.6
Wearing apparel	71.4	69.0	84.0	71.5	70.5
Leather and related products	83.6	85.6	83.3	84.3	82.1
Wood and products of wood, cork and straw	83.4	84.4	84.7	84.7	84.1
Paper and paper products	93.4	94.5	83.3	95.1	94.5
Printing services and reproduction services of recorded media	81.9	83.2	83.3	84.8	85.2
Chemicals and chemical products	92.8	92.7	92.5	93.1	93.0
Pharmaceutical products and preparations	98.2	98.4	98.1	97.5	97.8
Rubber and plastic products	91.8	92.1	92.3	92.5	92.9
Other non-metallic mineral products	91.2	91.5	91.7	92.0	92.0
Basic metals	96.5	97.1	97.3	97.9	98.0
Fabricated metal products	85.9	87.5	87.1	88.4	87.4
Computers, electronic and optical products	96.9	97.6	98.0	97.9	97.5
Electrical equipment	97.0	97.6	97.7	97.9	97.9
Machinery and equipment	91.0	91.8	92.1	92.4	92.5
Motor vehicles, trailers and semi-trailers	98.8	98.8	98.6	98.8	98.8
Other transport equipment	92.6	92.3	92.9	93.0	93.8
Furniture	91.6	92.3	92.2	92.2	92.3
Other manufactured goods	87.0	88.8	89.5	88.1	87.6

In 2023, compared to 2022, a decrease in the share of entities employing 50 or more persons in the value of sold production of products was recorded for the following divisions: Leather and related products (by 2.2 p.p.), Wearing apparel (by 1.0 p.p.), Fabricated metal products (by 1.0 p.p.), Wood and products of wood, cork and straw (by 0.6 p.p.). In 10 divisions, a slight increase in the share of sold production of entities employing 50 or more persons was recorded, including Other transport equipment (by 0.8 p.p.), Other products of mining and quarrying (by 0.4 p.p.), Printing services and reproduction services of recorded media (by 0.4 p.p.), Rubber and plastic products (by 0.4 p.p.).

Compared to 2019, the share of large entities in the production of goods sold decreased in 6 divisions, including the Leather and related products (by 1.5 p.p.). Throughout the entire period under analysis, the largest increase in the share of entities with 50 or more persons employed was recorded in the following divisions: Printing services and reproduction services of recorded media (by 3.3 p.p.), Other products of mining and quarrying (by 2.6 p.p.), Food products (by 1.9 p.p.), Basic metals (by 1.5 p.p.), Machinery and equipment (by 1.5 p.p.).

Chart 7. Sold production by size classes and PKWiU divisions in 2023

1.5. Sold production of industrial products by kind of activity of entities producing products

Industrial entities are economic entities whose predominant activity according to the Polish Classification of Activities (PKD) is classified into the following sections: Mining and quarrying, Manufacturing, Electricity, gas, steam, hot water and air conditioning manufacturing and supply; Water supply; sewerage, waste management and remediation activities.

Non-industrial entities are economic entities whose predominant activity according to the Polish Classification of Activities (PKD) is classified into sections other than: Mining and quarrying, Manufacturing, Electricity, gas, steam, hot water and air conditioning manufacturing and supply; Water supply; sewerage, waste management and remediation activities.

Industrial products classified in the PKWiU sections Mining and quarrying and Manufactured products are mainly produced by industrial entities. In 2019–2023, the value of sold production of products increased by 47.5% in the case of industrial entities and by 31.7% in the case of non-industrial entities. Whereas, in 2023, the sold production of products decreased compared to 2022, both in industrial entities (by 5.2%) and non-industrial entities (by 3.5%). In 2023, the share of industrial entities in sold production of products was 96.6%.

Table 8. Sold production of products by predominant activity of entities

Specification	2019	2020	2021	2022	2023
	in thousand PLN				
TOTAL					
Industrial entities	1 169 322 738.8	1 119 243 450.8	1 377 579 043.6	1 819 695 200.0	1 725 290 559.2
Non-industrial entities	46 306 504.8	48 024 369.9	60 285 386.7	63 204 562.9	60 967 568.9
PRODUCTS OF MINING AND QUARRYING					
Industrial entities	34 258 717.0	28 431 197.6	37 951 379.2	73 885 358.1	52 425 756.3
Non-industrial entities	268 380.1	230 287.4	262 215.7	206 890.1	221 168.4
MANUFACTURED PRODUCTS					
Industrial entities	1 135 064 021.8	1 090 812 253.2	1 339 627 664.4	1 745 809 841.9	1 672 864 802.9
Non-industrial entities	46 038 124.7	47 794 082.5	60 023 171.0	62 997 672.8	60 746 400.5

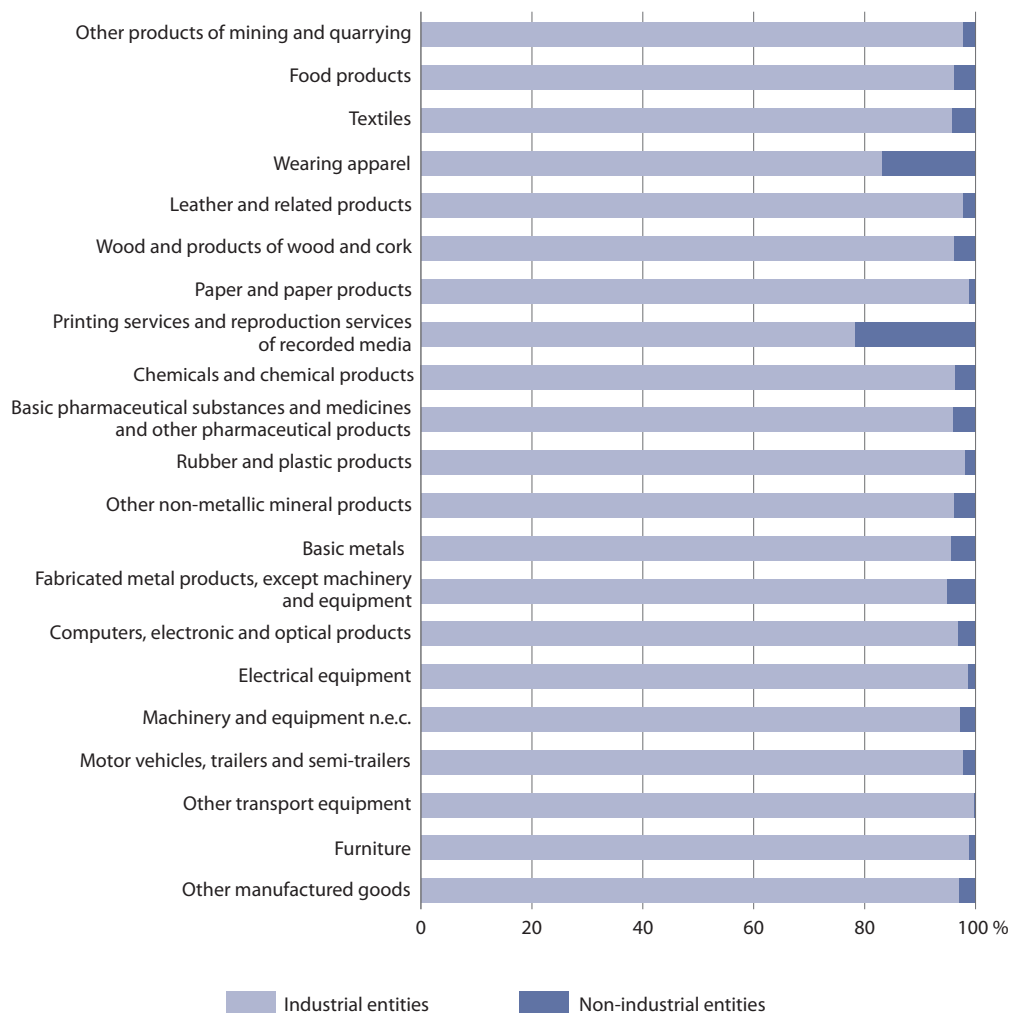
In 2023, the value of sold production of products manufactured by non-industrial entities was 60,967.6 million PLN, of which 96.7% sold production was reported by entities whose activities were classified in five sections: Wholesale and retail trade (section G), Construction (section F), Agriculture, forestry, hunting and fishing (section A), Information and communication (section J) and Professional, scientific and technical activities (section M).

Over 76% of sold production was reported by entities whose activities were classified in the Wholesale and retail trade section. Entities belonging to this section generated the highest income from the sale of products, among others in the following sections PKWiU: Tobacco products, Food products and Motor vehicles, trailers and semi-trailers, while entities from the Construction section, among others in the following divisions: Other non-metallic mineral products, Fabricated metal products and Wood and products of wood and cork; articles of straw and plaiting materials. The remaining 3.3% of sold production of non-industrial entities was mainly from the following sections: Accommodation and food service activities (section I), Transportation and storage (section H), Administrative services and support service activities (section N), Other service activities (section S). Real estate activities (section L), Human health and social work activities (section Q), whose share ranged from 0.1% to 1.3%.

Table 9. Sold production of industrial products by predominant kind of activity of non-industrial entities

PKD Sections	2023	
	in million PLN	in percent
Non-industrial entities	60 967.6	100.0
of which entities classified to sections:		
Wholesale and retail trade	46 414.4	76.1
Construction	6 280.6	10.3
Agriculture, forestry, hunting and fishing	2 720.9	4.5
Information and communication services	2 268.3	3.7
Professional, scientific and technical activities	1 252.0	2.1

In 2023, the largest share of non-industrial entities in the sold production of products was recorded for the following divisions: Printing services and reproduction services of recorded media (21.8%), Wearing apparel (16.9%), Fabricated metal products (5.2%), Basic metals (4.5%) and Textiles (4.3%).

Chart 8. Share of industrial and non-industrial entities in the value of sold production of industrial 333 products by selected PKWiU divisions in 2023

The highest consistency of declared predominant activity of entities with the production of industrial products resulting from this activity was observed for the following divisions: Hard coal and lignite, Coke and refined petroleum products, Food products, Pharmaceutical products and preparations, Basic metals, Other transport equipment, Leather and related products – in those divisions. more than 90% of sold production of industrial products was reported by units with a predominant activity in which the production of these products was classified. The lowest correspondence between the manufactured products and the type of predominant activity of entities was observed for the Crude oil division. A detailed list of share in value of sold production of industrial products in PKWiU divisions by the most common predominant activity of entities in 2023 can be found in Annex 1.

1.6. Sold production of major industrial products

In 2023, as in previous years, diesel oils took the leading place in the group with the largest share in the value of total sold production of products. The second place was taken by lithium-ion batteries and the third place by parts and accessories for motor vehicles.

In 2023, there were no changes in the first four places in the ranking of products with the highest value of sold production compared to 2022. In 2023, three products entered the top ten: diesel engines for vehicles, fresh or chilled cuts of Gallus Domesticus (domestic chicken) and cigarettes of tobacco or mixtures of tobacco and tobacco substitutes. Compared to 2022, from the ranking of products with the highest value of sold production dropped out natural gas, coking coal, marine and waterway structures and other structures and their parts made of cast iron or steel.

Chart 9. Top 10 industrial products by value of sold production

Specification	2023		2022		2019
Diesel fuels	1	↔	1	↔	1
Lithium-ion batteries	2	↔	2	↑	-
Parts and accessories for motor vehicles, other	3	↔	3	↓	2
Motor gasoline	4	↔	4	↑	3
Thermal coal	5	↑	7	↑	6
Diesel trucks with a total weight of up to 5 tonnes	6	↑	10	↑	9
Diesel engines for motor vehicles	7	↑	-	-	-
Fresh or chilled cuts of fowls of the species Gallus Domesticus	8	↑	-	-	-
Cigarettes of tobacco or tobacco mixtures with its substitutes	9	↑	-	-	4
TV Sets	10	↓	4	↑	7

Change from the previous year



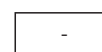
no change



increase



decrease



product outside the top 10

Table 10. Sold production of industrial products with the largest share in PKWiU divisions (in thousand PLN)

PKWiU Division	Products	2023
Hard coal and lignite	Hard coal	.
Crude petroleum and natural gas	Natural gas	.
Metal ores	Lead, zinc and tin ores and concentrates	.
Other products of mining and quarrying	Crushed stone used for construction purposes	3 285 035.7
Food products	Prepared feeds for farm animals	.
Beverages	Beer	13 098 278.6
Tobacco products	Cigarettes	16 559 527.2
Textiles	Furnishing articles including furniture and cushion covers as well as cushion covers, etc. for car seats	1 177 693.0
Wearing apparel	Men's or boys' ensembles, of cotton or man-made fibres, for industrial and occupational wear	780 756.7
Leather and related products	Articles of leather or composition leather for technical purposes	.
Wood and products of wood. cork. straw	Particle board of wood	5 301 223.7
Paper and paper products	Cartons. boxes and cases of paper and corrugated paperboard	14 122 463.3
Printing services and reproduction services of recorded media	Printed books. brochures. leaflets and similar printed matter, in single sheets	2 988 130.8
Coke. briquette and refined petroleum products	Diesel oils	.
Chemicals and chemical products	Biodiesel and mixtures thereof	5 582 507.2
Pharmaceutical products and preparations	Medicaments, containing alkaloids or derivatives thereof, but not hormones or antibiotics	9 141 177.9
Rubber and plastic products	Doors, windows. frames and thresholds for doors, shutters, blinds and similar articles, of plastics	14 402 829.4
Other non-metallic mineral products	Ready-mixed concrete	7 314 320.1
Basic metals	Unwrought unalloyed refined copper (excluding rolled, extruded or forged sintered products)	.
Fabricated metal products	Weirs, sluices, and other maritime and waterway structures, of iron or steel, structures and parts of structures of iron or steel, n.e.c.	14 743 712.4
Computers. electronic and optical products	TV receivers	15 884 645.5
Electrical equipment	Nickel-cadmium, nickel metal hydride, lithium-ion, lithium polymer, nickel-iron and other electric accumulators	.
Machinery and equipment	Parts for spark-ignition engines, n.e.c	3 706 726.7
Motor vehicles. trailers and semi-trailers	Parts and accessories n.e.c., for motor vehicles	39 583 214.7
Other transport equipment	Self-propelled railway or tramway coaches, vans and trucks	6 415 330.6
Furniture	Upholstered seats with wooden frames	10 550 396.9
Other manufactured goods	Candles, tapers and the like	3 950 265.9

1.7. Sold production of products with embedded systems

An embedded system is a digital equipment composed of a processor, memory and input-output systems (microcontroller), intended for real-time control of the product of which it is a part. Personal computers, portable computers, tablets, phones and smartphones and other ICT network devices are not considered products containing embedded systems.

Element of the Internet of Things is a product with an embedded system with the ability to connect to the Internet.

An entity with foreign capital is an entity in which the share of foreign capital in the share capital is 100%.

An entity with a predominant share of foreign capital is an entity in which the share of foreign capital in the share capital is 50.0%–99.9%.

Embedded systems are defined as special-purpose computer systems that become an integral part of the equipment they support. Currently, embedded systems are used in virtually all areas of life and are used in many everyday objects, including:

- consumer electronics and household appliances, e.g. washing machines, refrigerators, dishwashers,
- cars, e.g. in reversing or navigation sensors,
- medical equipment, e.g. for monitoring vital signs.

The Internet of Things (IoT) is a digital network created by interconnected objects and at the same time a network connecting to the physical world. Year by year, the number of devices connected to the network is growing dynamically and their use is becoming more and more common.

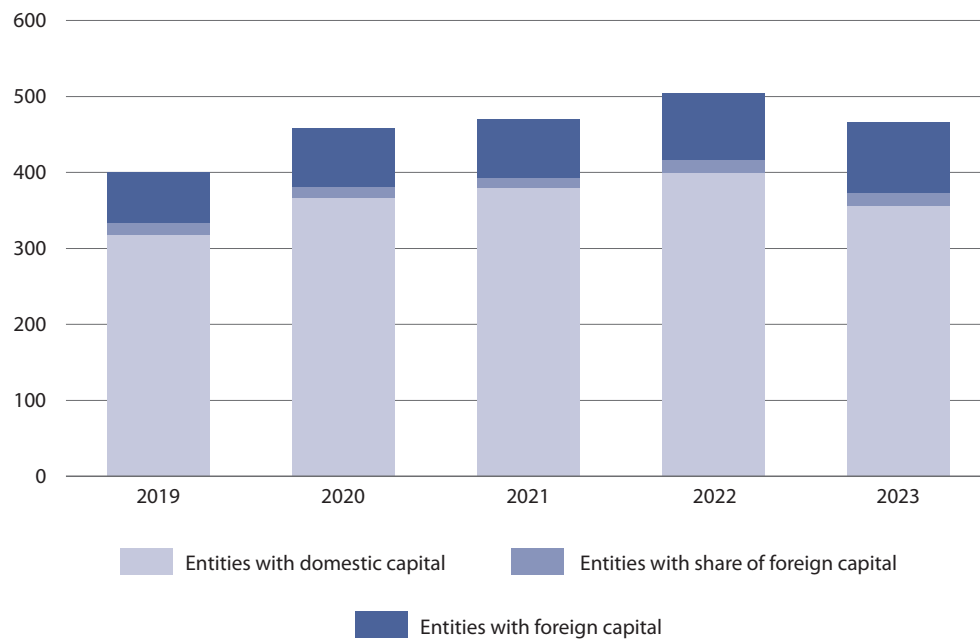
1.7.1. Structure of entities reporting data on products with embedded systems

The number of entities declaring the production of products with embedded systems systematically increased in the period 2019–2022. In 2023, the number of economic entities reporting the production of products with embedded systems decreased and amounted to 466, of which 35.6% were entities producing products with elements of IoT.

Table 11. Number of entities producing products with embedded systems

Year	Capital of entity	Entities producing products with embedded systems	
			with IoT
2023	Total	466	166
	with domestic capital	356	126
	with share of foreign capital	17	9
	with foreign capital	93	31
2022	Total	505	210
	with domestic capital	399	163
	with share of foreign capital	18	11
	with foreign capital	88	36
2021	Total	470	205
	with domestic capital	380	159
	with share of foreign capital	13	8
	with foreign capital	77	38
2020	Total	458	196
	with domestic capital	367	156
	with share of foreign capital	14	8
	with foreign capital	77	32
2019	Total	400	158
	with domestic capital	318	123
	with share of foreign capital	16	8
	with foreign capital	66	27

The vast majority of entities reporting the production of products with embedded systems were entities with domestic capital, and their share in the analyzed period ranged from 76.4% to 80.9%. In 2023, compared to 2022, the share of entities with domestic capital decreased by 2.6 p.p for entities with foreign capital (an increase of 2.6 p.p). The share of entities with foreign capital remained at the same level. In 2023, entities producing products with elements of IoT accounted for 35.6% of all entities declaring the production of products with embedded systems. Their share decreased by 6.0 p.p compared to the previous year, and by 3.9 p.p. compared to 2019.

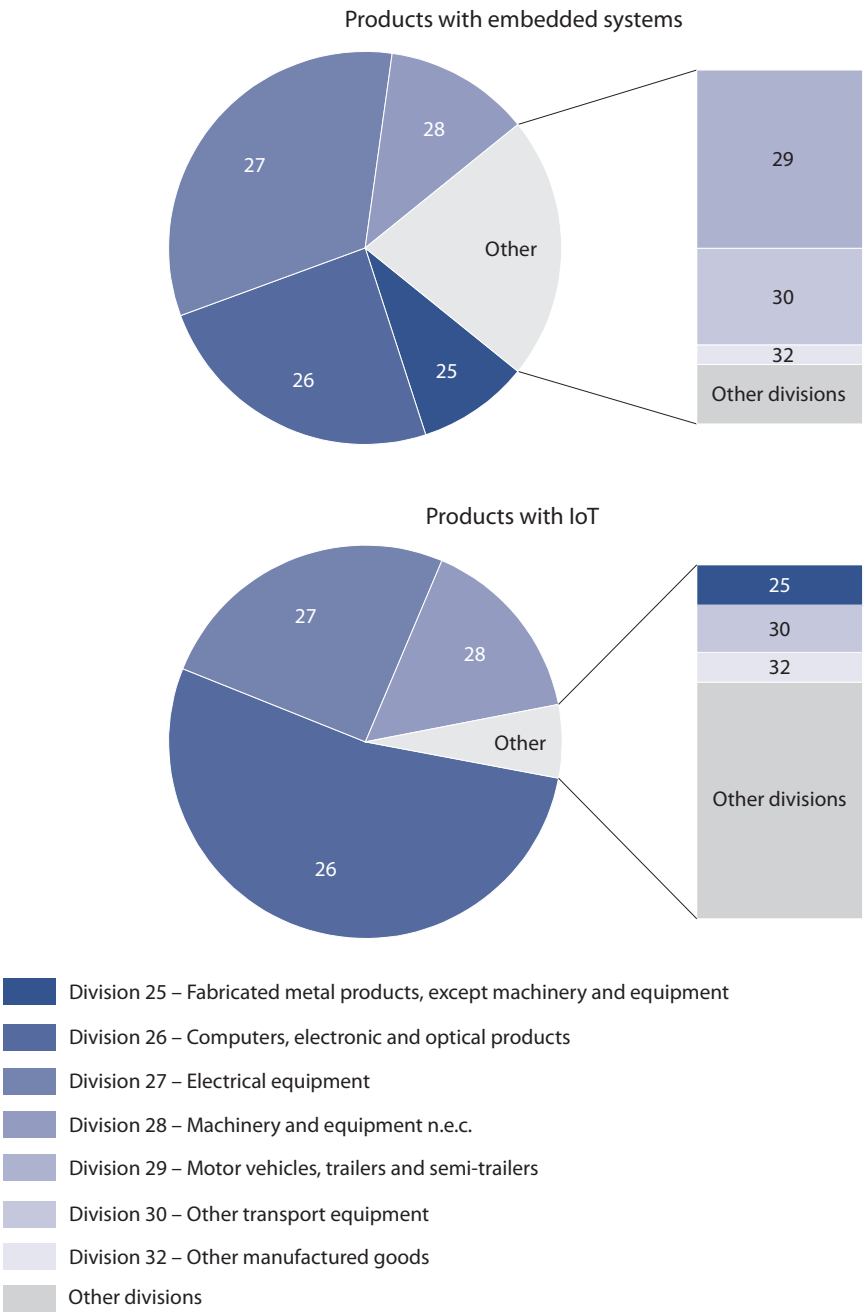
Chart 10. Number of entities declaring sold production of products with embedded systems by origin of capital

Products with embedded systems were produced mainly by entities conducting business activities classified according to the Polish Classification of Activities (PKD 2007) into the following divisions:

- division 25 Manufacture of fabricated metal products, except machinery and equipment,
- division 26 Manufacture of computer, electronic and optical products,
- division 27 Manufacture of electrical equipment,
- division 28 Manufacture of machinery and equipment not elsewhere classified,
- division 29 Manufacture of motor vehicles, trailers and semi-trailers excluding motorcycles,
- division 30 Manufacture of other transport equipment,
- division 32 Other manufacturing.

Among the entities producing products with embedded systems, the majority were entities whose predominant kind of activity was classified in division 27 Manufacture of electrical equipment – 32.8% and in division 26 Manufacture of computer, electronic and optical products – 24.4%, and in the case of entities producing IoT products – in division 26 Manufacture of computer, electronic and optical products (53.1%).

Chart 11. Structure of entities producing products with embedded systems and Internet of Things by predominant activity of entities in 2023



1.7.2. Structure of sold production of products with embedded systems

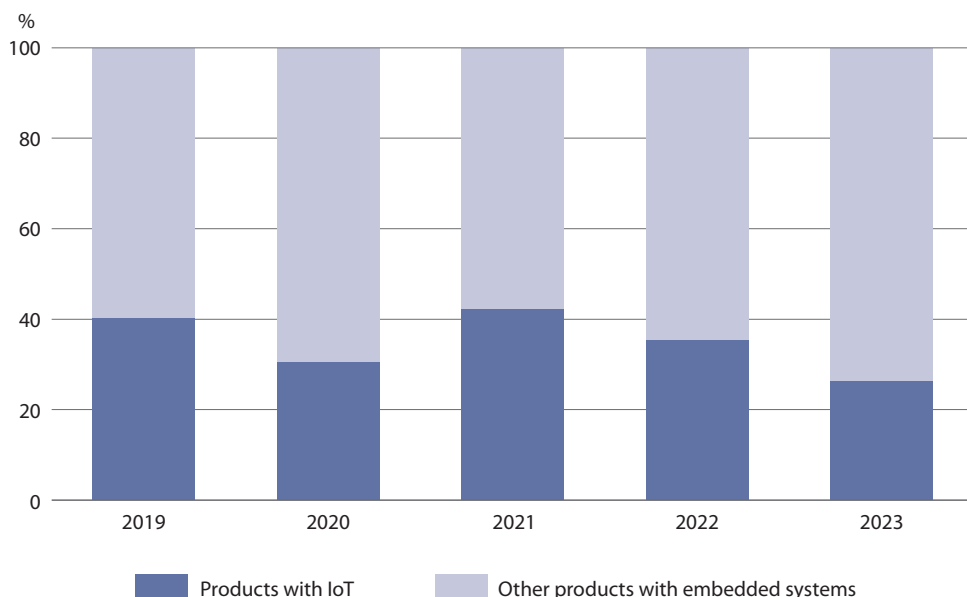
Over the last 5 years, the sold production of products with embedded systems systematically increased. In 2023, the sold production of products with embedded systems amounted to 32,696.1 million PLN. In 2019–2021, there was also a systematic increase in the sold production of products with elements of IoT. From 2022, production began to decline and in 2023 amounted to 8,680.9 million PLN (a 24.3% drop compared to the previous year). The share of products with elements of IoT in the value of sold production of products with embedded systems fell from 40.4% in 2019 to 26.6% in 2023.

Although entities with domestic capital dominated the population of entities producing products with embedded systems, they reported much lower value of sold production than entities with only foreign capital. In 2023, sold production of products with embedded systems, reported by entities with foreign capital, amounted to 19,836.2 million PLN, which constituted 60.7% of total sold production. Sold production of IoT products reported by entities with foreign capital, amounted to 6,374.7 million PLN, which represented 19.5% of total sold production. The share of entities with domestic capital in the production of products with embedded systems decreased from 40.1% to 37.5% in the analyzed period.

Sold production of products with embedded systems reported by entities with a predominant share of foreign capital in analyzed period constituted 1.7% in 2019 and 1.8% in 2023.

Table 12. Sold production of products with embedded system and IoT by origin of the company's capital

Specification	2019	2020	2021	2022	2023
	in thousand PLN				
Products with embedded systems	1 182 654.6	24 051 254.3	30 947 213.8	32 252 735.8	32 696 106.7
entities with domestic capital	4 740 039.5	6 482 861.0	6 722 744.4	9 292 929.9	12 270 465.5
entities with share of foreign capital	196 694.6	252 456.4	233 365.3	477 657.9	589 435.9
entities with foreign capital	6 888 920.5	17 315 936.9	23 991 104.1	22 482 148.0	19 836 205.3
Products with IoT	4 779 650.8	7 392 806.7	13 103 091.1	11 464 820.1	8 680 857.1
entities with domestic capital	1 015 169.8	1 428 349.7	1 808 905.8	2 124 357.7	2 179 332.7
entities with share of foreign capital	23 892.0	112 606.8	41 746.8	107 394.9	126 813.1
entities with foreign capital	3 740 589.0	5 851 850.2	11 252 438.5	9 233 067.5	6 374 711.3

Chart 12. Sold production of products with embedded systems

The sold production of products with embedded systems took place mainly as part of production on own account. In 2023, the value of sold production of products with embedded systems on own account amounted to 31,925.3 million PLN, while the sold production of these products under sub-contracted operations amounted to 770.8 million PLN, which constituted only 2.4% of the total sold production of products with embedded systems. In the case of products with elements of IoT, the value of sold production on own account amounted to 8,522.4 million PLN, while the sold production under sub-contracted operations amounted to 158.5 million PLN, which constituted 0.5% of the total sold production of products with embedded systems. In 2023, the production of products with embedded systems, including products with elements of IoT, was carried out as part of under sub-contracted operations mainly by entities with a predominant kind of activity classified in division 27 Manufacture of electrical equipment.

In the case of production on own account, the largest share in sold production was held by enterprises with a predominant kind of activity classified in division 27 Manufacture of electrical equipment (32.5%) and in division 26 Manufacture of computer, electronic and optical products (24.7%).

Table 13. Sold production of products with embedded system and IoT in 2023 by predominant activity of entity

PKD	Products containing	Sold production in thousand PLN		
		total	on own account	under sub-contracted operations
TOTAL	embedded systems	32 696 106.7	31 925 298.8	770 807.9
	Internet of Things	8 680 857.1	8 522 372.4	158 484.7
division 25	embedded systems	2 997 352.9	2 936 509.6	60 843.3
	Internet of Things	59 091.9	57 125.7	1 966.2
division 26	embedded systems	7 985 321.2	7 877 023.9	108 297.3
	Internet of Things	4 611 496.1	4 584 721.4	26 774.7
division 27	embedded systems	10 723 048.0	10 369 935.8	353 112.2
	Internet of Things	2 192 386.1	2 133 291.1	59 095.0
division 28	embedded systems	3 913 878.2	3 805 678.3	108 199.9
	Internet of Things	1 356 739.5	1 304 479.0	52 260.5
division 29	embedded systems	3 575 372.1	3 575 372.1	–
	Internet of Things	–	–	–
division 30	embedded systems	1 931 893.6	1 931 893.6	–
	Internet of Things	67 641.0	67 641.0	–
division 32	embedded systems	391 650.3	288 159.3	103 491.0
	Internet of Things	42 093.6	42 093.6	–

The highest value of sold production of products with embedded systems in 2023 was recorded for entities with a predominant kind of activity classified in division 27 Production of electrical equipment – 10,723.0 million PLN. Among these entities, the majority were enterprises with foreign capital – 82.1%. On the other hand, the highest value of sold production of products with elements of IoT was recorded for entities with a predominant kind of activity classified in division 26 Production of computer, electronic and optical products – 4,611.5 million PLN. Similarly to products with embedded systems, the producers of products with elements of IoT were entities with foreign capital.

Entities with share of foreign capital, regardless of the kind of activity, had a small share in the production of this type of products or did not report them at all.

Table 14. Sold production of products with embedded system and IoT in 2023 by predominant activity of entity and origin of capital

PKD	Capital of entity	Sold production of products	
		with embedded systems	products with IoT
		in thousand PLN	
TOTAL	total	32 696 106.7	8 680 857.1
	domestic	12 270 465.5	2 179 332.7
	with share of foreign capital	589 435.9	126 813.1
	foreign capital	19 836 205.3	6 374 711.3
division 25	total	2 997 352.9	59 091.9
	domestic	2 464 849.3	57 612.6
	with share of foreign capital	148 232.0	–
	foreign capital	384 271.6	1 479.3
division 26	total	7 985 321.2	4 611 496.1
	domestic	2 295 501.0	716 954.9
	with share of foreign capital	70 845.6	19 753.0
	foreign capital	5 618 974.6	3 874 788.2
division 27	total	10 723 048.0	2 192 386.1
	domestic	1 725 631.7	352 562.7
	with share of foreign capital	190 229.2	7 732.8
	foreign capital	8 807 187.1	1 832 090.6
division 28	total	3 913 878.2	1 356 739.5
	domestic	1 939 257.3	746 691.5
	with share of foreign capital	162 465.1	81 764.3
	foreign capital	1 812 155.8	528 283.7
division 29	total	3 575 372.1	–
	domestic	1 895 081.1	–
	with share of foreign capital	–	–
	foreign capital	1 680 291.0	–
division 30	total	1 931 893.6	67 641.0
	domestic	961 244.8	8 139.0
	with share of foreign capital	–	–
	foreign capital	970 648.8	59 502.0
division 32	total	391 650.3	42 093.6
	domestic	117 377.3	24 050.6
	with share of foreign capital	–	–
	foreign capital	274 273.0	18 043.0

Chapter 2. Manufactured production of selected industrial products by industry branch

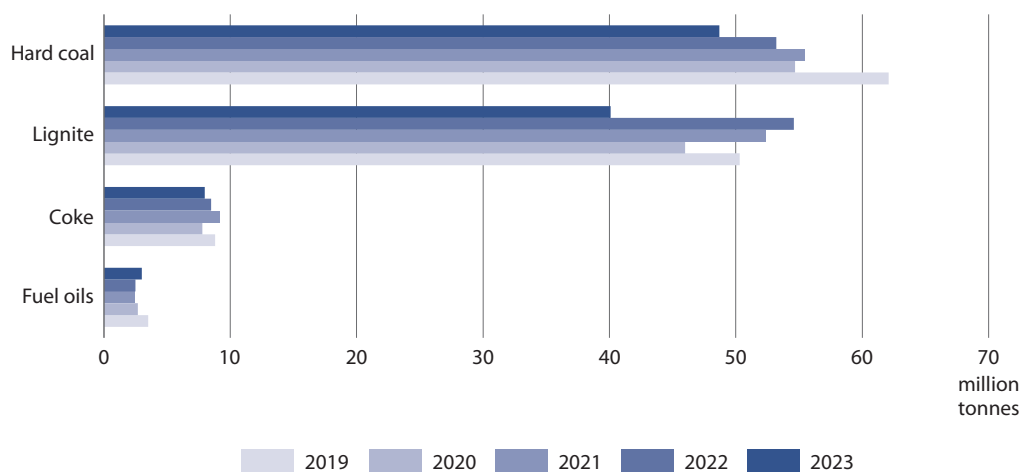
2.1. Energy raw materials

Energy products are products intended for heating or driving purposes. These include primarily hard coal lignite, coke, pellets, gasoline, heating and diesel oils. Energy products may also include vegetable oils, aliphatic and cyclic hydrocarbons, alcohols, organic surfactants, anti-knock agents intended for use, offered for sale or used as heating fuels or as additives or admixtures for heating fuels.

The mining industry supplies the most popular fuels, i.e. hard coal and lignite. In the analysed period, a decline in hard coal extraction was observed, and a slight increase in production compared to the previous year occurred only in 2021 (by 1.1%). In 2023, hard coal extraction reached 48,690 thousand tonnes and was lower by 8.5% compared to the previous year and by 21.6% to 2019. Lignite extraction has fluctuated over the last 5 years, reaching the highest level in 2022 (54,621 thousand tonnes). In 2023, lignite extraction was at 40,095 thousand tonnes and was lower both compared to 2022 and 2019 (by 26.6% and 20.4%, respectively).

The production of oils from crude oil in 2023 amounted to 826 thousand tonnes, which means a decrease in production by 3.3% compared to 2022 and by 15.1% to 2019. In 2019-2022, a systematic decrease in natural gas production was recorded, while in 2023, 5,487 hm³ of natural gas was extracted, which means an increase in production by 6.1% compared to 2022 and by 2.1% in the entire analyzed period.

Chart 13. Manufactured production of fuel products



Another important energy product is provided by the coke industry. In Poland, there is mainly produced ordinary and stabilized blast furnace coke, used in the steel industry for iron smelting. It is also used as a high-quality fuel for firing heating boilers (both in boiler rooms, workshops and individual farms) and in metal foundries. In the analyzed period, the highest level of coke production was recorded in 2021. In 2023, coke production amounted to 8,003,341 tonnes and compared to the previous year it was lower by 5.7%, and compared to 2019 – by 8.8%.

In the analyzed period, the highest level of fuel oil production was recorded in 2019 – 3,458,737 tonnes. In 2023, production amounted to 2,954,083 tonnes and was by 14.6% lower than in 2019.

In the analyzed period, the production of wood pellets and briquettes increased until 2021, after which a decrease was recorded in 2022, which lasted until 2023 and amounted to 9.2% compared to the previous year. Compared to 2019, there was also a decrease in the production of this product – 8.8%. In Poland, mainly pellets are produced, which account for 86.7% of the total production in the pellets and briquettes category.

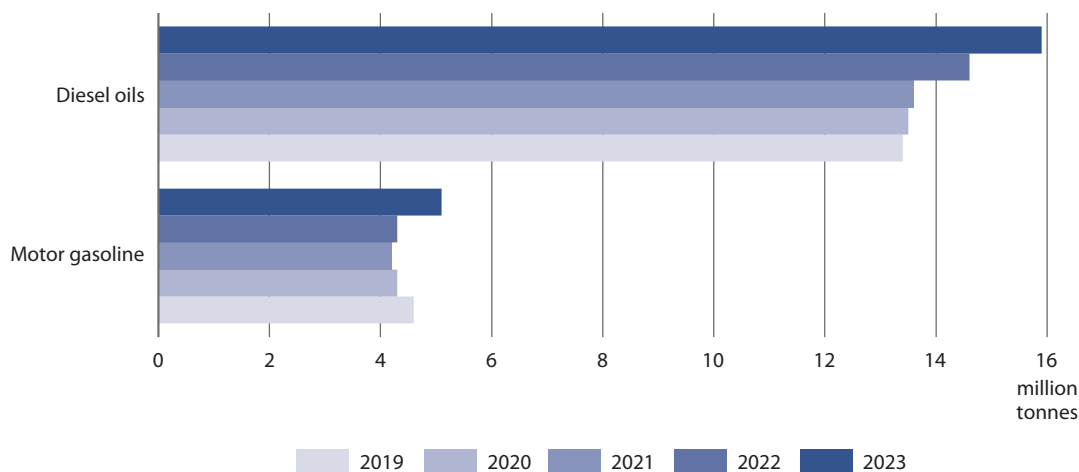
Table 15. Manufactured production of selected energy raw materials

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Oils from crude oil	tonnes	972 564	937 462	888 082	854 050	825 880	84.9	96.7
Natural gas	hm ³	5 374	5 302	5 274	5 172	5487	102.1	106.1
	PJ	159	157	155	152	147	92.5	96.7
Liquefied propane and butane	tonnes	630 497	633 792	591 727	626 582	558 571	88.6	89.1
Pellets and briquettes of pressed and agglomerated wood and of wood waste and scrap, including straw briquettes	1000 t	1 471	1 573	1 628	1 478*	1 341*	91.2	90.8

* survey covers also entities employing less than 9 persons.

Another group of products providing energy are fuels for internal combustion engines, among which the highest production was recorded for diesel oils – 15,929,115 tonnes. In the analyzed period the volume of diesel oil production systematically increased and in 2023 was higher by 18.7% compared to 2019. The second product in terms of production volume used as fuels for internal combustion engines was motor gasoline, including aviation gasoline, the production of which in 2023 amounted to 5,121,709 tonnes. Compared to the previous year, there was a significant increase in production – by 18.1%, and compared to 2019 – by 11.2%.

Chart 14. Manufactured production of fuels for vehicles



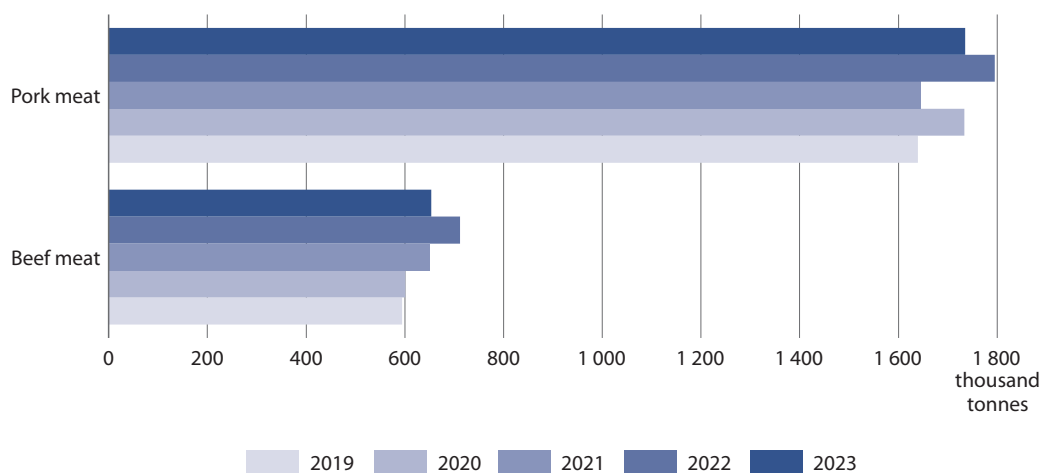
2.2. Products of food and tobacco industry

Products of the food and tobacco industry include meat and meat products, fish and shellfish, processed fruits and vegetables, oils and fats both animal and vegetable, dairy products, grain milling products, animal feeds, alcoholic and non-alcoholic beverages and tobacco products.

In the annual survey for 2023, 558 products were included in the statistical observation, and manufactured production was reported for 500 products.

An important part of the meat industry is the production of fresh and chilled meat. In the 2019–2022 period, the production of fresh and chilled beef increased, only in 2023, compared to 2022, there was a decrease in production by 8.2%, and the production amounted to 653,556 tonnes. For fresh and chilled pork, production increased from 1,639,352 tonnes to 1,735,098 tonnes in 2019–2023. During the period under review, the highest production of both pork and beef was recorded in 2022, with a decrease by 3.3% and 8.2% in 2023, respectively.

Chart 15. Manufactured production of fresh and chilled beef and pork meat



Canned meat plays a large role in the production of meat products. Canned pork accounted for the largest share of Poland's total canned meat production in 2023 (64.4%), although its production declined between 2019 and 2023 (a 22.3% decrease was recorded in 2023 compared to 2019, production in 2023 amounted to 67,766 tonnes). In the second place in terms of production volume was canned poultry, with 34,362 tonnes in 2023. The production increased (by 29.4%) in 2023 compared to 2019, despite a 6.0% decrease compared to 2022. In third place were canned beef and veal, with production in 2023 of 2,343 tonnes – the production of canned beef and veal in 2023 compared to 2019 decreased by 76.8%. Canned game and rabbit accounted for the smallest share of production, their production in 2023 stood at 677 tonnes, with a share of 0.6%.

Table 16. Manufactured production of canned meat

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Canned poultry meat	tonnes	26 552	28 590	27 256	36 572	34 362	129,4	94,0
Canned pork meat	tonnes	87 230	69 547	65 397	71 157	67 766	77,7	95,2
Canned beef and veal meat	tonnes	10 081	3 785	2 692	3 185	2 343	23,2	73,6
Canned game and rabbit meat	tonnes	1 001	585	650	716	677	67,6	94,6

Manufactured production of prepared meals and dishes has gradually increased since 2019. In 2023, the production of prepared meals and dishes based on meat reached 157,111 tonnes (up 105.5% compared to 2019). The production of meals and dishes based on vegetable also grew from 2019 to 2022, in which it reached 55,052 tonnes. In 2023 there was, compared to 2022, a decrease by 15.7% (to 2019 – an increase by 24.3%). Prepared meals and dishes based on fish and crustaceans accounted for a small share of the output produced, in 2023 their production amounted to 14,281 tonnes, with an increase by 157.5% compared to 2019. The production of soups and broths and preparations therefor from 2019 to 2023 increased by 9.2%, although there was a decrease by 2.0% in 2023 compared to the previous year.

Table 17. Manufactured production of soup, prepared meals and dishes

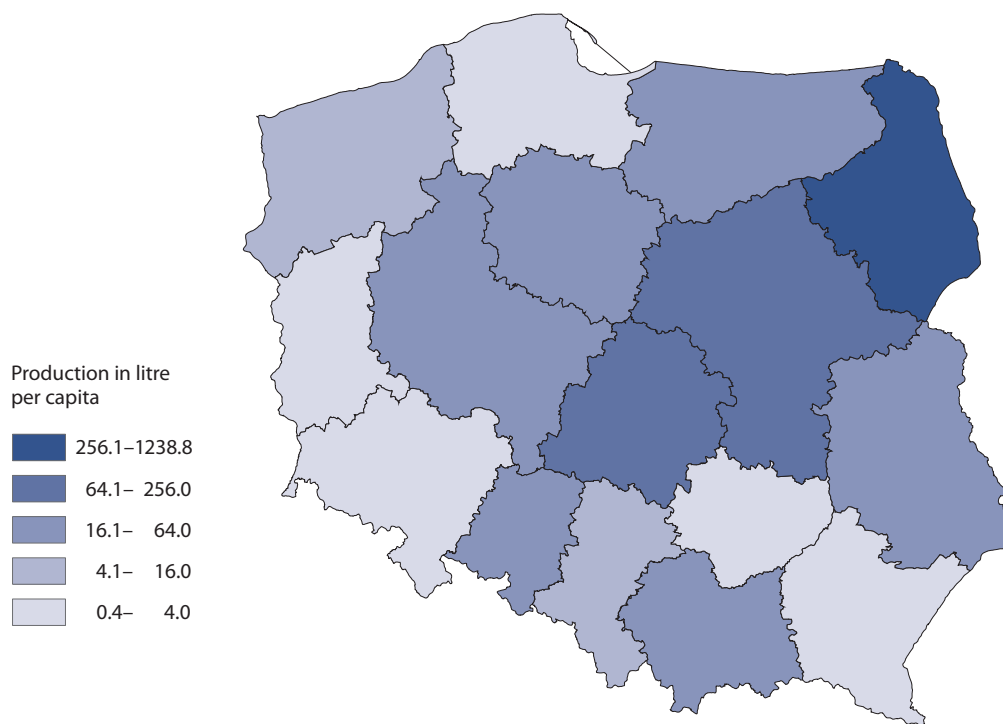
Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Prepared meals and dishes based on meat	tonnes	76 465	86 682	103 804	148 746	157 111	205,5	105,6
Prepared meals and dishes based on fish and crustaceans	tonnes	5 547	4 611	7 661	15 301	14 281	257,5	93,3
Prepared meals and dishes based on vegetables	tonnes	37 315	43 631	47 742	55 052	46 392	124,3	84,3
Soups and broths and preparations therefor	tonnes	85 943	86 041	84 322	95 705	93 815	109,2	98,0

In the food industry, an important role is played by the production of milk and dairy products, which value of sold production in 2023 amounted to 45,332 million PLN, down by 9.5% compared to 2022. During the analysed period, a slow decline in the share of the value of sold production of this group of products in the Food products division was observed, from 14.4% in 2019 to 14.0% in 2023.

Milk production changed little during the period under review. In 2023, the volume of milk produced was 35,891 thousand hectolitres, down by 3.5% compared to 2022, and compared to 2019 – increased by 4.1%.

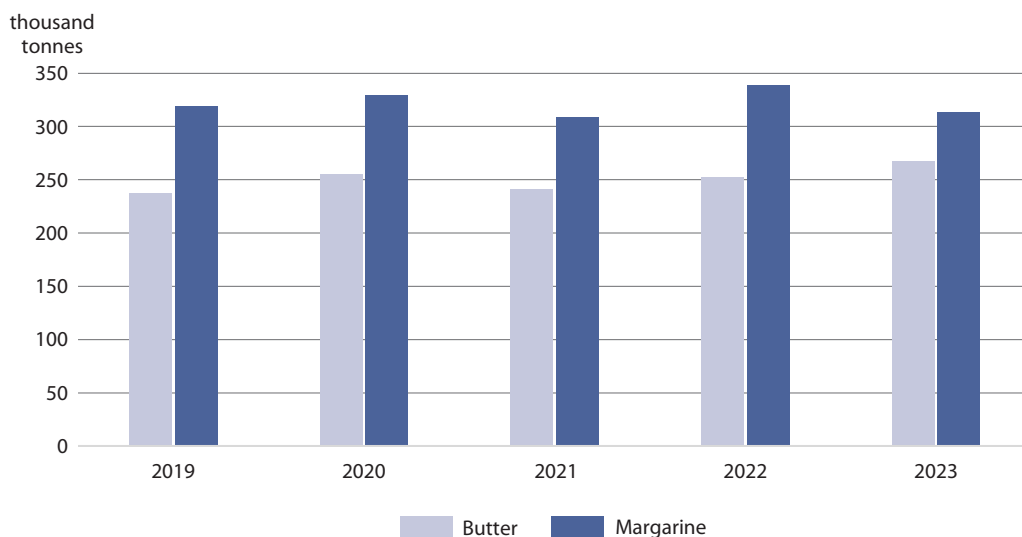
In 2023, the produced milk output per capita in Poland was 95 liters. In seven voivodeships it was below 10 liters, the lowest in the Pomorskie and Podkarpackie Voivodship – 0.4 liters and 1.8 liters per capita, respectively. In six voivodships it ranged between 25 and 62 liters per capita. Against this background, Podlaskie Voivodship stood out, with a production of 1,238.8 liters, Łódź Voivodship, with 207.1 liters, and Mazowieckie Voivodship, with 197.8 liters per capita.

Map 1. Manufactured production of milk per capita by voivodship in 2023



The production of animal and vegetable fats and dairy products also plays an important role in the food industry. Among spreadable fats, we can distinguish fats produced on the basis of cream – butter and fats based on vegetable oils – margarine.

Butter production fluctuated slightly during the period under review, with the largest year-on-year increase in production recorded in 2020 (by 7.6%) to 267 thousand tonnes. The production of margarine in 2023 amounted to 313 thousand tonnes, down by 1.9% compared to 2019 and by 7.7% to the previous year.

Chart 16. Manufactured production of butter and margarine

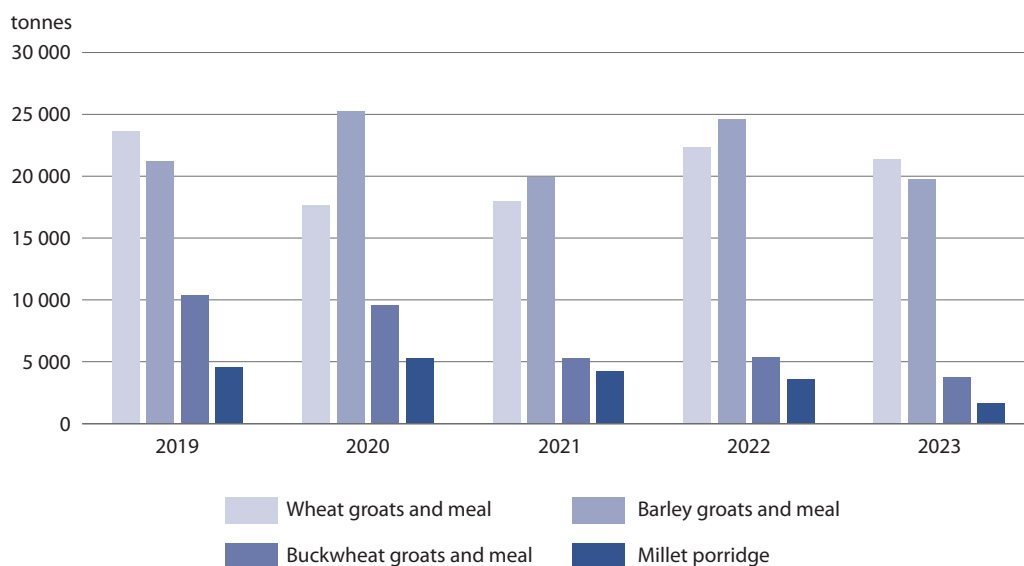
Among grain milling products, meals and groats are the most important. Wheat groats and meal accounted for the largest share, with production of 21,380 tonnes in 2023. Barley groats and meal came in second place.

The production of groats from cereals had a downward trend during the period under review. In the case of wheat groats and meals, production fell by 4.5% in 2023 compared to the previous year, and to 2019 – by 9.7%.

The production of barley groats and meals also declined during the period under review, and only in 2020 and 2022 compared to previous years was there an increase in production (by 19.1% and 23.8%, respectively), with production of 25,267 and 24,610 tonnes, respectively. Over the entire period under review, production declined by 7.0%.

The volume of production of millet porridge in 2019–2023 decreased by 64.4%, amounting to 1,614 tonnes in 2023, down by 54.6% from 2022.

In the case of buckwheat groats and meals, which are not produced from cereals, the highest production (10,412 tonnes) was recorded in 2019. In 2023, production was 3,737 tonnes, down by 64.1% compared to 2019.

Chart 17. Manufactured production of groats and meal from cereals

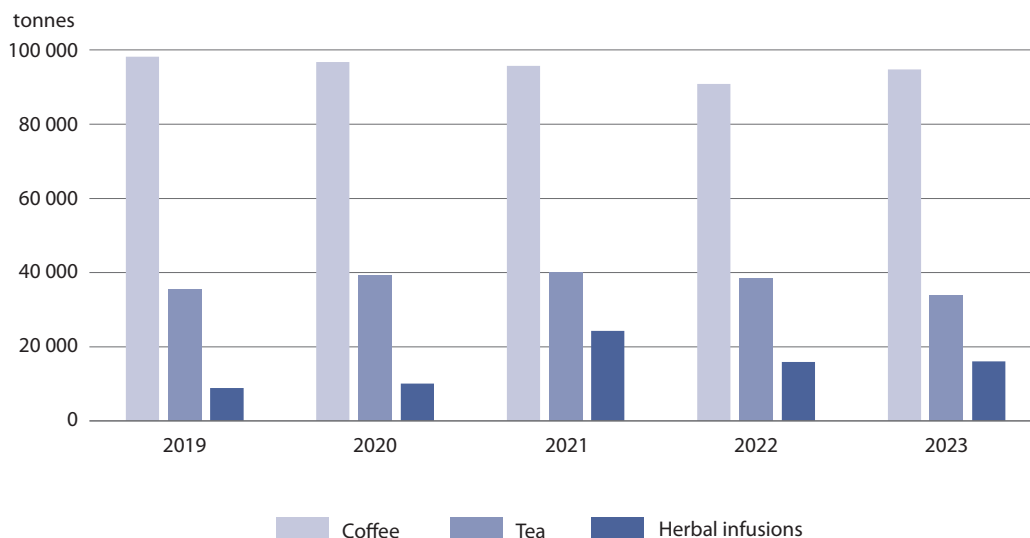
Sugar is the most popular sweetener, which also has major applications in the food industry. In 2023, there was an increase in sugar production, both to 2022 and to 2019, by 6.2% and 3.6%, respectively.

Chocolate, including white chocolate, includes chocolate in various forms, bars, blocks, with filling or other additives: nuts, grains, fruits. In 2019–2023, the production of manufactured chocolate successively increased, in 2023 it amounted to 364,714 tonnes and increased by 31.2% compared to 2019. A decrease in production between 2019 and 2023 was recorded for chocolate coated dragees – by 20.2%, and compared to 2022 by 17.4%. The production of chocolates declined during the period under review, amounting to 45,395 tonnes in 2023, down by 2.1% compared to 2022, and 2019 – by 14.9%.

Table 18. Manufactured production of sugar and sugar confectionery

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Sugar	1000 t	2 200	1 992	2 151	2 146	2 278	103,6	106,2
Chocolate including white chocolate	tonnes	278 021	289 635	326 836	342 567	364 714	131,2	106,5
Chocolates	tonnes	53 338	50 122	50 936	46 387	45 395	85,1	97,9
Chocolate coated dragees	tonnes	24 220	22 174	21 771	23 407	19 331	79,8	82,6

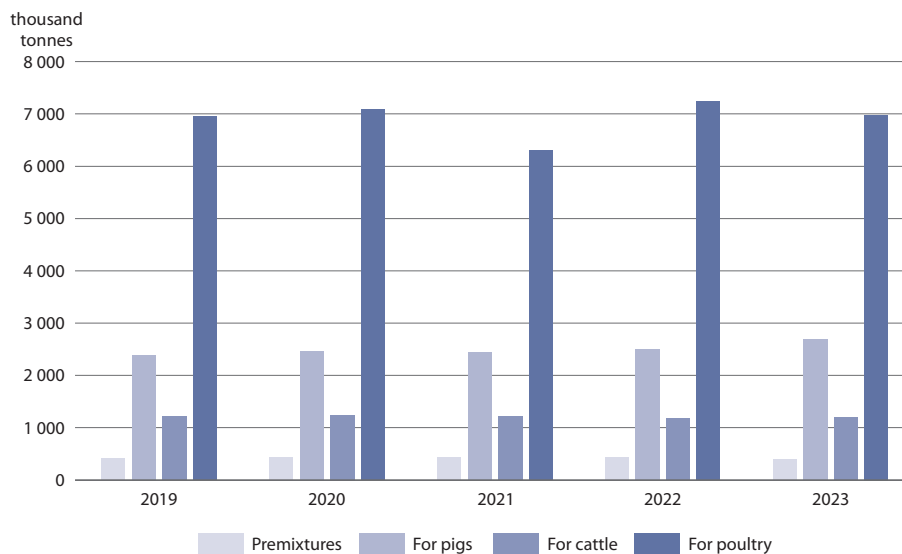
In the Food products division, the production of coffee, tea and herbal infusions takes an important position. In the analyzed period, coffee production decreased, only in 2023 compared to 2022 there was an increase in production by 4.3%, while compared to 2019 – a decrease by 3.5% (production in 2023 amounted to 94,778 tonnes). In the case of tea, production in 2019–2021 increased from 35,527 tonnes to 39,950 tonnes, decreases compared to the previous year were recorded in 2023 and 2022, by 12.1% and 3.7%, respectively. Production of infusions in the analyzed period 2019–2023 increased by 80.6%, while compared to 2022 – by 0.9%.

Chart 18. Manufactured production of coffee, tea and herbal infusions

The food industry also produces products for agriculture, i.e. prepared feeds for farm animals and pet food. Prepared feeds for farm animals and pet food accounted for 9.0% of the value of production in the Food products division (28,955 million PLN).

The share of prepared feeds for farm animals in the manufactured production for agriculture in 2023 was 91.9%, and was slightly lower than that recorded in 2019. Production of pet food accounted for 8.1% of the share in 2023, and was 1.0 p.p. higher than the 7.1% share in 2019.

The group of products is dominated by the production of poultry feed, whose share in the total production of feed in Poland in 2023 amounted to 60.8%. Production in 2023 amounted to 6,980 thousand tonnes and increased by 0.4% compared to 2019. In the second place, with a 23.4% share, was the production of feed for pigs. Its share increased by 2.2 p.p. compared to 2019. In 2023, compared to 2019, a decrease in the share of cattle feed was recorded from 10.7% to 10.4%. In the last place were premixtures, the share of which in 2019 amounted to 3.6% (411 thousand tonnes) – compared to 2023, it decreased by 0.1 p.p.

Chart 19. Manufactured production of prepared feeds for farm animals

Among pet food, dog or cat food accounted for the largest share, accounting for as much as 91.8% of total pet food production in 2023.

From 2019 to 2023, manufactured production of pet food increased steadily, the largest increase was recorded for dog or cat food (production in 2023 compared to 2019 increased by 15.9% and amounted to 925,616 tonnes). A smaller increase compared to 2019 (by 4.3%) was recorded for preparations used for feeding pets, excluding dog or cat, production in 2023 amounted to 71,964 tonnes and increased by 4.7% compared to the previous year.

Table 19. Manufactured production of pet foods

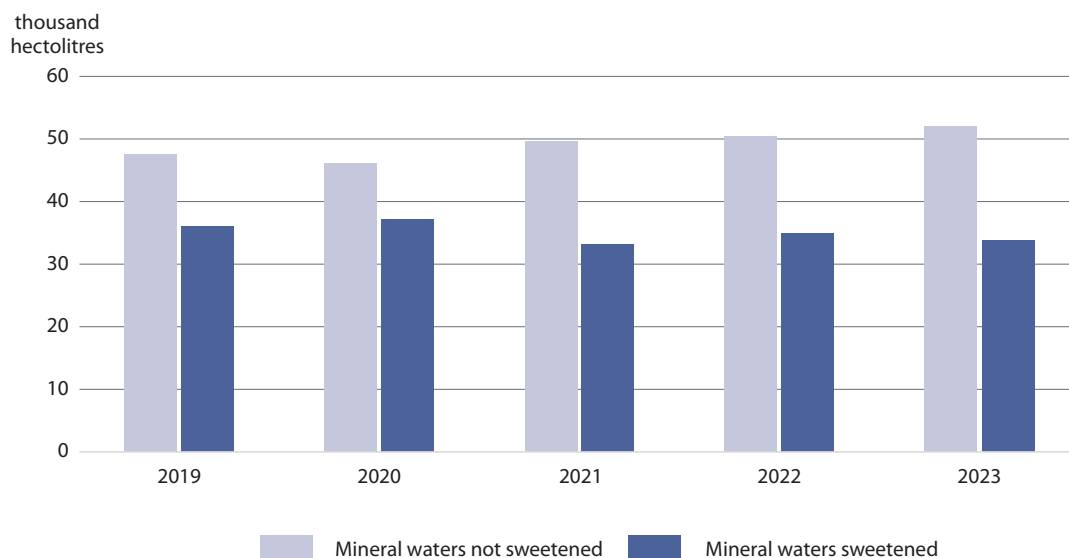
Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Prepared pet foods	tonnes	867 806	871 913	929 541	963 411	1 008 455	116,2	104,7
dog or cat food	tonnes	798 831	799 181	850 468	894 691	925 616	115,9	103,5
preparations used for feeding pets (excluding dog or cat)	tonnes	68 975	72 732	79 073	68 720	71 964	104,3	104,7

Among soft drinks, mineral waters not sweetened and mineral waters sweetened play a significant role.

In 2023, 18,172 thousand hectolitres more mineral waters not sweetened were produced than mineral waters sweetened. The share of unsweetened waters amounted to 60.6% and was 3.7 p.p. higher compared to 2019, while the share of sweetened waters decreased from 43.1% in 2019 to 39.4% in 2023.

In the analyzed period, the production of mineral waters not sweetened increased. In 2023 compared to 2019 it increased by 9.2%, and compared to 2022 – by 3.2%, and amounted to 51,952 thousand hectolitres. In the case of waters sweetened, production in 2019–2023 decreased from 36,052 thousand hectolitres to 33,780 thousand hectolitres.

Chart 20. Manufactured production of mineral waters



In Beverages division, vodka production plays a significant role among strong alcoholic beverages. Vodka production in 2019–2023 declined. An increase in production compared to the previous year was recorded only in 2021 (by 9.8%, production amounted to 1,080 thousand hectolitres). In 2023, vodka production amounted to 877 thousand hectolitres and decreased by 13.8% compared to 2022 and by 17.0% compared to 2019.

Table 20. Manufactured production of vodka

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Vodka	1000 hl 100%	1 057	984	1 080	1 018	877	83,0	86,2

In the analyzed period, cigarettes production decreased compared to the previous year in 2021 and 2023 (by 3.3% and 7.3%, respectively). The highest level of production was recorded in 2022 – 231,736 million units. Production of smoking tobacco in 2023, compared to 2019, increased by 27.4% and amounted to 48,161 tonnes.

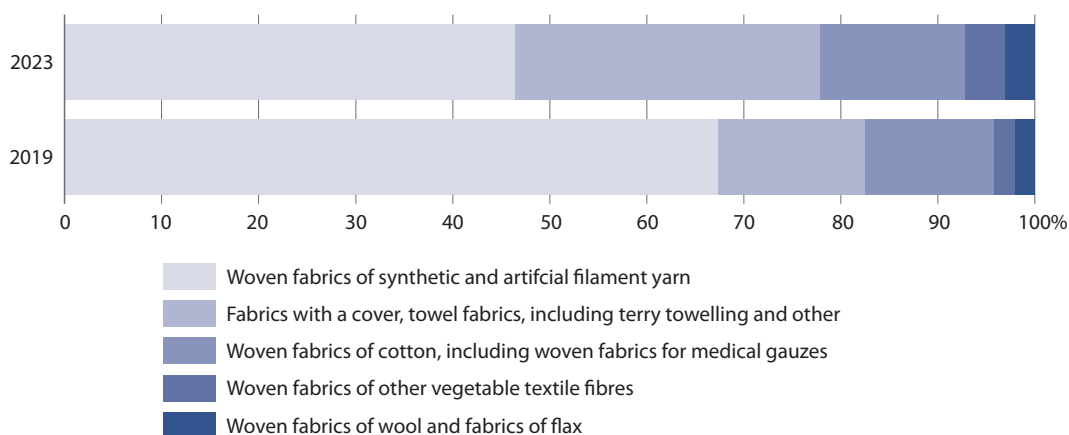
Table 21. Manufactured production of cigarettes and tobacco

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Cigarettes	million units	213 314	223 219	215 776	231 736	214 760	100,7	92,7
Smoking tobacco	tonnes	37 801	43 457	39 583	52 234	48 161	127,4	92,2

2.3. Textiles, wearing apparel and leather industry products

The products of the textile, clothing and leather industries include among others yarn and thread, woven fabrics, knitted fabrics, ready-made textile products, carpets, rugs and other textile floor coverings, rope products, non-wovens and non-woven products, technical and industrial textile products, knitted and woven wearing apparel, workwear and protective, underwear, clothing accessories, fur products, hosiery, leather and leather goods and footwear.

In the Textiles, Wearing apparel and Leather and leather products divisions, 381 products and assortment groups were monitored. In 2023, data on production for 323 groupings was reported.

Chart 21. Structure of manufactured production of woven fabrics by type

Total fabric production in 2023 amounted to 80.5 thousand m², 43.8% less compared to 2019, when production amounted to 143 thousand m². Almost half of the fabrics (46.3%) produced in Poland in 2023 were fabrics made of synthetic and artificial fiber yarn (37,281 thousand m²). Despite the fact that these fabrics were produced the most in Poland, their production decreased the most compared to 2019, by 61.4%.

Table 22. Manufactured production of woven fabrics

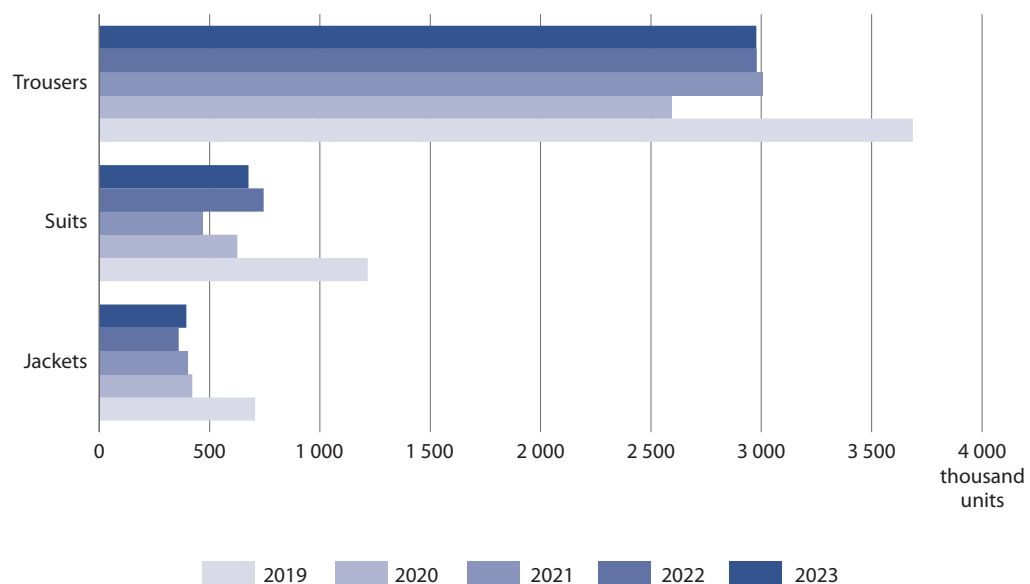
Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Woven fabrics wool or fine animal hair and flax fabrics	1000 m ²	2 876	3 203	2 030	2 341	2 418	84.1	103.3
Woven fabrics of other vegetable textile fibres	1000 m ²	3 086	3 412	2 832	3 292	3 389	109.8	102.9
Woven fabrics of cotton, including woven fabrics for medical gauzes	1000 m ²	19 086	16 671	18 669	13 969	12 021	63.0	86.1
Woven fabrics of synthetic and artificial filament yarn	1000 m ²	96 555	71 862	70 331	56 662	37 281	38.6	65.8
Fabrics with a cover, towel fabrics, including terry towelling and other	1000 m ²	21 561	24 201	18 818	18 472	25 341	117.5	137.2

The production of pile fabrics, towelling fabrics, including terry cloth and other special fabrics, the production of which accounts for 31.5% of the total production of fabrics, increased by 17.5% compared to 2019 and by 37.2% compared to the previous year. The lowest, only 2.0% in 2023 of fabric production, was the production of wool and linen fabrics. In 2019-2023, the clothing industry recorded declines in the production of most products.

Table 23. Manufactured production of men's wearing apparel

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Men's outerwear	units	1 132 400	892 470	1 029 219	1 347 608	915 921	80.9	68.0
Men's jackets	units	706 295	422 260	399 478	360 477	395 426	56.0	109.7
Men's suits	units	1 216 641	625 741	467 554	745 058	676 579	55.6	90.8
Men's trousers	units	3 687 255	2 596 030	3 008 873	2 979 583	2 978 747	80.8	100.0
Men's shirts	units	4 940 335	3 202 932	2 988 063	3 117 388	2 575 611	52.1	89.4

Men's jacket production decreased every year in the years 2019–2022, the largest decrease occurred in 2020 compared to the previous year, by 40.2%, after the start of the Covid-19 pandemic and the introduction of related restrictions. In the following years, the decrease was 5.4% and 9.8%, respectively, while in 2023 there was a slight increase compared to 2022, by 9.7%. In the analyzed period, suit production dropped from 1,216,641 units in 2019 to 667,579 units in 2023, which was a decrease of 44.4%. The largest decrease in suit production compared to the previous year occurred in 2020, by 48.6%. An increase in suit production compared to the previous year was recorded only in 2022, by 59.4%.

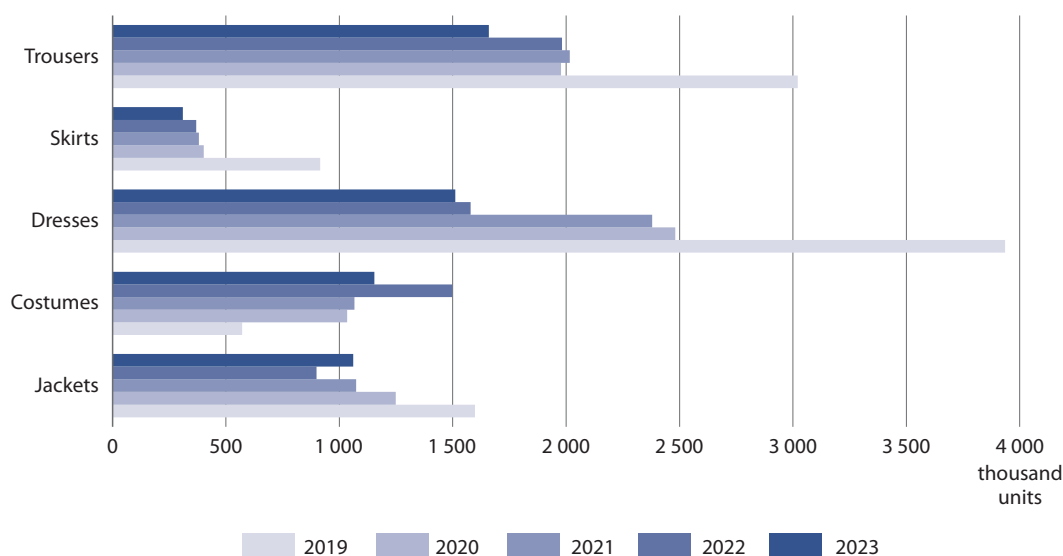
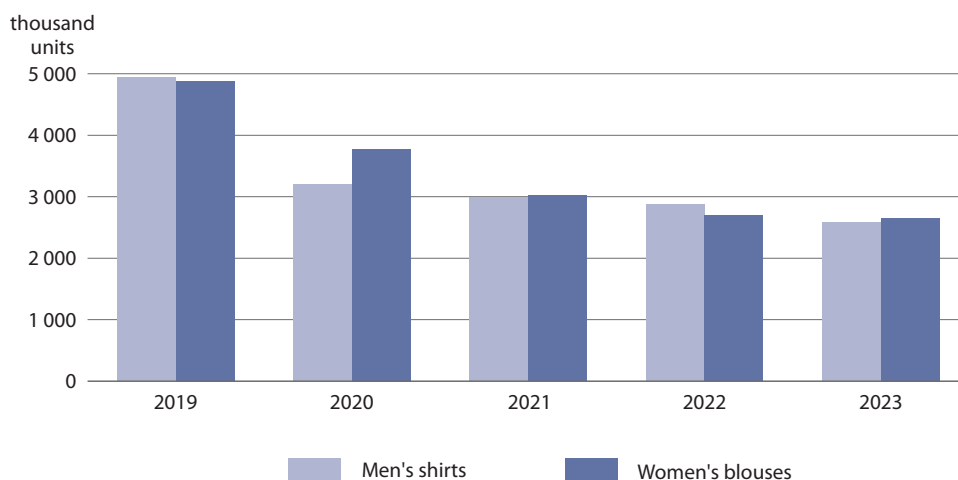
Chart 22. Manufactured production of men's wearing apparel by type

The largest share in men's clothing production is held by trousers (38.5%). The production of men's trousers dropped in 2020 by 29.6% compared to the previous year. In 2021, production increased by 15.9%, and remained at a similar level in subsequent years.

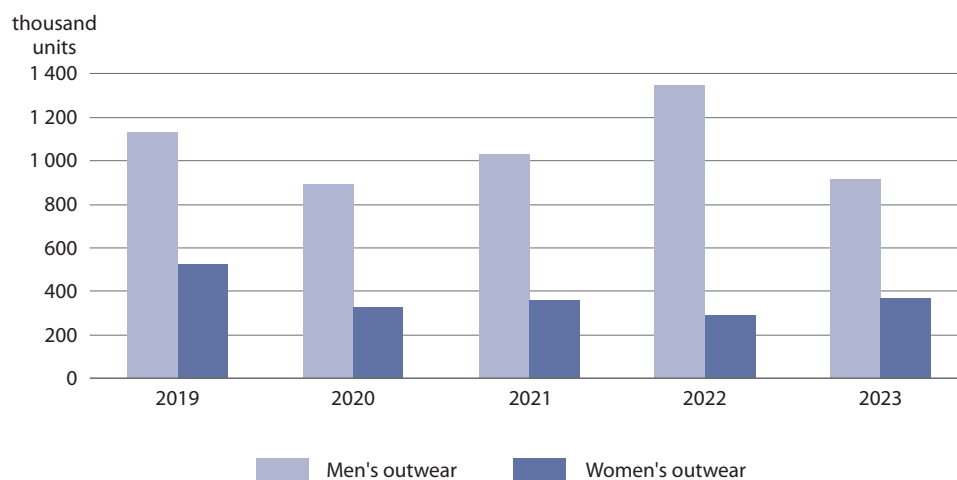
Table 24. Manufactured production of women's wearing apparel

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Women's outerwear	units	523 411	325 915	360 434	287 008	368 299	70.4	128.3
Women's costumes	units	571 201	1 034 110	1 065 669	1 498 052	1 149 621	201.3	77.0
Women's jackets	units	1 598 300	1 248 999	1 074 365	898 618	1 153 476	66.4	118.1
Women's dresses	units	3 934 793	2 481 300	2 378 924	1 578 690	1 061 053	38.4	95.7
Women's skirts	units	914 654	402 205	380 930	368 697	310 027	33.9	84.1
Women's trousers	units	3 021 342	1 977 978	2 015 699	1 981 522	1 658 889	54.9	83.7
Women's blouses	units	4 880 944	3 780 416	3 019 637	2 692 607	2 657 470	54.5	98.7

In the analyzed period, the production of women's wearing apparel also decreased. The largest decrease in production compared to the previous year for most products in this group was recorded in 2020, which was related to the Covid-19 pandemic. This year, the production of skirts decreased by 56.0%, dresses by 36.9%, trousers by 34.5%, women's jackets by 21.9%. In the entire analyzed period, the largest decrease in production was recorded for skirts, by 66.1% and dresses, by 61.6%. The increase in production compared to 2019 occurred only for women's costumes by 101.3%. The most significant increase in the production of costumes compared to the previous year occurred in 2020, by 81.0%, while the highest number of women's costumes was produced in 2022 (1,498 thousand units).

Chart 23. Manufactured production of women's wearing apparel by type**Chart 24. Manufactured production of men's shirts and women's blouses**

Women's blouses and men's shirts in 2023 accounted for 31.7% and 32.9% of women's and men's clothing production, respectively. Over the five years analyzed, the production of women's blouses was close to the production of men's shirts. Since 2019, the production of women's blouses has been decreasing: in 2020 by 22.6%, in 2021 by 20.1%, in 2022 by 10.8%, while in 2023 the decrease in production compared to the previous year was the smallest, by 1.3%. Men's shirts were produced in 2020 by 35.2% less than in 2019, and another decrease occurred in 2021, by 6.7% and in 2023, by 17.4%. Only in 2022 did production increase slightly compared to the previous year, by 4.3%. In 2023, compared to 2019, the production of men's shirts decreased by 47.9%.

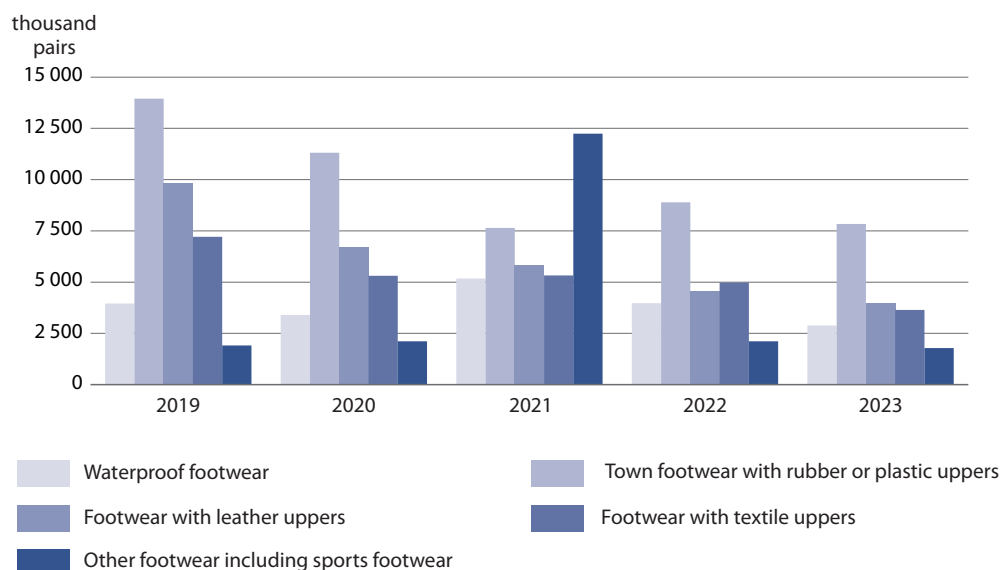
Chart 25. Manufactured production of men's and women's outerwear

In 2022, compared to the previous year, the largest increase in the production of men's coats, jackets and other outerwear was recorded, by 30.9%. In case of women's coats, jackets and other outerwear the largest decrease in production was recorded in 2020, by 37.7%. In the following year, 2023, significantly more, or 915,921 units, of men's outerwear was produced than women's outerwear, of which only 368,299 units were produced. In 2023, the production of women's outerwear, compared to 2019, fell by 29.6%, while the production of men's outerwear by 19.1%. Compared to the previous year, the production of women's outerwear in 2023 increased by 28.3% and men's outerwear decreased by 32.0%.

Table 25. Manufactured production of footwear by type

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Total footwear	1000 pairs	36 875	28 848	26 226	24 542	20 127	54.6	82.0
Waterproof footwear	1000 pairs	3 958	3 401	5 178	3 978	2 881	72.8	72.4
Town footwear with rubber or plastic uppers	1000 pairs	13 951	11 307	7 645	8 895	7 840	56.2	88.1
Footwear with leather uppers	1000 pairs	9 843	6 714	5 832	4 568	3 976	40.4	87.0
Footwear with textile uppers	1000 pairs	7 212	5 310	5 323	4 983	3 644	50.5	73.1
Other footwear including sports footwear	1000 pairs	1 911	2 116	12 238	2 118	1 786	93.5	84.3

In the analysed period, a decrease in footwear production was recorded from 36,875 thousand pairs in 2019 to 20,127 thousand pairs in 2023, which meant a decrease of 45.4%. Compared to 2022, total footwear production in 2023 decreased by 18.0%. The decrease in production in the analysed period was reported for all types of footwear. The largest share in manufactured production was held by town footwear with rubber or plastic uppers, the production of which in 2023 amounted to 7,840 thousand pairs, which constituted 39.0% of total footwear production. In 2023, share of footwear with leather uppers in total footwear amounted for 19.8% and share of footwear with textile uppers –18.1%. Their production compared to 2019 decreased by 59.6% and 49.5%, respectively.

Chart 26. Manufactured production of footwear by type

2.4. Products of wood and paper industry

The wood and paper industry products include, among others sawn and chipped wood, products of wood, cork, straw and plaiting materials, paper and paperboard, and paper and paperboard products. In divisions classified as wood and paper industry: Wood and products of wood and cork; articles of straw and plaiting materials division and Paper and paper products, in the annual survey for 2023, 212 products were statistically observed, and manufactured production was reported for 171 products.

One of the most important products of the wood industry is sawnwood, the production of which in the analysed period reached the highest level in 2021 (5,001 dam³). In 2023, production amounted to 4,154,893 m³ and was lower both in comparison to 2019 and 2022, by 16.1% and 13.2%, respectively. In Poland, mainly coniferous sawnwood (3,799,231 m³) was produced, while non-coniferous sawnwood accounted for only 8.6% of total sawnwood production, and its share in 2023 fell by 2.0 p.p. compared to 2019. In 2023, 45.8% of coniferous sawnwood production was pine wood (*Pinus* spp.) sawn or chipped lengthwise, sliced or peeled, of thickness exceeding 6 mm, while 99.1% of non-coniferous sawnwood production was wood, sawn or chipped lengthwise, sliced or peeled, of a thickness exceeding 6 mm (excluding coniferous and tropical woods and oak blocks, strips and friezes).

In 2023, compared to 2022, there was a decrease in production in the group of major wood industry products, the largest was observed for wooden flooring materials, other (excluding coniferous wood and bamboo) – by 28.7%, and the lowest for particle board and similar board of ligneous materials – by 3.2%. A decrease in the production of these products also occurred compared to 2019, the most significant for flooring materials – by 31.8%. Wood flooring materials, other (excluding coniferous wood and bamboo) accounted for 89.6% of flooring materials production in 2023 and their share, despite a decrease in production, increased by 2.9 p.p. compared to 2019.

In 2023, particle board of wood accounted for 83.7% of total particle board production: in the analysed period, the production of particle board of wood increased until 2021, followed by a decrease in their production, which continued until 2023 and amounted to 9.7% compared to 2019.

In the period under review, fibreboard production peaked in 2021 (766,561 thousand m³), followed by a decline in production, which continued until 2023, as in particle board. In 2023 the production of fibreboards decreased compared to 2019 (by 17.5%) and 2022 (by 11.4%). Medium density fibreboard (MDF), of a thickness not exceeding 5 mm, had the largest share in fibreboards production – in 2023 it amounted to 67.2%, after an increase of 5.7 p.p. compared to 2019.

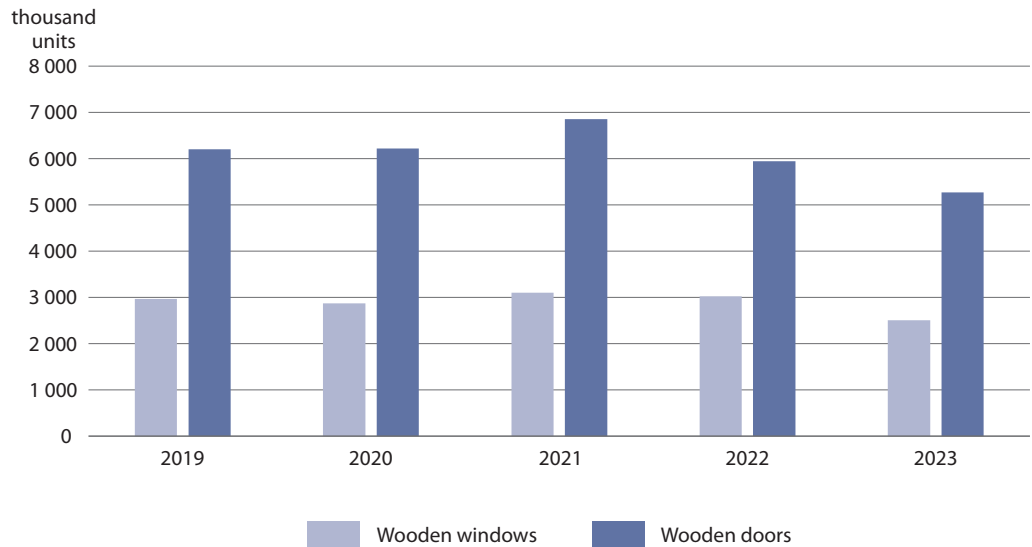
Table 26. Manufactured production of selected products of wood industry

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Sawnwood	dam ³	4 953	4 666	5 001	4 781	4 155	83.9	86.8
Coniferous sawnwood	dam ³	4 431	4 217	4 538	4 317	3 799	85.8	87.9
Flooring materials	dam ³	114	119	121	106	78.0	68.2	73.4
Wooden flooring materials, other (excluding coniferous wood and bamboo)	dam ³	99.1	107	110	97.9	69.9	70.5	71.3
Particle board	dam ³	6 588	6 571	7 160	5 880	5 693	86.4	96.8
Particle board of wood	dam ³	5 282	5 419	6 040	4 970	4 768	90.3	95.9
Fibreboards	1000 m ²	730 814	681 890	766 561	681 014	603 043	82.5	88.6
Medium density fibreboard (MDF), of a thickness not exceeding 5 mm	1000 m ²	449 763	418 357	468 120	427 408	405 220	90.1	94.8

In Poland, the largest production is made of assembled parquet panels of wood, excluding those for mosaic floors, which production in 2023 reached 368,717 m³. The production of assembled parquet panels of wood for mosaic floors was much lower, amounting to 12,893 m³. In the analysed period, the production of assembled parquet panels of wood, excluding those for mosaic floor and assembled parquet panels of wood for mosaic floors, decreased in both relation to 2019 and 2022. The largest decrease occurred compared to 2019 and amounted to 29.4% for assembled parquet panels of wood, excluding those for mosaic floors and 48.1% for assembled parquet panels of wood for mosaic floors respectively.

Chart 27. Manufactured production of assembled parquet panels of wood

In the analysed period, the production of wooden windows and wooden doors, as well as other, previously analysed more important products of the wood industry, reached the highest level of production in 2021. In 2023, it recorded a decrease, both to 2019 and 2022, for wooden windows – by 15.5% and 17.0%, and for wooden doors – by 15.0% and 11.3%, respectively.

Chart 28. Manufactured production of wooden windows and wooden doors

In the group of wooden packagings, flat pallets were the dominant product, with 1,733 thousand tonnes produced in 2023, that was 16.5% less than in 2022. In the analysed period, the lowest level of production of box pallets was recorded in 2021 – 36.0 thousand tonnes. In 2023, production increased to 59.7 thousand tonnes, but was still much lower than in 2019 – a decrease of 31.8%. Whereas, in the analysed period the production of cases, boxes decreased starting from 2021: in 2023 it amounted to 82,656 tonnes (a decrease of 4.4% to 2022 and 1.5% to 2019). However, the production of cable-drums of wood in 2023 remained at the same level as in 2019, and to 2022 – it decreased by 14.4%.

Table 27. Manufactured production of selected wooden packagings

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Flat pallets	1 000. t	1 831	1 820	2 009	2 074	1 733	94.6	83.5
Box pallets	1 000. t	87.6	43.2	36.0	62.5	59.7	68.2	95.7
Cases, boxes	1 000. t	83.9	98.5	87.3	86.4	82.7	98.5	95.6
Cable-drums of wood	1 000. t	46.7	38.0	45.7	54.6	46.7	100.0	85.6

In the section covering paper industry products, in 2023, statistical observation covered 128 products, and production was reported for 98 products.

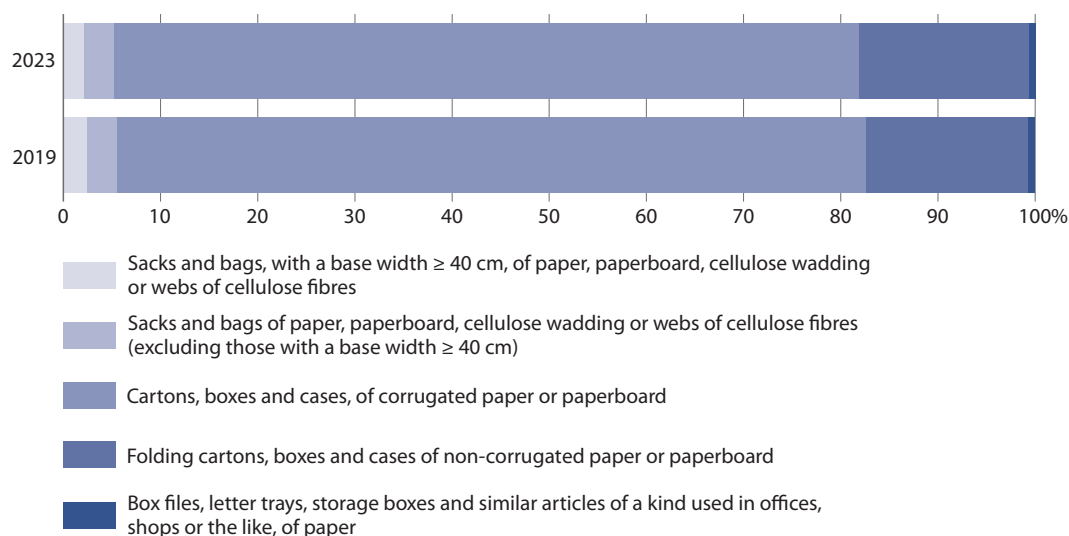
One of the most important products of the paper industry is paper and paperboard. In 2023, paper and cardboard production amounted to 4,622,671 tonnes and was lower by 11.7% compared to the previous year (5.3% compared to 2019). In 2023, two products dominated in the structure of paper and paperboard production: testliner – recycled liner board (by 21.3%) and tissue paper for the production of toilet paper, tissues, towels, napkins, etc.; cellulose wadding and cellulose fiber webs (by 15.2%).

In the years 2019–2023, there were minor changes in the structure of production of packages of paper and paperboard. Throughout the analyzed period, cartons, boxes and cases dominated, and within them – made of corrugated paper or paperboard. In 2023, their share amounted to 76.7% and was lower by 0.4% compared to 2019. In the production of all paper packaging, only the share of paperboards, boxes

and folding cases made of paper or cardboard other than corrugated increased (0.7% compared to 2019) and amounted to 17.4% in 2023. In the analyzed period, significantly fewer sacks and bags of paper were produced, the share of which was only 5.3%.

The production of cartons, boxes and cases in 2023 amounted to 3,443 thousand tonnes and was 7.7% lower than in 2022, when the highest level was recorded – 3,729 thousand tonnes. In the analyzed period, the lowest production for this group of products was recorded in 2019 – 3,182 thousand tonnes.

Chart 29. Structure of manufactured production of packages of paper and paperboard



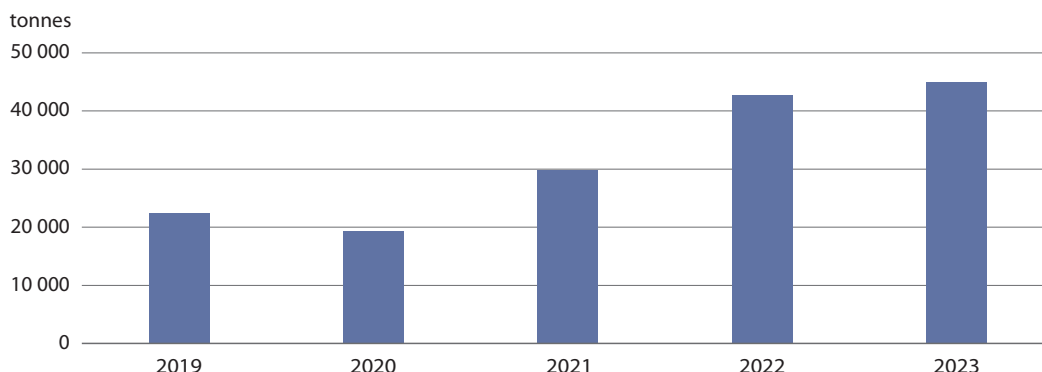
In 2023, the production of sacks and bags of paper amounted to 193 thousand tonnes and was 5.3% lower than in 2022, when the highest production level was recorded (204 thousand tonnes). In 2023, the production of sacks and bags with a base of 40 cm and more dominated in the group of sacks and bags of paper (by 58.6%).

Table 28. Manufactured production of paper hygiene products

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Toilet paper	tonnes	394 927	418 120	398 745	486 055	450 902	114.2	92.8
Handkerchiefs and cleansing or facial tissues of paper pulp, paper, cellulose wadding or webs of cellulose fibres	tonnes	45 247	58 752	52 346	65 189	72 269	159.7	110.9
Hand towels of paper pulp, paper, cellulose wadding or webs of cellulose fibres	tonnes	233 124	250 060	242 353	255 987	290 614	124.7	113.5
Sanitary towels, tampons and similar articles of paper	tonnes	27 280	30 538	32 407	43 244	31 570	115.7	73.0
Napkins and napkin liners for babies	tonnes	313 907	339 047	342 709	361 394	327 450	104.3	90.6
Napkins and napkin liners for babies	1000 units	7 944 951	8 371 164	8 345 558	9 019 599	8 316 884	104.7	92.2

One of the most important groups of products produced by the paper industry are personal hygiene products. In 2023, most products from this group recorded a decrease in production, including: toilet paper (by 7.2%), sanitary towels, tampons and similar articles of paper (by 27.0%), napkins and napkin liners for babies (by 9.4%). An increase in production was recorded for hand towels of paper pulp, paper, cellulose wadding or webs of cellulose fibres (by 13.5%) and handkerchiefs and cleansing or facial tissues of paper pulp, paper, cellulose wadding or webs of cellulose fibres (by 10.9%).

Chart 30. Manufactured production of trays, dishes, plates, cups and the like of paper or paperboard



In the period under review, the production of trays, dishes, plates, cups and the like of paper or paperboard showed an upward trend, with the exception of 2020. In 2023, it amounted to 45 thousand tonnes, and was twice as high as in 2019. The increase in the production of trays, dishes, plates, cups and the like of paper or paperboard was due to larger orders and the replacement of products made of plastic with products made of paper or paperboard.

2.5. Chemicals and chemical products

In Chemicals and chemical products division, in 2023 were covered by the survey 655 products and assortment groups, including data on manufactured production for 486 products.

The group of products in the chemical industry includes basic chemicals, which are the starting point for various industrial processes, as well as chemical products, e.g. fertilizers, pesticides, plastics, paints and varnishes, artificial fibers, cosmetics and detergents.

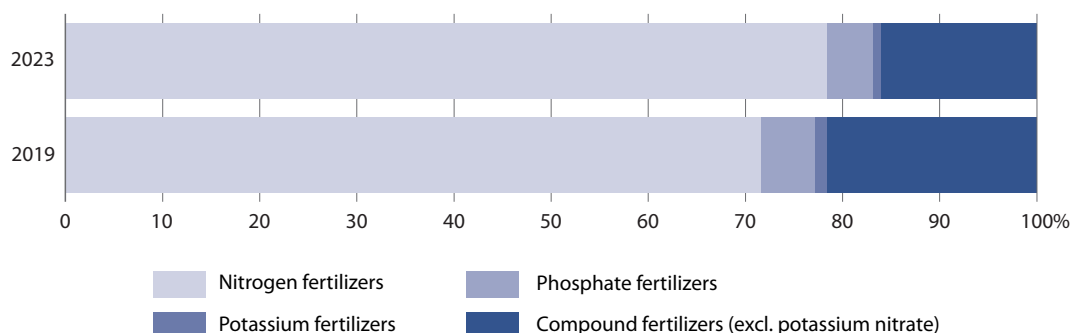
The first group discussed in this division are basic chemicals (technical acids, sodium hydroxide, ammonia). In 2023, the production of more important basic chemicals decreased both in relation to 2019 and 2022. In the analyzed period, the largest decrease was recorded for phosphoric acid (by 52.8%), sulfuric acid (by 16.8%), nitric acid (by 14.7%).

Table 29. Manufactured production of major basic chemicals

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Hydrochloric acid	1000 t HCl	50.7	44.9	43.7	43.5	41.6	82.0	95.7
Sulphuric acid	1000 t H ₂ SO ₄	1 886	1 800	1 865	1 674	1 381	73.2	82.5
Phosphoric acid	1000 t P ₂ O ₅	296	272	272	185	140	47.2	75.7
Nitric acid	1000 t HNO ₃	2 331	2 413	2 460	2 033	1 988	85.3	97.8
Anhydrous ammonia	1000 t NH ₃	2 450	2 646	2 597	2 106	1 800	73.5	85.5
Sodium hydroxide	1000 t NaOH	401	446	435	455	338	84.4	74.4

Artificial fertilizers are among the most important products of the chemical industry, their production is related to food production. In 2022 and 2023, there was a noticeable decline in their production, which was related to the Russian-Ukrainian war, and the increase in natural gas prices, which affected the price of fertilizers, as well as an increase in fertilizer imports from Russia to Poland. In the analyzed period, the structure of fertilizer production changed. The share of nitrogen fertilizers increased at the expense of other groups, primarily compound fertilizers.

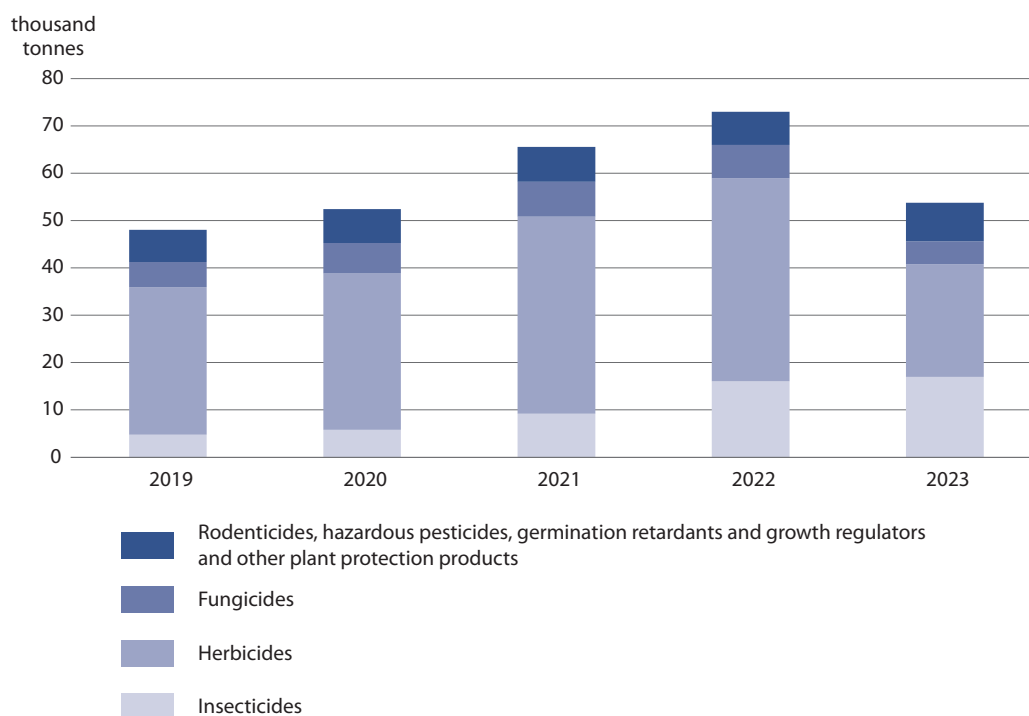
Chart 31. Structure of manufactured production of chemical fertilizers



In 2019–2022, there was an increase in the production of pesticides, especially in 2020, which was due to a significant increase in the production of disinfectants related to the COVID-19 pandemic, which, in addition to pesticides and other agrochemicals, are included in this group of products. In 2023 were produced 103.6 thousand tonnes of disinfectants, by 325.9% more than in 2019.

The highest production of pesticides and other agrochemicals was recorded in 2022, in 2023 there was a decrease in production compared to the previous year (by 26.4%). This group of products is dominated mainly by herbicides (share in 2023 – 44.3%) and insecticides (31.6%).

Chart 32. Manufactured production of pesticides and other agrochemicals

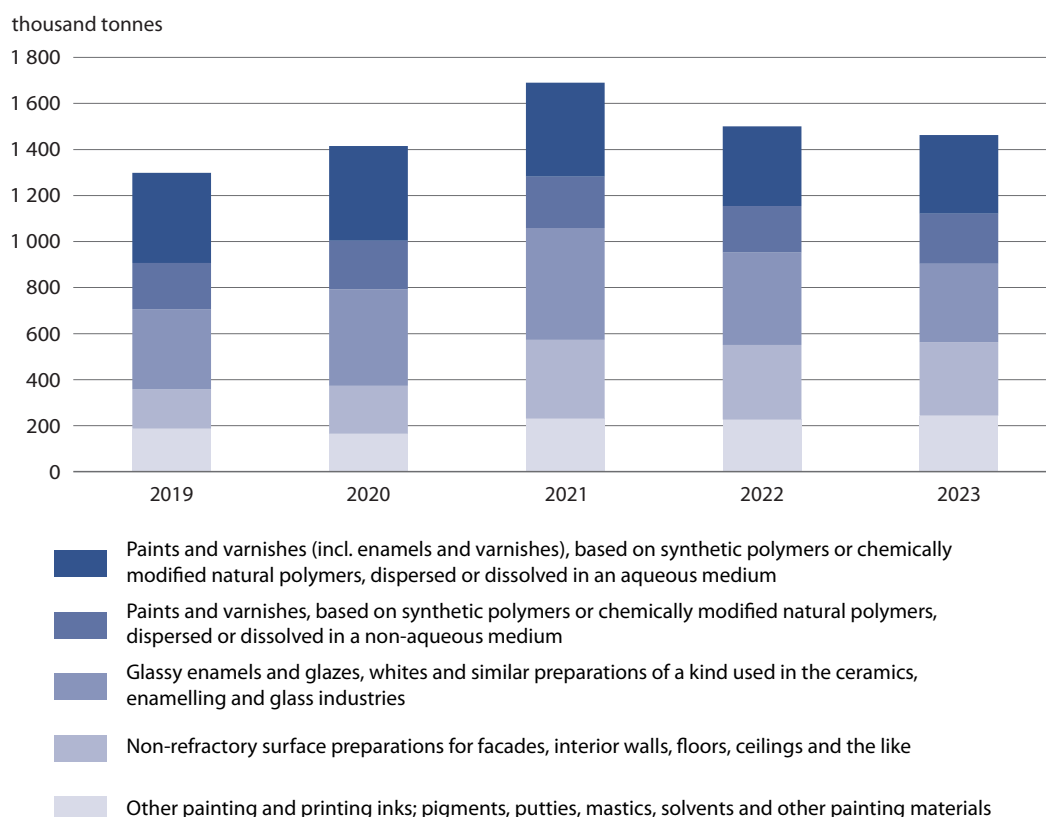


Another important product of the chemical industry is plastics, which are used in all branches of industrial production. Their production in 2023 compared to 2022 r. decreased by 14.8%, among others due to high prices of raw materials (crude oil and natural gas). Among plastics, the highest decrease was recorded for polyvinyl chloride (by 29.0%), which had the largest share in the production of plastics throughout the analyzed period (in 2023 – 9.8%).

Table 30. Manufactured production of selected plastics

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Total plastics	1000 t	3 627	3 695	3 692	3 663	3 119	86.0	85.2
polyethylene	1000 t	383	348	266	348	289	75.6	83.2
polystyrene	1000 t	175	168	183	170	161	91.9	94.5
polyvinyl chloride	1000 t	391	426	374	432	306	78.5	71.0
polypropylene	1000 t	351	351	313	334	292	83.2	87.5
polyamides	1000 t	192	202	240	204	158	82.5	77.5
polyuretanes	1000 t	33.8	30.7	29.7	29.5	30.4	90.1	103.2

The production of paints, varnishes and other painting products grew in the analysed period until 2021, reaching the level of 1,690.2 thousand tonnes. There has been a decline since 2022; however, production still remained at a high level – in 2023 were produced 1,464.5 thousand tonnes of paints, varnishes and other painting products. In this group of products dominated glassy enamels and glazes, encrusted masses (casting masses) and similar preparations of the type used in the ceramics, enamel and glass industries (share of 23.2%) and paints and varnishes (including enamels and varnishes), based on synthetic polymers or chemically modified natural polymers, dispersed or dissolved in an aqueous medium (20.5%).

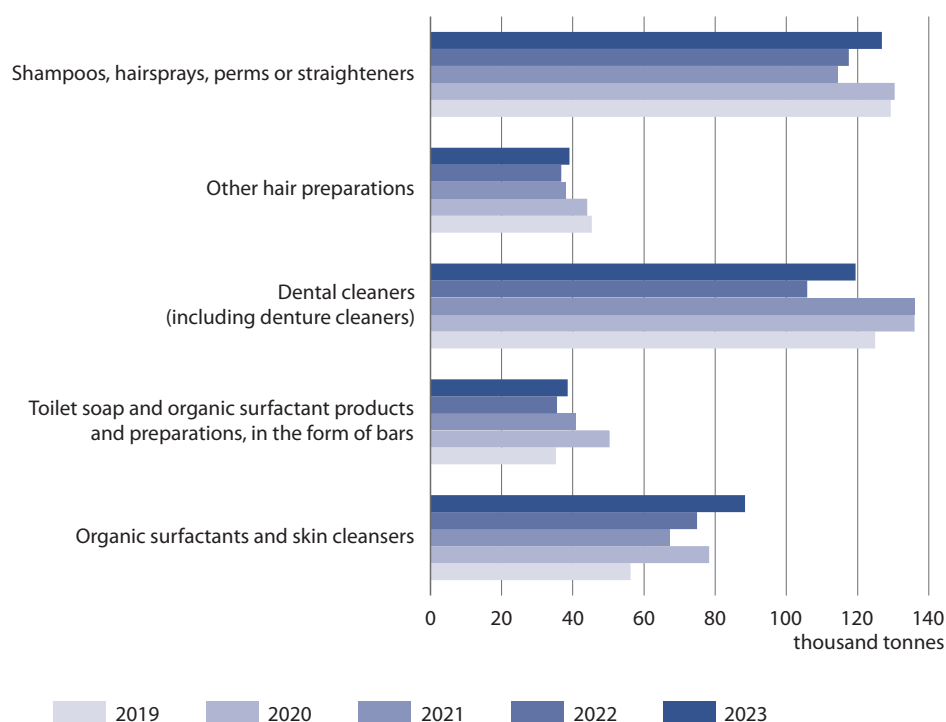
Chart 33. Manufactured production of paints and painting materials

An important position among the products of the chemical industry is occupied by soaps, detergents and washing and cleaning agents. In the analyzed period, their production increased both in relation to 2019 (by 26.1%) and to 2022 (by 4.0%). The largest share in production was taken by detergents and laundry preparations, the production of which in 2023 reached 1,114 thousand tonnes, the highest in the analyzed period.

Table 31. Manufactured production of cleaning products

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Soap	1000 t	263	319	293	318	331	126.1	104.0
soap in the form of bars, pieces, etc.	1000 t	17.1	28.5	33.4	33.8	33.9	197.9	100.3
soap in the form of flakes, granules or powders	1000 t	5.2	11.7	7.3	19.4	11.9	228.5	61.6
soap in other forms (pastes, liquids, pieces of paper or cloth saturated with soap, etc.)	1000 t	149	151	144	155	158	106.5	102.3
Detergents and laundry preparations	1000 t	982	1 088	1 080	1 109	1 114	113.5	100.4

Another important group of products in this division are cosmetics. In this group the largest share in volume of manufactured production had products for hair care (40.2% in 2023) and for cleaning teeth and dentures (28.9%).

Chart 34. Manufactured production of selected toiletries

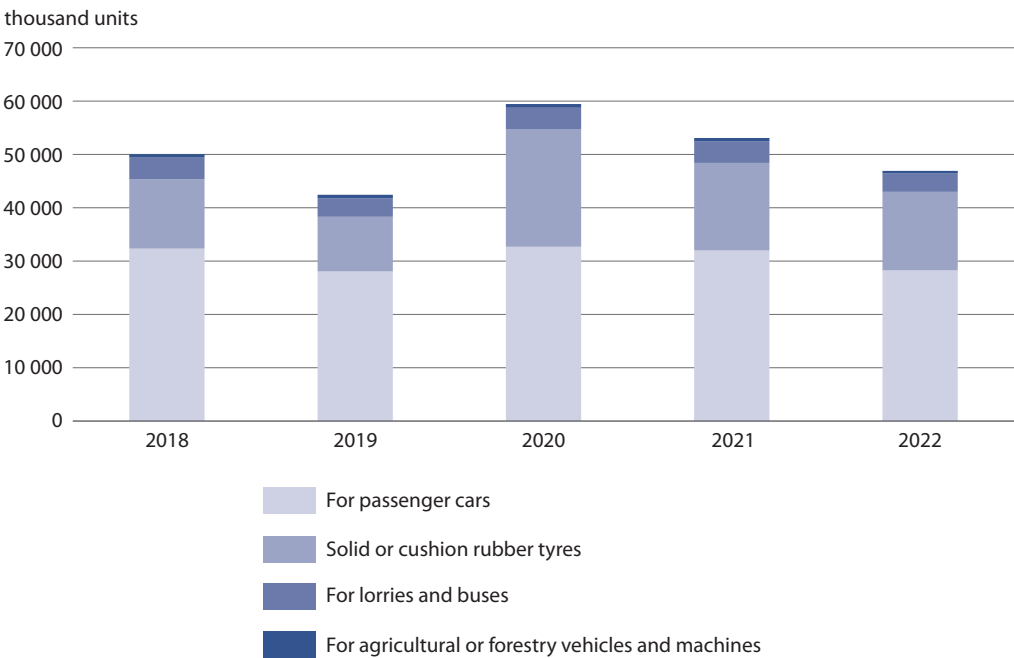
2.6. Rubber and plastic products

In the Rubber and plastic products division, in 2023 there were observed 183 products and product groups; production data were collected for 167 of them.

Rubber is the material from which many everyday objects are made, because it is usually easily molded into various shapes and sizes. More than half of the rubber produced is used to produce car tyres. The remaining part is used for the production of, among others, pipes and hoses, mechanical parts such as fasteners and seals, wipers, rubber plates and rubber floor coverings, insulation of electrical wires in household appliances and electronics, as well as for the production of consumer goods such as footwear, clothing, surgical or household gloves, bathing caps, furniture and toys or gardening tools.

In the total production of tyres in Poland, the production of tyres for passenger cars accounted for 60.2% and in 2023 amounted to 28,233 thousand units. Compared to 2019, there was a decrease in production by 12.7%, and compared to 2022 – by 11.7%.

Chart 35. Manufactured production of tyres by type



In the analyzed period, among other rubber products, the largest group of products were rubber-to-metal bonded articles for tractors and motor vehicles for which the production volume in 2023 reached 62,711 tonnes and compared to 2019 was lower by 7.4%. The production of rubber conveyor belts systematically decreased until 2021, however, in 2022 and 2023, production increased by 11.4% and 5.0%, respectively, which resulted in a production decline of only 3.0% over the entire analyzed period. The production of tubes, pipes and hoses of rubber other than hard rubber in 2023 was at a similar level to 2019 and amounted to 48,303 tonnes. The production of seals of vulcanised rubber systematically increased to 2021, in 2022 was observed a decrease in production by 8.4% compared to the previous year, and in 2023 – a slight increase by 2.2% compared to 2022. Compared to 2019, there was an increase in production by 2.4%.

Table 32. Manufactured production of selected rubber goods

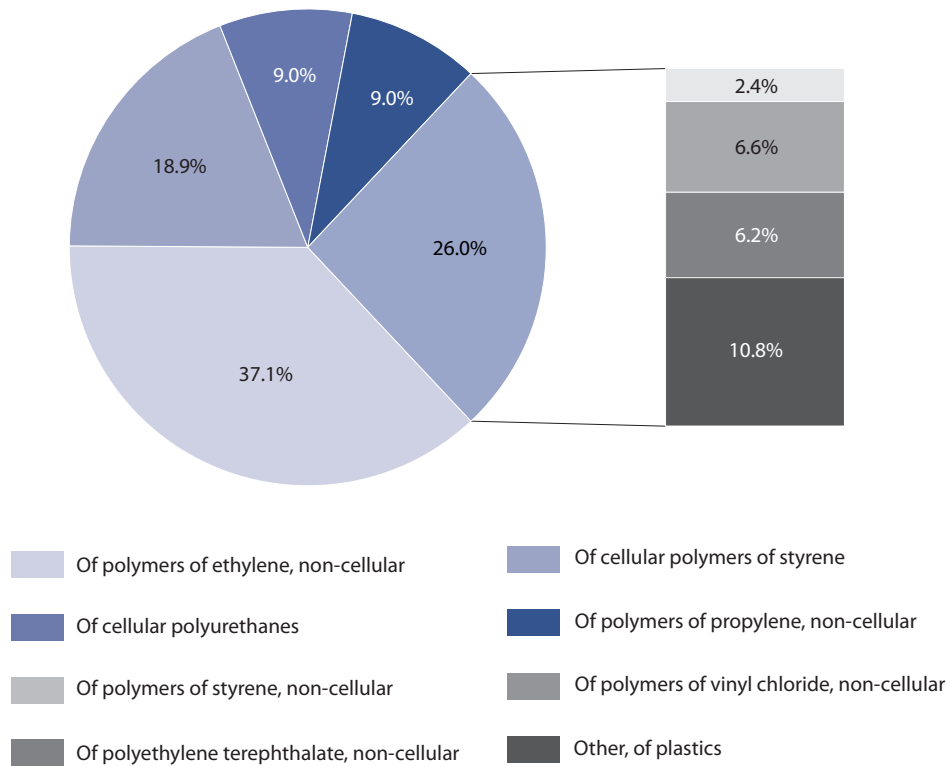
Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Plates, sheets and strip of vulcanised rubber	tonnes	21 610	17 928	19 680	11 991	11 342	52.5	94.6
Tubes, pipes and hoses, of rubber other than hard rubber	tonnes	48 111	47 037	49 306	46 441	48 303	100.4	104.0
Rubber conveyor belts	tonnes	54 721	47 326	45 377	50 547	53 079	97.0	105.0
Rubberized textile fabrics, except tyre cord fabric	tonnes	2 087	1 393	747	525	664	31.8	126.5
Hygienic or pharmaceutical articles of rubber (excluding sheath contraceptives)	tonnes	620	520	467	451	345	55.7	76.5
Seals, of vulcanised rubber	tonnes	56 793	59 574	62 110	56 878	58 156	102.4	102.2
Rubber-to-metal bonded articles for tractors and motor vehicles	tonnes	67 754	57 156	64 712	59 435	62 711	92.6	105.5
Moulded rubber articles for tractors and motor vehicles	tonnes	21 034	17 343	19 747	22 079	22 387	106.4	101.4

Over the last dozen or so years, the plastics market has developed significantly, and most plastic products are supplied to the construction industry (in structures, insulation or as finishing elements). Plastic products are increasingly replacing traditional building materials, because the structures made of them are lighter, easier to assemble, do not require anti-corrosion protection or painting, and their use reduces labor consumption, which allows to significantly reduce construction costs.

Plastic plates are used, among others, for: thermal insulation on walls, roofs and floors – mainly polystyrene or polyurethane plates. Polycarbonate plates are used in roof glazing and facades, thanks to their high light transmittance and impact resistance.

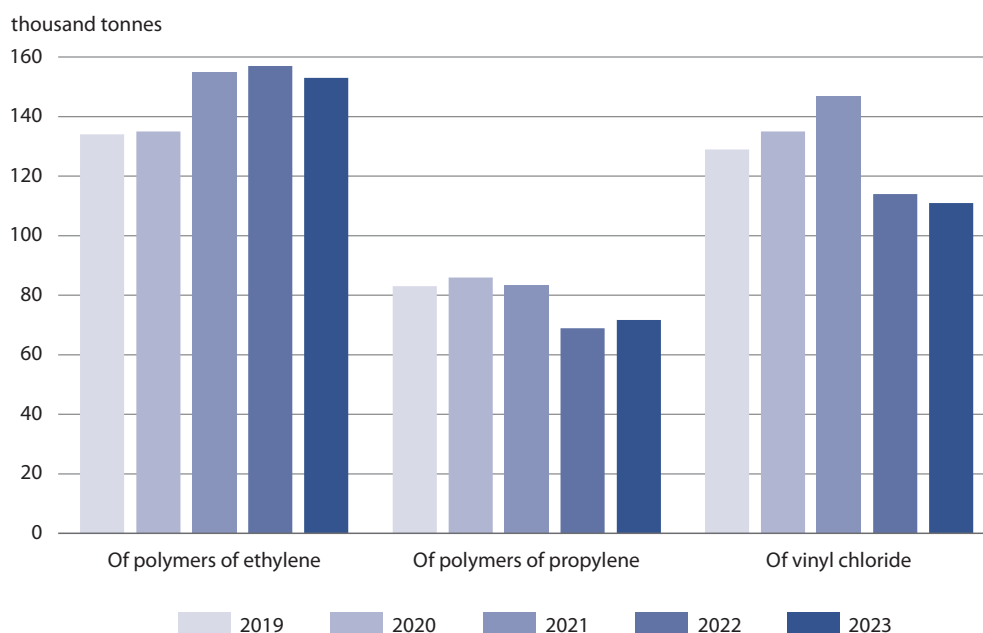
In the analyzed period, the production of plastics plates, sheets, films, foils and strips systematically increased and in 2023 reached 1,824 thousand tonnes, compared to 2019 increasing by 8.7%. The largest share in this assortment group was held by plates, sheets, films, foils, tapes and strips of non-cellular ethylene polymers – 37.1% in 2023. Their production remained at a similar level compared to 2019.

Chart 36. Structure of manufactured production of plates, sheets, film, foil and strip by types in 2023



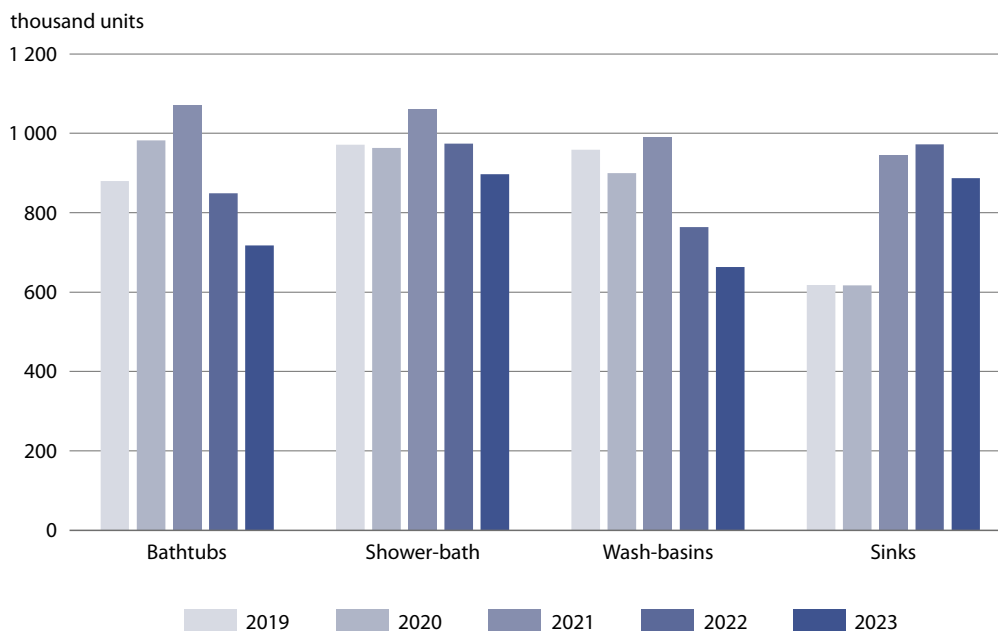
Another group of plastic products that are widely used in construction are pipes. Pipes of polyvinyl chloride or of polyethylene, valued for their strength and flexibility, are used, among others, in water supply and sewage systems due to their corrosion resistance, lightness and ease of installation.

The production of plastic pipes, tubes and hoses in 2023 reached the level of 483,882 tonnes and compared to 2022 was lower by 11.2%, and compared to 2019 – by 4.7%. Among plastic pipes, the largest share is pipes of ethylene polymer – 31.7%, while the share pipes of polyvinyl chloride is slightly smaller – 23.1%.

Chart 37. Manufactured production of selected plastic pipes

The most typical plastic construction products include plastics sanitary products, such as bathtubs, washbasins, lavatory pans and covers, flushing cisterns, as well as plastic windows and doors.

During the analyzed period, the production of plastic sanitary products increased until 2021, when the highest level of production was recorded for most products from this group. In 2022 and 2023, there was a decrease in production, respectively by 26.1% and 15.2%, compared to the previous year, but compared to 2019, production in 2023 increased by 45.5%. In 2023, the highest production was recorded for plastic shower-bath – 896,658 units (a decrease by 8.0% compared to the previous year). Slightly fewer plastic sinks were produced – 887,361 units (a decrease by 8.7% compared to 2022), and the production of plastic bathtubs and washbasins amounted to 718,389 and 663,483 units, respectively (a decrease by 15.3% and by 13.1% respectively compared to the previous year).

Chart 38. Manufactured production of selected plastic sanitary ware

During the analyzed period, the production of plastic windows increased systematically until 2022, in 2023 was observed a decrease in production compared to the previous year (by 10.4%). A similar trend was recorded in the production of plastic doors – in the analyzed period, the increased of production was observed until 2022, with the exception of 2021, when was recorded a decrease by 8.4% compared to the previous year. In 2023 were produced 363,439 units of plastic doors, which means a decrease by 17.6% compared to the previous year, and a decrease by 5.8% compared to 2019.

Table 33. Manufactured production of woodpulp and paper

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Plastic windows	1000 units	8 645	8 830	9 568	9 618	8 616	99.7	89.6
Plastic doors	1000 units	386	453	415	441	363	94.2	82.4

2.7. Non-metallic minerals and non-metallic mineral products

Products made of non-metallic mineral products include, among others: building stones, glass products, refractory products, ceramic building materials, porcelain and ceramic products, cement, lime and gypsum products, concrete products for construction purposes and abrasive products.

Among the stones most commonly used for construction purposes is crushed stone of a kind used for concrete aggregates; for roadstone and for other construction use. In the analysed period, an increase in production for this product was recorded in 2022 and 2023 (by 2.3% and 5.2%, respectively). In 2023, production amounted to 80,392 thousand tonnes, which was an increase of 2.9% compared to 2019.

In construction it is also commonly used gravel; pebbles; shingle and flint of a kind used for concrete aggregates; for road metalling or for railway or other ballast. Over the last five years, the increase in production of this product was recorded only in 2021 (by 2.1%). In 2023, production amounted to 29,431 thousand tonnes and was lower both in relation to 2022 and 2019 (by 4.4% and 41.3%, respectively).

One of the most commonly used raw materials in construction is also natural sand, where an increase in production was reported in 2019–2021. In 2022 and 2023, production decreased by 21.1% and 10.1%, respectively, while in the entire analyzed period it decreased by 25.3%.

Chart 39. Manufactured production of selected non-metallic mineral products

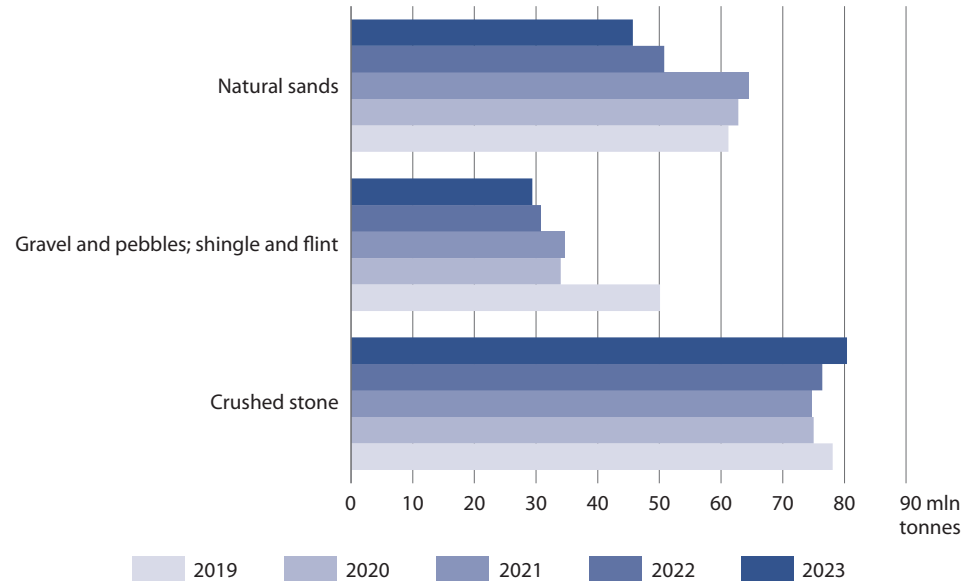


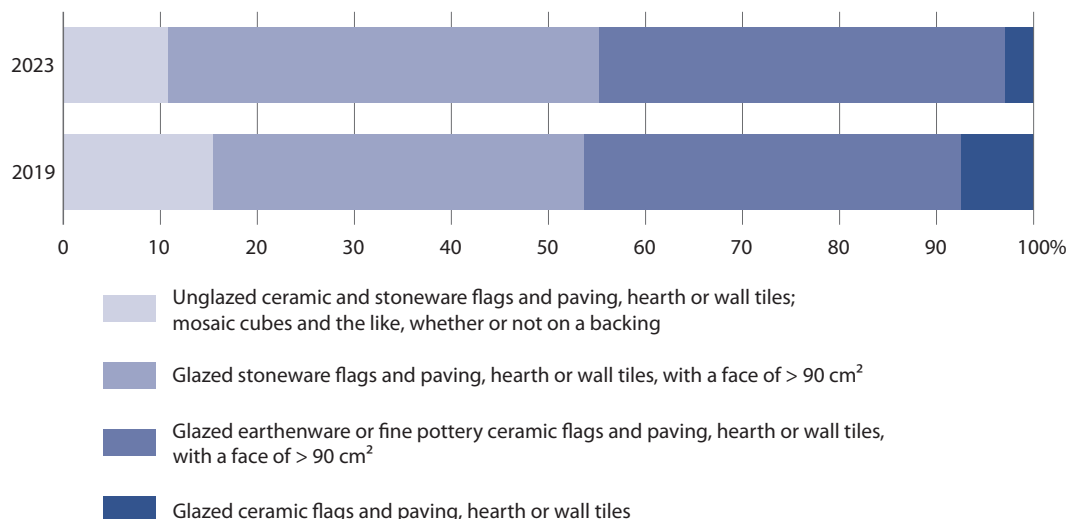
Table 34. Manufactured production of selected building materials use in construction

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Float glass and surface ground or polished glass	1000 m ²	144 360	165 726	177 063	177 964	166 495	115.3	93.6
Non-refractory clay roofing tiles	1000 units	127 665	148 199	156 059	175 653	110 899	86.9	63.1
Bricks	m ³	1 398 007	1 236 520	1 260 819	1 209 511	881 505	63.1	72.9
Lime	1000 t	1 777	1 677	1 832	1 670	1 283	72.2	76.8
Plasters	1000 t	1 460	1 511	1 855	1 712	1 439	98.6	84.1
Structural-wall tiles of calcium-silicate	1000 t	3 056	2 797	3 118	2 831	2 238	73.2	79.0
Ready-mixed concrete	1000 t	58 765	51 690	55 056	56 960	51 094	86.9	89.7
Factory made mortars	1000 t	5 683	5 793	5 325	4 799	4 236	74.5	88.3
Building paper	1000 m ²	72 410	73 859	74 788	77 463	72 248	99.8	93.3
Products of heat insulating of mineral wools	tonnes	552 703	619 950	767 444	714 339	510 520	92.4	71.5

In construction, the most commonly used type of glass is float glass and surface ground or polished glass, in sheets, but not otherwise worked. In 2019–2022, a systematic increase in the production of this product was observed, while in 2023 its production decreased (by 6.4%) in relation to 2022 (however, in the entire analyzed period, a production increase of 15.3% was recorded).

Ceramic tiles are also a product commonly used in the construction industry, the production of which increased in 2019–2021, and then decreased in 2022–2023 (by 9.4% and 13.3%, respectively) – in the entire analyzed period of 2019–2023, a decrease in production was recorded (by 10.9%). In 2023, the highest share of production was recorded for glazed stoneware flags and paving, hearth or wall tiles, with a face of > 90 cm² (44.4%). The production of this product decreased (by 7.4%) in relation to 2022, and increased (by 3.3%) in relation to 2019. The second largest product in terms of share in the production of ceramic tiles in 2023 were glazed earthenware or fine pottery ceramic flags and paving, hearth or wall tiles, with a face of > 90 cm² (share – 41.8%). Their production decreased both compared to 2022 (by 17.7%) and to 2019 (by 3.9%).

Chart 40. Structure of manufactured production of ceramic tiles and flags

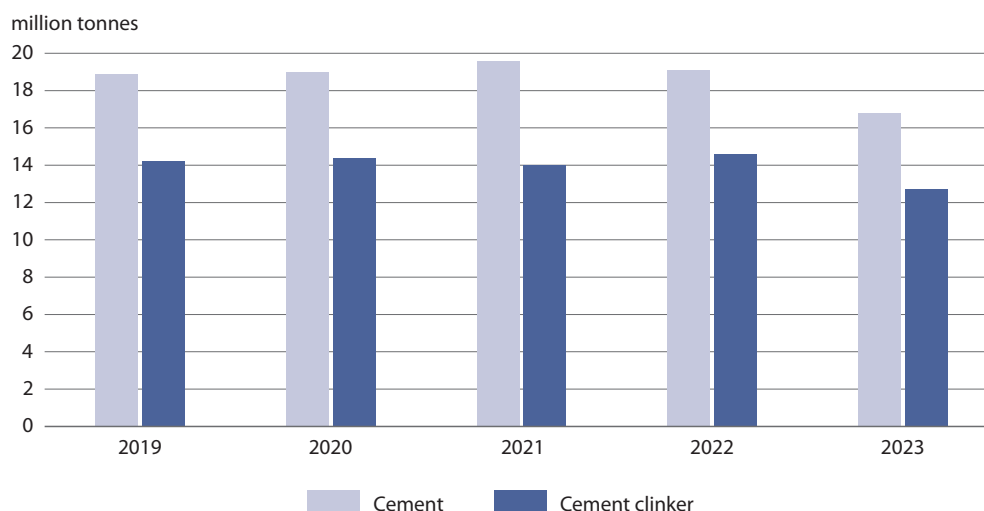


The production of non-refractory clay roofing tiles, which are of significant importance in construction, increased in the years 2019–2022. In 2023, their production decreased and was lower by 36.9% compared to 2022 and by 13.1% compared to 2019.

One of the most common materials used in construction are bricks, but the increase in the production of this product over the last 5 years was recorded only in 2021 (by 2.0%). In 2023, production reached 881,505 m³ and was lower (by 27.1%) compared to the previous year and compared to 2019 (by 36.9%).

An important product, one of the basic building materials, is cement. In the years 2019–2023, an increase in production was recorded only in 2020 and 2021 (by 0.5% and 3.0%, respectively). In 2023, production amounted to 16,785 thousand tonnes, which resulted into a decrease (by 11.9%) in relation to the previous year and (by 11.4%) to 2019.

Production of cement clinker, used mainly for cement production, increased in 2020 and 2022 (by 1.3% and 4.3%, respectively). In 2023, it decreased and was lower compared to 2022 and 2019 (by 13.3% and 10.7%, respectively).

Chart 41. Manufactured production of cement and cement clinker

Lime production – one of the most important construction materials – increased only in 2021 (by 9.2% compared to the previous year) in the presented period. In 2023, it reached 1,283 thousand tonnes and was lower than both in 2022 and 2019 (by 23.2% and 27.8%, respectively). The highest share in total lime production in 2023, similarly to 2019, was reported for quicklime (share in 2023: 86.2%). Quicklime production decreased by 22.9% compared to 2022, and by 29.2% in the entire analyzed period.

Another popular construction product is plasters, the production of which increased in the analyzed period until 2021. In 2022 and 2023, a decrease in production was recorded (by 7.7% and 15.9%, respectively). Compared to 2019, the production of plasters decreased by 1.4% in 2023.

An equally common building material are structural-wall tiles of calcium-silicate, the production of which increased over the last five years only in 2021 (by 11.5% compared to 2020). In 2023, production reached 2,238 thousand tonnes and was lower by 21.0% compared to the previous year and by 26.8% compared to 2019.

The production of ready-mixed concrete fluctuated in the analyzed period – production increased in 2021 and 2022 (by 6.5% and 3.5%, respectively). In 2023, production decreased compared to the previous year (by 10.3%) and to 2019 (by 13.1%)

An increase in the production of factory made mortars compared to the previous year was recorded only in 2020 (by 1.9%). In 2023, production amounted to 4,236 thousand tonnes and was lower both in relation to 2022 and 2019 (by 11.7% and 25.5%, respectively).

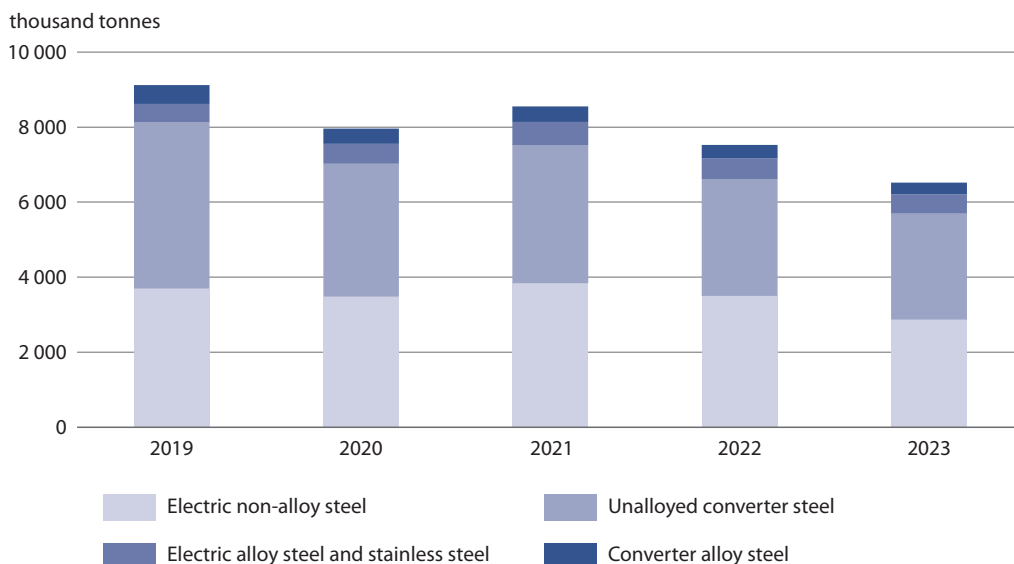
Among construction materials, building paper plays a significant role, with an increase in production recorded in 2020–2022. In 2023, building paper production decreased and was 6.7% lower than in the previous year. In the entire analyzed period, production decreased slightly (by 0.2%).

The increase in the production of products of heat insulating of mineral wools over the last 5 years was recorded in 2019–2021. The years 2022–2023 brought a decrease in production (by 6.9% and 28.5%, respectively), as a result of this decrease, in 2023, compared to 2019, production decreased by 7.6%.

2.8. Metal and products of metal

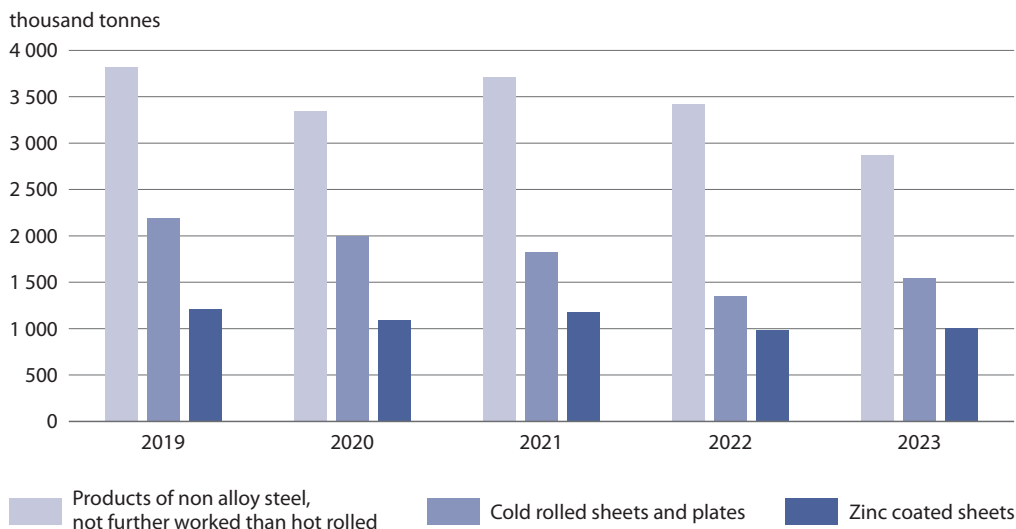
The Metals division includes metallurgy products such as steel, steel tubes, steel products, and precious metals. In 2023, statistical observation covered 402 products, and production was reported for 302 products.

Chart 42. Manufactured production of crude steel



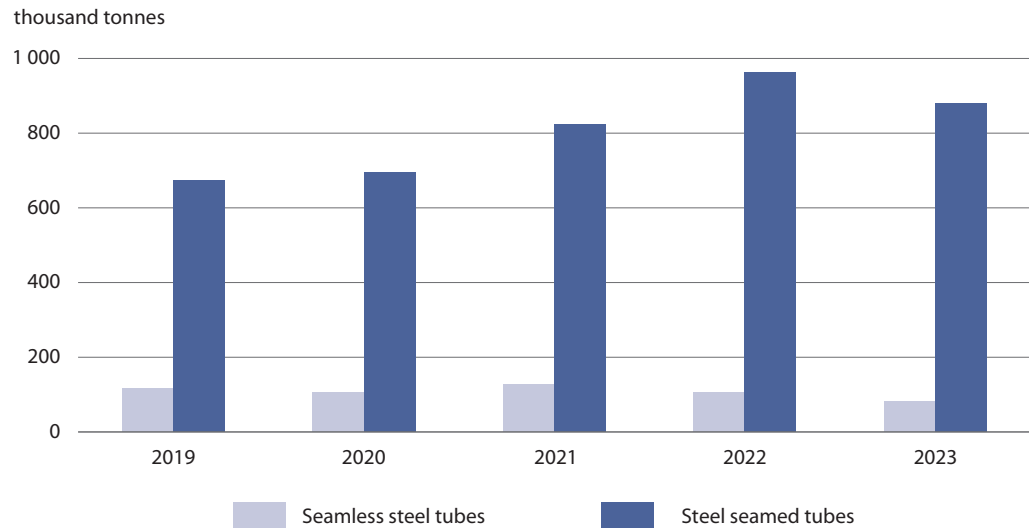
Steel is an alloy consisting mainly of iron and carbon, which gives this material high mechanical strength. Steel is widely used in the economy, from the construction industry to machinery, automotive and steel tools. In 2023, crude steel production amounted to 6,522 thousand tonnes and was the lowest production level in the entire analyzed period. In 2019, the highest production level was recorded – 9,122 thousand tonnes. In the period under review, the most was produced of electric non-alloy steel (share of 43.9% in steel production in 2023) and unalloyed converter steel (43.3%). In 2023, production of electric non-alloy steel amounted to 2,866 thousand tonnes and was 22.4% less than in 2019, while unalloyed converter steel was produced at 2,825 thousand tonnes, which is 36.3% less than in 2019. The least amount of stainless steel was produced – 0.3 thousand tonnes in 2023 (a decrease of 60.7% compared to 2019) – stainless steel is mainly used in household appliances, such as automatic washing machines.

Chart 43. Manufactured production of rolled products



Products of non-alloy steel, not further worked than hot rolled, cold rolled sheets and plates, zinc coated sheets are used in construction, automotive and machinery industries. In 2023, production of flat stainless steel products amounted to 2,869 thousand tonnes, cold rolled sheets and plates – 1,543 thousand tonnes and zinc coated sheets 1,004 thousand tonnes. The production of products of non-alloy steel, not further worked than hot rolled was the highest in 2019 – 3,827 thousand tonnes, as well as the production of cold rolled sheets and plates – 2,188 thousand tonnes. For galvanized sheets, the lowest production was recorded in 2022 – 981 thousand tonnes. The most significant decrease compared to 2019 was recorded in the production of cold rolled sheets and plates (by 29.5%).

Chart 44. Manufactured production of steel tubes



Steel seamless tubes are mainly used in hydraulic, gas and heating installations. Steel seamed tubes are used in sanitary, rainwater and sewage installations. In the production of steel tubes, steel seamed tubes definitely predominated – in 2023, production amounted to 878 thousand tonnes, while the production of seamless tubes – 81.7 thousand tonnes. The largest production of steel seamed tubes was recorded in 2022 – 965 thousand tonnes, while seamless tubes – in 2021 (128 thousand tonnes).

Wire of stainless steel and wire of other alloy steel are used in construction and in the production of other metal products, such as fencing mesh. In 2023, the share of wire of stainless steel in the production of steel wire was 13.8%, while the share of wire of other alloy steel was 86.2%. Compared to 2019, the production of wire of other alloy steel increased by 21.3%, the production of wire of stainless steel decreased by 3.3%.

Aluminum wire is mainly used in the production of a cheaper electrical conductor (than the more expensive copper wire). Aluminum wire production in 2023 reached the highest level (1,679 tonnes) in the entire analyzed period, and the lowest (1,347 tonnes) in 2019 – an increase of 24.6%.

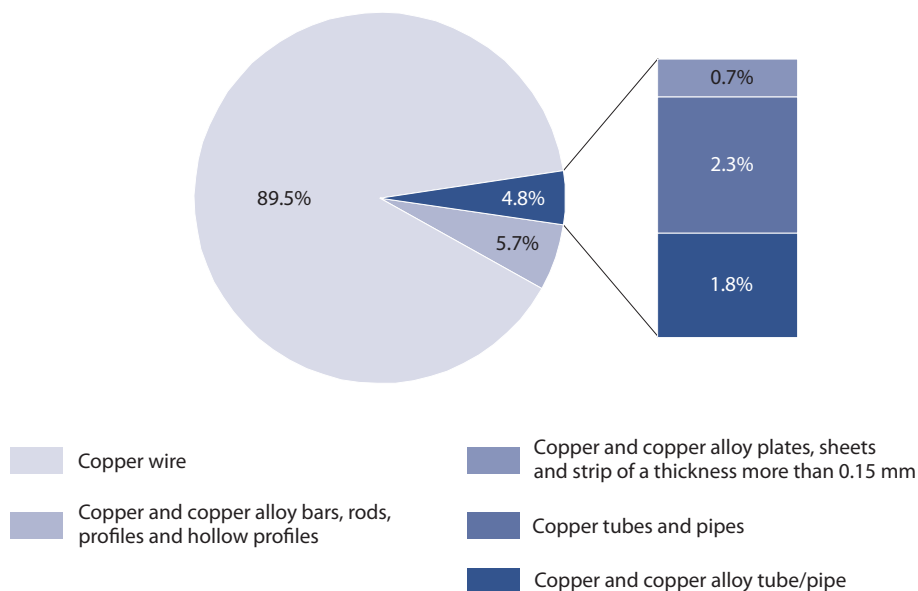
Table 35. Manufactured production of aluminium plates

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Aluminium plates, sheets and strip, of a thickness > 0,2 mm	tonnes	186 869	184 452	197 222	171 750	96 353	51,6	56,1

Aluminum plates are widely used in the automotive industry due to the 30% lower weight of aluminum compared to steel, which translates into the production of lighter cars and bicycles (in the case of cars, this is also associated with reduced fuel consumption). For aluminum plates, the largest production was

in 2021 – 197 thousand tonnes. In 2023, 96.4 thousand tonnes of aluminum sheets were produced, 43.9% less compared to the previous year. Compared to 2019, the production of aluminum sheets decreased by 48.4%.

Chart 45. Structure of manufactured production of copper products



Copper products, such as flat bars, wire, sheets, foil, pipes, and pipe connectors, are highly resistant to atmospheric factors and are very good conductors of electricity and heat. They are used in building and finishing structures as the highest quality materials available on the construction market. In Poland, in 2023, the largest share in the production of copper products was held by copper wire – 89.5%, which increased by 1.8 p.p. compared to 2019. The second group of products with the largest share were copper and copper alloy bars, rods, profiles and hollow profiles – 5.7% in 2023 (6.6% in 2019).

Among metal products, an important group of products are products used in construction. In the group of metal building elements, the largest share in the production was made of metal structures and their elements, like prefabricated buildings; bridges and bridge-sections; towers and lattice masts; equipment for scaffolding, shuttering, propping/pit-propping; cylindrical structures, elements made of profiled or flat sheet; maritime and waterway structures like weirs, sluices, lock-gates, landing stages, fixed docks, the production of which in 2023 amounted to 2,965,590 tonnes – compared to 2019 there was an increase of 21.4%, despite a decrease by 9.8% in comparison to 2022.

Table 36. Manufactured production of metal construction

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Prefabricated buildings (including modular building units), of iron or steel	tonnes	123 646	119 313	147 408	175 968	172 647	139.6	98.1
Prefabricated buildings, of aluminium	tonnes	6 176	4 375	5 494	5 371	6112	99.0	113.8
Iron or steel bridges and bridge-sections	tonnes	68 389	65 257	86 120	80 244	62915	92.0	78.4
Iron or steel towers and lattice masts	tonnes	145 614	141 545	165 834	173 945	173 850	119.4	99.9

Table 36. Manufactured production of metal construction (dok.)

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Iron or steel equipment for scaffolding, shuttering, propping/pit-propping including pit head frames and superstructures, extensible coffering beams, tubular scaffolding and similar equipment	tonnes	565 714	497 361	531 874	533 094	520 357	92.0	97.6
Other structures principally of sheet like cylindrical steel structures, building elements made of profiled or flat sheet metal	tonnes	530 150	544 091	623 828	675 231	643 634	121.4	95.3
Structures and parts of structures of iron or steel, n.e.c.; weirs, sluices, lock-gates, landing stages, fixed docks and other maritime and waterway structures, of iron or steel	tonnes	1 533 654	1 433 722	1 558 156	1 590 204	1 343 561	87.6	84.5
Aluminium structure and parts of structures, n.e.c.	tonnes	58 398	54 623	68 939	5 207	42 514	72.8	81.7

The second subgroup, which was significant in terms of production quantity, are doors, windows and their frames, as well as door thresholds made of cast iron or steel – 75,345 tonnes in 2023 (a slightly decrease by 1.8% compared to the previous year, and compared to 2019 – a decrease by 11.1%). The production of steel doors alone in 2023 amounted to 716,335 units, but in comparison to 2019 there was an decrease by 5.6%.

In third place in the group of metal structural elements was the production of doors, windows and their frames, as well as aluminum door thresholds (50,764 tonnes – a decrease by 8.9% compared to the previous year, and compared to 2019 – decrease by 2.1%). In this group of products, aluminum doors dominated, with production in 2023 amounting to 233,760 units and compared to 2019 increased by 30.6%.

Table 37. Manufactured production of metal windows and doors

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Steel doors	unit	758 463	741 242	694 666	666 071	716 335	94.4	107.5
Steel windows	unit	20 883	21 797	16 812	17 806	19 882	95.2	115.1
Aluminium doors	unit	179 021	179 104	183 937	207 685	233 760	130.6	112.8
Aluminium windows	unit	218 580	239 203	237 522	229 039	226 915	103.8	99.1

Another group of metal products used in construction are radiators for central heating and central heating boilers. In 2020 there was a decrease in the production of central heating boilers compared to the previous year (by 4.3%). In 2021 production significantly increased in comparison to 2020 (by 24.0%), as well as to a small extent in 2022 (by 2.3%). In 2023 the production of central heating boilers amounted to 302,498 units and in comparison to 2019 decreased by 25.0%. The production of central heating radiators in 2023 was 75,862 tonnes and compared to 2022 it decreased by 20.2%; compared to 2019 it decreased by 45.1%.

Table 38. Manufactured production of radiators and central heating boilers

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Radiators for central heating, of iron or steel	tonnes	138 232	123 521	135 878	95 012	75 862	54.9	79.8
Central heating boilers	unit	403 300	385 968	478 666	489 865	302 498	75.0	61.8

In the group of other finished metal products applicable in construction can be found, among others: sanitary ware; welded grill, netting and fencing; base metal sign-plates, name-plates, address-plates and similar plates, numbers, letters and other symbols; non-mechanical ventilators, guttering, hooks and similar articles used in the building industry.

In the analyzed period production of welded grill, netting and fencing systematically increased until 2022. In 2023 there was a significant drop in production – by 13.3% compared to the previous year, but compared to 2019 – an increase by 34.1%. In 2020 was noted a decrease of production stainless steel sinks and wash basins (by 19.6%) compared to do 2019 r., in 2021 there was an increase in production (by 20.8%) compared to the previous year, and in 2022 and 2023 – a decrease again (respectively by 27.2% and by 24.6% compared to the previous year).

Table 39. Manufactured production of selected fabricated metal products

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Stainless steel sinks and wash basins	unit	313 174	251 770	304 044	221 207	166 792	53.3	75.4
Welded grill, netting and fencing manufactured from wire of a diameter of ≥ 3 mm	tonnes	65 019	65 089	67 666	65 172	59 681	91.8	91.6
Welded grill, netting and fencing manufactured from wire of a diameter of < 3 mm	tonnes	57 382	97 286	123 998	124 000	104 418	182.0	84.2
Woven, not welded, wire mesh, grill, netting and fencing	tonnes	31 327	28 291	34 778	27 409	25 145	80.3	91.7
Woven, not welded, wire mesh, grill, netting and fencing, plastic coated	tonnes	36 747	35 627	32 556	30 252	23 130	62.9	76.5
Iron or steel non-mechanical ventilators, guttering, hooks and similar articles used in the building industry	tonnes	21 726	22 711	24 810	19 581	32 873	151.3	167.9
Base metal sign-plates, name-plates, address-plates and similar plates, numbers, letters and other symbols (excluding illuminated)	tonnes	4 812	2 116	2 854	2 315	2 247	46.7	97.0

2.9. Computer, electronic and optical products

The computer, electronics and optical industry comprises the production of electronic components and boards, computers and peripheral equipment, communication equipment, consumer electronics, measuring, testing and navigation instruments, watches and clocks, irradiation, electromedical and electrotherapeutic equipment, optical instruments and photographic equipment and magnetic and optical media, not recorded. In the annual survey for 2023, 245 products from this industry were surveyed, and manufactured production was reported for 180 products. The most significant part of them are products classified as consumer electronic equipment, accounting for 51.0% of the production value of the products in question in 2023.

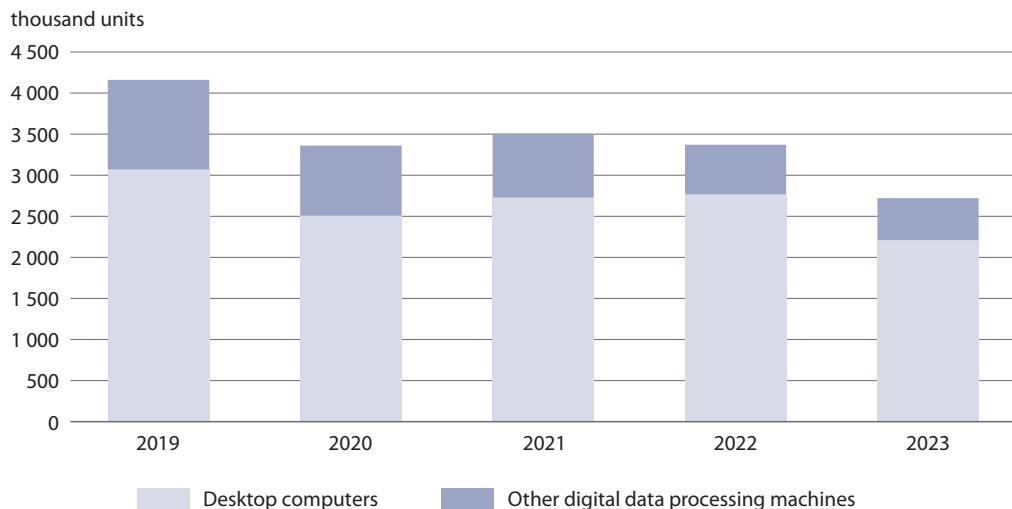
Among consumer electronics, the largest in terms of value is the production of television receivers. After a slight decrease in 2020, the production of television receivers increased significantly in 2021 – by 15.7%. In subsequent years, the volume of production decreased and in 2023 was 14.9% lower than in the first year of the period in question. The second type of consumer electronics in terms of production value is radio receivers. In the production of radio receivers, the increase continued until 2021, when it reached a level 145.5% higher than in 2019. In 2022, production decreased significantly – to a level lower than in 2020. In 2023, there was another rise and production exceeded the level of 2019 by 84.8%.

Table 40. Manufactured production of television receivers and radio receivers

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
TV receivers including monitors	1000 units	16 963	16 707	19 326	17 178	14 438	85,1	84,0
Radio receivers	1000 units	2 528	4 290	6 206	4 025	4 673	184,8	116,1

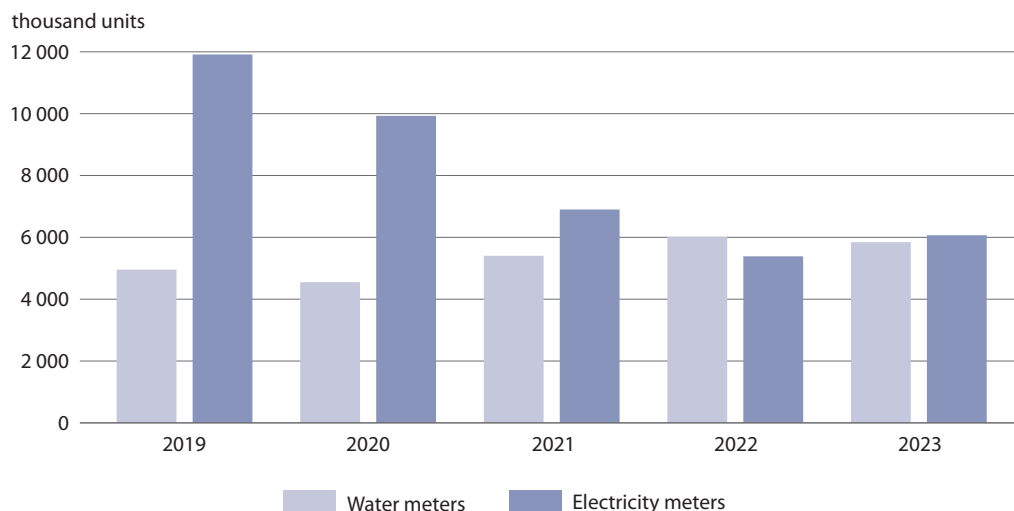
Another important group of products is digital data processing machines. Their manufactured production decreased in 2020 by 19.2%. The main cause of the decrease was the COVID-19 pandemic and the associated difficulties in component supply and reduced orders. In 2021 a slight production increase was recorded but in 2022 and 2023 there were further declines and in the last year of the analysed period production was at a level lower than in 2019 by 34,6%. Throughout the period under review, desktop computers accounted for the largest share among various types of digital machines for data processing. Their production decreased by 28.1% in this period. The decrease in production of other types of digital data processing machines was greater and amounted to 52.9%.

Chart 46. Manufactured production of data processing machines



Another important group of products in the discussed production area are measuring, testing and navigation instruments. These include utility meters, among others. Production of electricity meters decreased steadily until 2022, from almost 12 million units to 5.4 million in 2022. In 2023, there was some growth, but production remained at a much lower level – by 48.9% – than at the beginning of the analyzed period. The trend in production of water flow measuring devices was different. After a decrease in production in 2020 by 8.2% related to the beginning of the Covid-19 pandemic, there were two years of growth. In 2023, production decreased slightly by 2.8%. Over the entire analyzed period, there was an increase of 18.0%.

Chart 47. Manufactured production of water and electricity meters



2.10. Machinery and equipment

This subchapter presents products belonging to divisions: Electrical equipment and Machinery and equipment n.e.c.

The Electrical equipment division includes, among others, electric motors, generators, transformers and electricity distribution and control apparatus, batteries and accumulators, insulated wires and conductors, as well as wiring devices, electric lighting equipment and household appliances. In the annual survey for 2023, 309 products were statistically observed in this division, and manufactured production was reported for 270 products.

In the analysed period, the production of electric motors and generators (excluding traction motors) decreased until 2020, but in the following years it increased and in 2023 amounted to 66,981 thousand units, which translated into an increase compared to both 2019 and 2022, by 54.4% and 38.9%, respectively. An increase in production compared to 2019 and 2022 was also recorded in the production of lead-acid accumulators used for starting piston engines for motor vehicles (by 6.8% and 13.2%, respectively) and insulated wires and conductors (by 2.4% and 6.7%, respectively), and among them in particular optical fibre cables (by 94.1% and 117.5%, respectively). In 2023, the production of insulated wires and conductors reached 481 thousand tonnes, of which 47.8% was the production of other electric conductors, for a voltage not exceeding 1,000 V, not fitted with connectors.

In the period under review, the production of lithium-ion accumulators increased by 69.3% compared to 2019, while compared to 2022, it decreased by 24.8%. Power banks were separated in the survey from lithium-ion accumulators in 2022 and their production increased in 2023 by 20.8% compared to 2022 and reached 4,491 thousand units.

A decrease in manufactured production, both compared to 2019 and 2022, was recorded for primary cells and primary batteries (by 39.3% and 32.1%, respectively) and electric conductors used for telecommunications (by 23.4% and 11.8%, respectively).

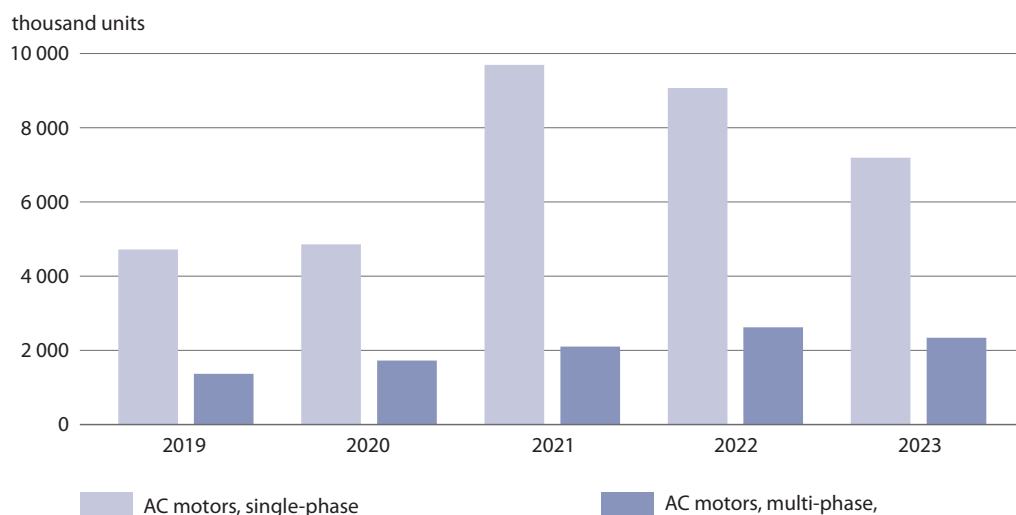
Table 41. Manufactured production of selected electrical equipment

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Electric motors and generators (excl. traction motors)	MW	18 914	13 399	12 194	25 960	24 844	131.4	95.7
	1000 units	43 385	31 973	42 442	48 211	66 981	154.4	138.9
Primary cells and primary batteries	1000 units	972 804	987 345	1 039 887	868 932	590 321	60.7	67.9
Lead-acid accumulators used for starting piston engines for motor vehicles	1000 units	6 168	6 410	7 531	5 819	6 588	106.8	113.2
Lithium-ion accumulators	1000 units	9 347	22 373	24 836	21 034	15 827	169.3	75.2
Power banks ^a	1000 units	.	.	.	3 718	4 491	.	120.8
Insulated wires and conductors	tonnes	469 620	423 968	442 739	450 943	481 103	102.4	106.7
Optical fibre cables	tonnes	20 726	18 248	17 669	18 490	40 220	194.1	217.5
Electric conductors used for telecommunications	tonnes	15 122	12 375	14 438	13 145	11 588	76.6	88.2
Power cables	tonnes	65 346	63 958	67 010	76 040	74 601	114.2	98.1

^a Data under statistical observation since 2022.

In the analysed period, among transformers were mainly manufactured other transformers, having a power handling capacity not exceeding 16 kVA, which in 2023 accounted for 99.5% of the total production of transformers, whereas the remaining 0.5% was the production of liquid dielectric transformers (0.3%) and other transformers, having a power handling capacity exceeding 16 kVA (0.2%).

In the period under review, the majority of the production of AC motors were single-phase motors, accounting for 75.5% in 2023. In 2023, the production of AC motors, both single-phase and multi-phase, increased by 52.4% and 71.1%, respectively, compared to 2019, but compared to 2022, a decrease was observed, which was 20.7% for single-phase motors and 10.8% for multi-phase motors.

Chart 48. Manufactured production of AC motors

In the analysed period, for most important household appliances, a decrease in production was recorded to 2019 and 2022. The largest decrease to 2019 was recorded for gas cookers with an oven by 56.2%, and the smallest for refrigerators and freezers, including combined refrigerators-freezers by 0.3%. Compared to 2022, the largest decrease was observed for domestic electric hobs for building-in (by 20.6%) and the smallest for refrigerators and freezers, including combined refrigerators-freezers (by 1.6%) and that means that refrigerators and freezers achieved the smallest decrease both in relation to 2019 and 2022. In the analysed period, among the selected household appliances, there was an increase compared to 2019 only for dishwashing machines by 1.7%, while compared to 2022 only for gas cookers with an oven by 10.3%, and, as mentioned above, gas cookers had the largest drop in production in the analysed period.

Table 42. Manufactured production of selected household appliances

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Refrigerators and freezers, including combined refrigerators-freezers	1000 units	3 462	3 519	3 943	3 508	3 452	99.7	98.4
Dishwashing machines	1000 units	4 704	4 944	5 886	5 581	4 782	101.7	85.7
Automatic washing machines (including machines which both wash and dry)	1000 units	6 555	6 773	7 013	6 329	5 763	87.9	91.1
Drying machines	1000 units	3 083	3 240	3 898	3 038	2 514	81.5	82.7
Domestic electric cookers with an oven (including combined gaselectric appliances)	1000 units	1 392	1 411	1 603	1 076	906	65.1	84.2
Domestic electric hobs for building-in	1000 units	340	376	374	289	230	67.6	79.4
Domestic electric ovens for building-in	1000 units	3 132	3 066	3 787	2 812	2 415	77.1	85.9
Gas cookers with an oven	1000 units	314	264	302	125	137	43.8	110.3

The second area of production discussed in this subchapter is the production of machines and equipment, n.e.c. which comprises the production of general-purpose machinery, agricultural and forestry machinery, metal forming machinery and machine tools, and of other special-purpose machinery.

In the annual survey for 2023, 649 products from this industry were surveyed, and manufactured production was reported for 509 products. The largest share in value is of general-purpose machinery, which accounted for 65.7% of production value of the products in question in 2023.

Ball or roller bearings are a typical product included in general-purpose machinery. In the years 2019–2023, the production of bearings measured in units declined – the decrease was 17.8%. In the first year of pandemic-related restrictions – 2020 – there was a 16.6% decline in production. In the following year, production rose significantly – by 24.6%, but subsequent years brought decline. Another product classified as general-purpose machinery is fire extinguishers. The production of fire extinguishers in 2019–2023 period was subject to relatively minor changes, only in 2021 a significant increase occurred (by 19.0%) in relation to the previous year and in 2022 production decreased (by 11.4%). In 2023, production was at a level similar to 2019 – only 1.8% lower. Cash registers are also considered general-purpose machines. The main factor affecting their production volume are changes in legal regulations regarding the use of cash registers. A large increase occurred in 2021 (by 22.7%). Then, in 2022, production fell by 49.4% and in 2023 there was a further, slight decrease – to a level lower by 42.7% than at the beginning of the analysed period.

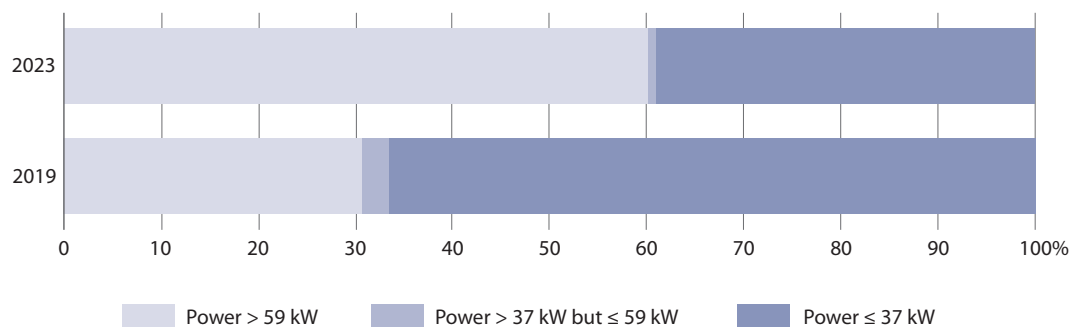
Table 43. Manufactured production of selected items of general-purpose machinery

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Ball or roller bearings	1000 units	203 573	169 687	211 479	199 511	167 377	82.2	83.9
Fire extinguishers	1000 units	5 719	5 513	6 559	5 810	5 614	98.2	96.6
Cash registers	unit	291 032	274 316	336 696	170 502	166 793	57.3	97.8

Machinery for agriculture and forestry accounted for 12.1% of the sold value in 2023 of machinery and equipment discussed here.

Between 2019 and 2023, the number of agricultural tractors produced increased (by 58.7%) to 3,287 units. During this period, the structure of production changed significantly: the share of tractors with the highest engine power (exceeding 59 kW) increased from 30.7% to 60.2%, while the share of tractors with the lowest power (up to 37 kW) decreased from almost 2/3 to 39.0%. The production of tractors with medium engine power was marginal throughout the analysed period.

Chart 49. Structure of manufactured production of agricultural tractors



In 2023, a decrease in the production of many important types of agricultural machinery was recorded. A similar phenomenon occurred in the previous year, which indicates the emergence of a downward trend after years of growth. This is particularly visible in the case of production of soil cultivation machines.

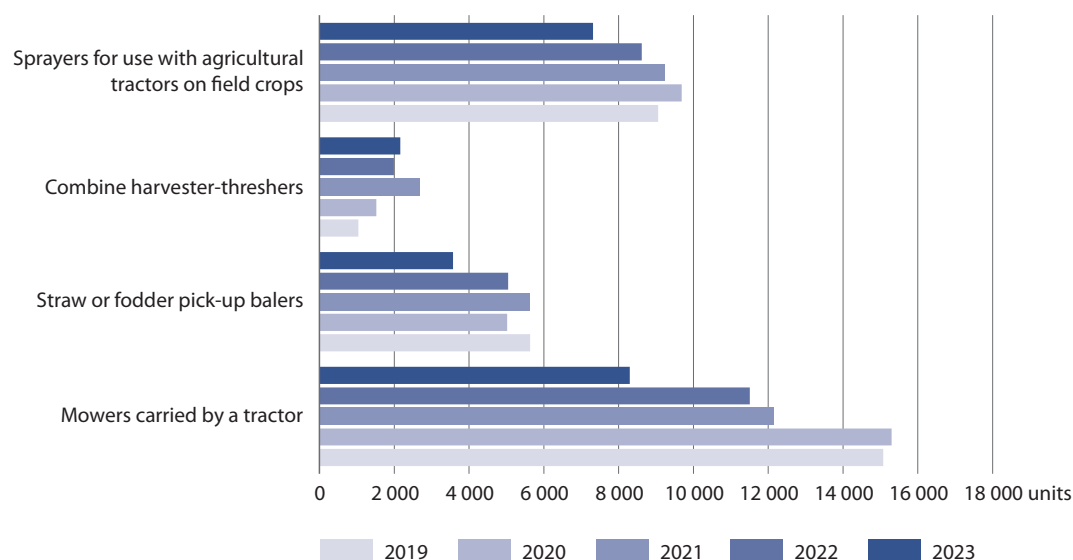
Plough production rose until 2021; in 2022 there was a decrease (by 47.9%) and in 2023 it declined further, to 49.2% of 2019 production. The production of scarifiers and cultivators changed relatively little between 2019 and 2023. In 2021, there was a clear rise (by 22.5%), but in the following years production decreased. In 2023 was higher than in 2019 (by 2.2%). The production of disc harrows increased until 2021 (in 2021 by 37.7%). In 2022 and 2023 it decreased, but nevertheless at the end of the analysed period it was higher than at its beginning by 24.1%. Similarly, in the production of field seeders rise was recorded until 2021 and then decrease in the last years of the period in question. In 2023 production was 18.1% lower than in 2019. The production of potato planters also increased until 2021 (in 2020 by 80.4%). Despite declines noted in 2022 and 2023, at the end of the analysed period production was 17.5% higher than in 2019. The way production of distributors for mineral or chemical fertiliser for soil preparation changed was different: in contrast to the other soil cultivation machines discussed, there was a significant decline in 2020 (by 45.9%). After a temporary increase in 2021, production in 2022 and 2023 declined further and in 2023 it accounted for only 41.7% of the 2019 production.

Table 44. Manufactured production of selected soil machinery

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Ploughs	unit	7 608	9 707	9 972	5 193	3 741	49.2	72.0
Scarifiers and cultivators	unit	10 028	10 221	12 520	11 304	10 246	102.2	90.6
Disc harrows	unit	4 578	5 130	7 062	6 189	5 683	124.1	91.8
Field seeders	unit	4 611	5 698	6 406	4 875	3 778	81.9	77.5
Potato planters	unit	1 989	3 588	4 084	3 105	2 321	117.5	74.8
Distributors for mineral or chemical fertiliser for soil preparation	unit	9 717	5 260	6 496	5 497	4 050	41.7	73.7

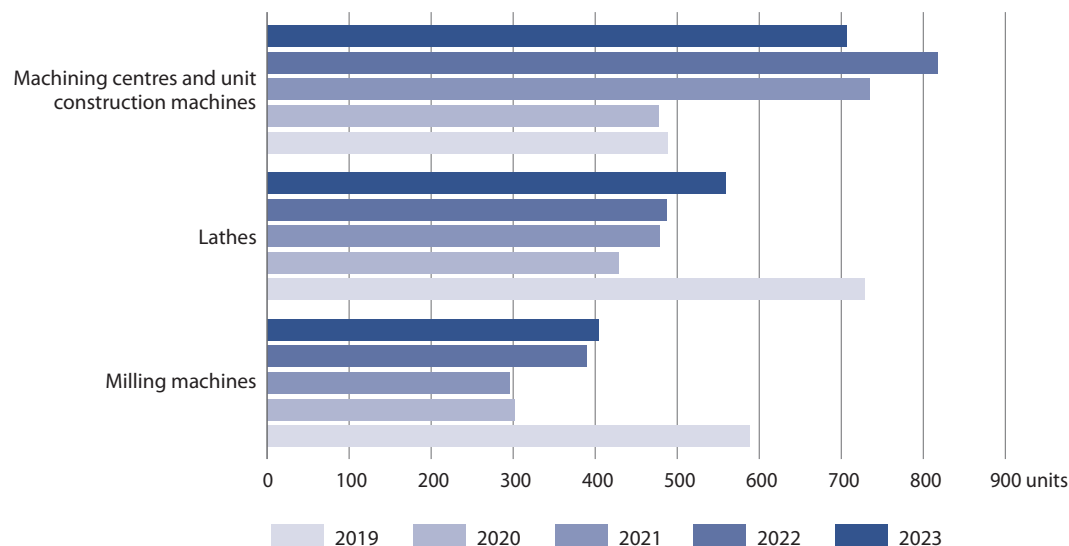
The production history in the analysed period of sprayers and selected harvesting machines was more diverse than that of soil cultivation machines.

The production of sprayers for use with agricultural tractors on field crops, after an increase in 2020, systematically declined and decreased throughout the discussed period (by 19.3%). The production of combine harvester-threshers more than doubled during this period – it rose by 108.0%. The highest level (2,688 units) reached in 2021. Production of straw or fodder pick-up balers decreased slightly in 2020, in 2021 returned to a level similar to 2019 and declined in the following years. In 2023 reached 63.4% of the 2019 level. The production of mowers carried by a tractor, after a slight rise recorded in 2020, decreased significantly in 2021; another substantial reduction occurred in 2023. As a result, production decreased throughout the analysed period (by 45.0%).

Chart 50. Manufactured production of selected mowers, harvesting machinery and sprayers

Another group of machinery is machine tools; the production of machine tools in 2023 accounted for 4.1% of the value of production of machinery and equipment discussed here.

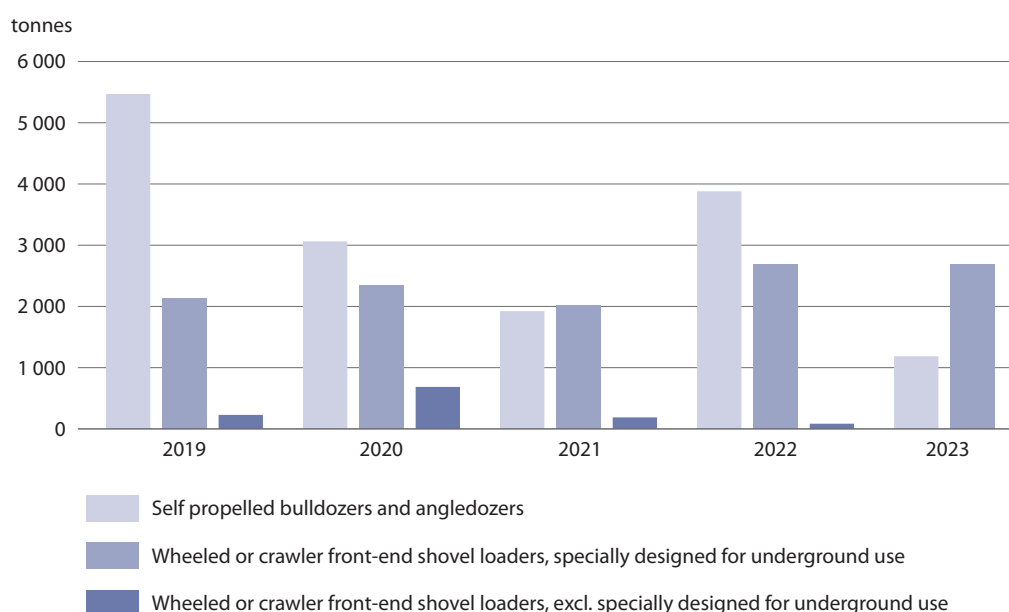
The production of machining centres and unit construction machines for working metal increased in the period under review. In 2020, it was slightly lower than in 2019, in 2021 it rose significantly (by 54.1%), in 2022 increased further, and in 2023 production declined but remained at a level higher by 44.9% than at the beginning of the period under review. In the production of lathes for removing metal, in the first year of the pandemic (2020) there was a significant drop (by 41.1%). Increase was recorded in the following years, but in 2023 production was at a level lower than in 2019 (by 23.2%). The production of milling machines for working metal also decreased very significantly in 2020 (by 48.6%), and despite a considerable rise in 2022 (by 31.8%), in the last year of the analysed period it remained lower than in 2019 (by 31.3%).

Chart 51. Manufactured production of selected machine tools for working metal

The production of other special-purpose machinery accounted in 2023 for 18.1% of the value of sold production of machinery and equipment discussed here.

Construction and road building machinery and equipment are categorised as special-purpose machinery. Their production, measured in tonnes, in subsequent years has been characterized by significant variability. In bulldozers and angledozers production there was a significant decline in the years 2020 and 2021. In 2022, production more than doubled compared to the previous year. Then, in 2023, production fell to 1,187 tonnes (level 78.3% lower than in 2019). Production of wheeled or crawler front-end shovel loaders specially designed for underground use increased slightly in 2020, declined by 13.6% in 2021, then rose significantly in 2022 (by 32.4%) and continued to increase in 2023, reaching a level 26.6% higher than at the beginning of the analysed period. Production of wheeled or crawler front-end shovel loaders other than specially designed for underground use, after a significant rise in 2020 (by 199.6%), dropped in 2021 and further declined in 2022. In 2023, production of this kind of machines was not recorded.

Chart 52. Manufactured production of selected machinery and equipment for construction and road building

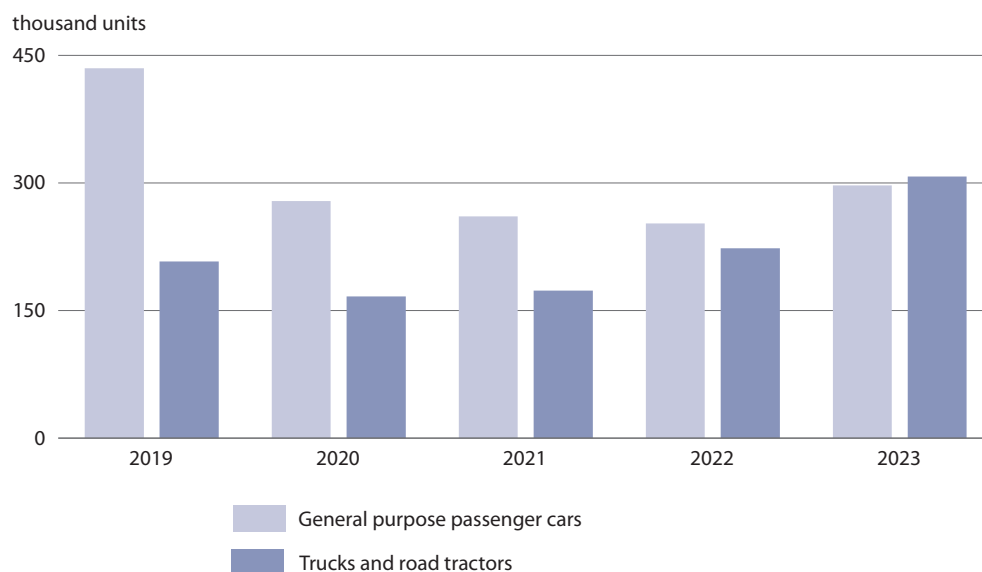


2.11. Transport equipment

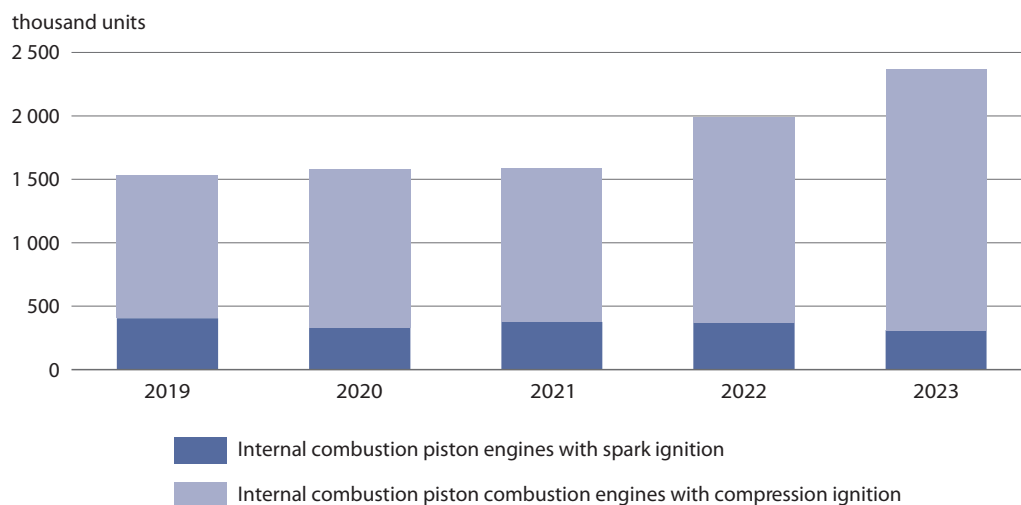
In the Motor vehicles, trailers and semi-trailers division, 102 products were surveyed, of which production data were reported for 84. In the division Production of other transportation equipment 130 products were surveyed and data were reported for 71.

In 2023, the downward trend in passenger car production, which had been in force for several years, was reversed and production increased (by 17.7%) compared to the previous year. In 2023, the production of electric motor vehicles was reported in more significant quantities for the first time (22.1 thousand units).

The growth in trucks production from previous years was maintained. Their production in 2023 increased by 37.8% to 308.6 thousand units and for the first time exceeded the production of passenger cars, of which 297.1 thousand were produced.

Chart 53. Manufactured production of passenger cars and trucks road tractors

In 2023, as in previous years, the production of car engines increased, which was primarily related to the increase in the production of compression-ignition engines (diesel engines) used in trucks. A slight decline in the production of spark-ignition engines was noted.

Chart 54. Manufactured production of internal combustion engines for motor vehicle

In 2023, compared to the previous year, the production of motor vehicles for the transport of 10 or more people (buses) increased slightly – by 1.4%. Bus production in 2023 was similar to that recorded in 2022 (slightly exceeded 5,000 units), however within the analysed period of 2019–2023 its structure changed: the number of manufactured buses with combustion engines decreased, including buses with diesel engines of a cylinder capacity more than 2500 cm³ (by 59.4%) and buses with spark-ignition engines of cylinder capacity more than 2800 cm³ (by 55.8%), while production increased of buses with electric motor drawing energy from on-vehicle battery (by 382.4%) and of hybrid (465.6%)

Table 45. Manufactured production of motor vehicles for the transport of 10 or more persons (buses)

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Motor vehicles for the transport of 10 or more persons (buses)	unit	7 358	6 037	5 250	5 089	5 160	70.1	101.4
buses with diesel engine of a cylinder capacity more than 2500 cm ³	unit	2 388	2 006	1 252	1 310	969	40.6	74.0
buses with a spark-ignition engine of cylinder capacity not more than 2800 cm ³	unit	–	–	18	25	28	–	112.0
buses with a spark-ignition engine of cylinder capacity more than 2800 cm ³	unit	4 349	2 727	3 213	2 611	1 922	44.2	73.6
buses with hybrid powered electric motor (electric motor + internal combustion engine)	unit	195	717	252	514	1 103	565.6	214.6
buses with battery powered electric motor	unit	153	457	396	491	738	482.4	150.3
buses with electric motor powered from overhead contact line (trolley buses)	unit	261	130	119	72	203	77.8	281.9

Pleasure and sports boats have been a Polish specialty for some time now, gaining popularity at home and abroad (their share in the value of EU27 production in 2023 was approx. 6%). Production of pleasure and sports boats declined compared to 2022, but still remained at a relatively high level.

Table 46. Manufactured production of pleasure and sports boats

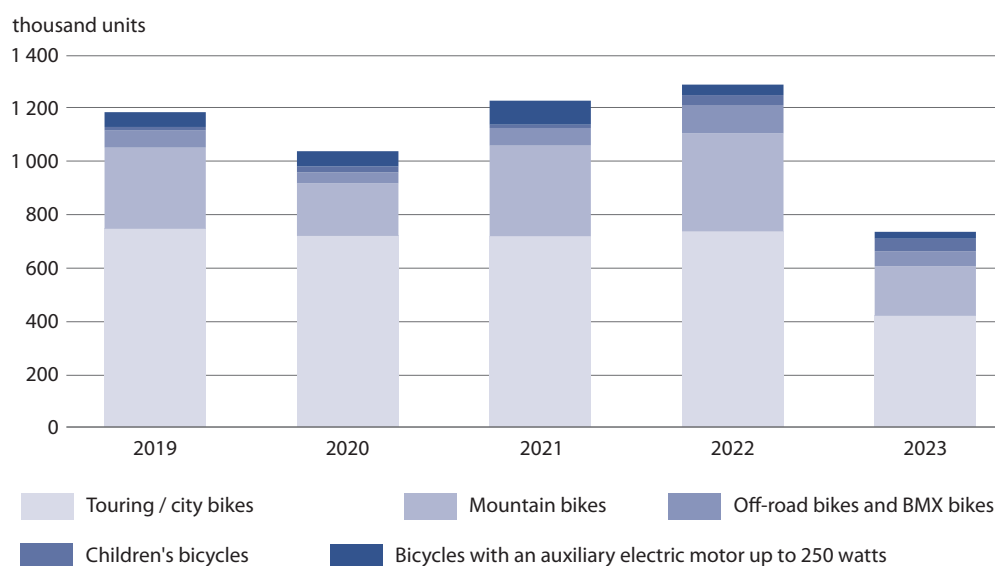
Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Pleasure and sport boats, seagoing	unit	1 886	2 279	3 251	3 227	2 562	135.8	79.4
Pleasure and sport boats, other	unit	5 665	4 316	5 023	5 341	4 514	79.7	84.5

In the production of rolling stock in Poland, combined multiple units (classified as self-propelled passenger cars) dominate – their production increased in the analysed period. The production of locomotives remains low; after a drop in 2021–2022 – it increased significantly in 2023 compared to the previous year (by 341.7%). The production of freight wagons, after a decline in 2020–2021, increased significantly in 2022 and in 2023 (by 25.6% compared to 2022). Also in the case of passenger coaches not self-propelled, the lowest level of production was recorded in 2021 (a drop from 1,206 to 8 units). In 2023, their production amounted to 287 units.

Table 47. Manufactured production of railway rolling stock

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Electric locomotives	unit	19	61	23	12	53	278.9	441.7
Passenger cars, freight or transport wagons, railway or tramway, self-propelled	unit	573	616	652	675	709	123.7	105.0
Railway or tram passenger coaches, not self-propelled	unit	412	1 206	8	147	287	69.7	195.2
Railway or tram freight wagons, not self-propelled	unit	3 032	1 884	1 683	2 275	2 858	94.3	125.6

Bicycle production in 2023 dropped significantly compared to the previous year (by 37.2%), after growth years 2021–2022. The largest decrease compared to 2022 was recorded for mountain bikes (by 49.6%) and for touring/city bikes (by 43.2%). The decrease in total production of bicycles was mainly influenced by touring bikes, which had share of 50.0% in total bicycle production in 2023. Only the production of children's bikes increased, but their share in bicycle production was small (5.6%).

Chart 55. Manufactured production of bicycles

2.12. Furniture industry products

Products classified in the Furniture section include furniture manufactured from a variety of materials, including wooden furniture, metal furniture, plastic furniture for both residential and office and store furnishings, in addition, furniture parts and mattresses.

In the annual survey for 2023, 36 products were included in the statistical observation, and for all of them, manufactured output was reported.

During the 2019–2023 analysis period, the production of manufactured wooden furniture was variable. The largest decrease in production among wooden furniture compared to 2019, was recorded for wooden kitchen furniture for fitted kitchen (by 30.9%), a much smaller decrease was recorded for the production of wooden furniture of a kind used in offices (by 6.4%). The largest increase in production compared to 2019 occurred in the assortment group of wooden furniture used in dining-rooms and living-rooms (by 13.7%), the output produced reached 37,305 thousand units. In the case of wooden furniture for bedrooms, production increased by 3.5% compared to 2019.

In 2023, an increase in production was recorded for wooden furniture for bedrooms and for wooden furniture of a kind used in offices, compared to the previous year. Production of wooden furniture for bedrooms increased by 4.3% compared to 2022, while an increase of 16.6% was recorded for the production of wooden furniture, of the kind used in offices. Decreases in production in 2023 compared to the previous year occurred for wooden kitchen furniture for fitted kitchen and wooden furniture for the dining-rooms and living-rooms, by 11.1% and 4.9%, respectively.

Table 48. Manufactured production of wooden furniture

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Wooden kitchen furniture for fitted kitchen	1000 units	1 588	1 266	1 131	1 235	1 098	69,1	88,9
Wooden furniture for bedroom	1000 units	7 609	7 142	8 053	7 557	7 878	103,5	104,3
Wooden furniture for the dining-room and living-room	1000 units	32 814	32 073	33 703	39 226	37 305	113,7	95,1
Wooden furniture of a kind used in offices	1000 units	3 971	3 890	4 404	3 188	3 719	93,6	116,6

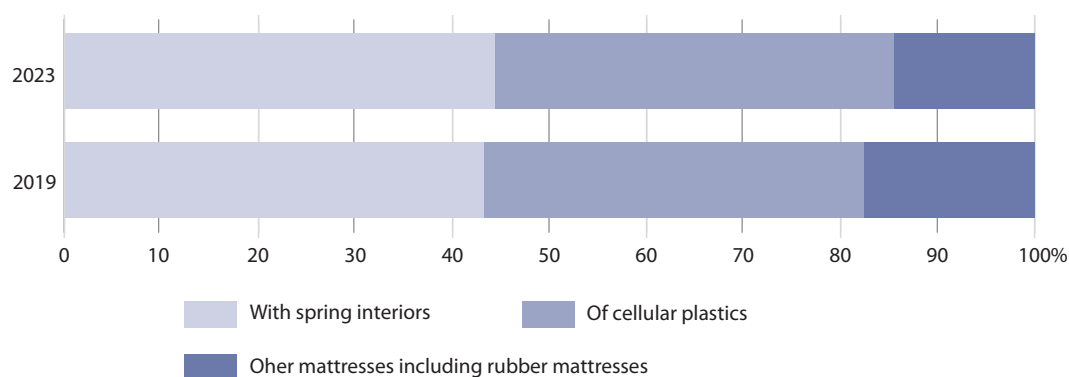
The production of furniture of plastic fluctuated in 2019-2023. Declines were recorded only for 2020 and 2021, by 3.3% and 25.3%, respectively. In 2023, the production of plastic furniture amounted to 3,784 thousand units and dropped by 12.3% compared to 2019, and by 9.7% compared to 2022. In 2022, an increase by 34.5% was recorded compared to 2021.

Metal furniture production had a downward trend in the analyzed period. Only in 2022, compared to 2021, a slight increase by 2.0% was recorded. In 2023, compared to 2019, production decreased (by 57.8%). The largest decrease in production compared to the previous year was recorded in 2021 (by 40.3%). The production volume amounted to 3,886 thousand units.

Table 49. Manufactured production of metal furniture and plastic furniture

Specification	Unit	2019	2020	2021	2022	2023	2023	
							2019=100	2022=100
Metal furniture	1000 units	8 438	6 511	3 886	3 966	3 565	42,2	89,9
Furniture of plastics	1000 units	4 316	4 171	3 117	4 192	3 784	87,7	90,3

In 2023, manufactured production of mattresses amounted to 13,917 thousand units, down 4.9% from the previous year and 26.6% from 2019. The largest production in 2023 was observed for mattresses with spring interiors – 6,186 thousand units, and their share in manufactured production was 44.4%. The second place was occupied by cellular plastic mattresses – 41.1%, with a production share of 5,718 thousand units. Other mattresses, including rubber mattresses, accounted for the smallest share of manufactured production – 14.5%, and their production reached 2,013 thousand units.

Chart 56. Structure of manufactured production of mattresses

2.13. Secondary raw materials

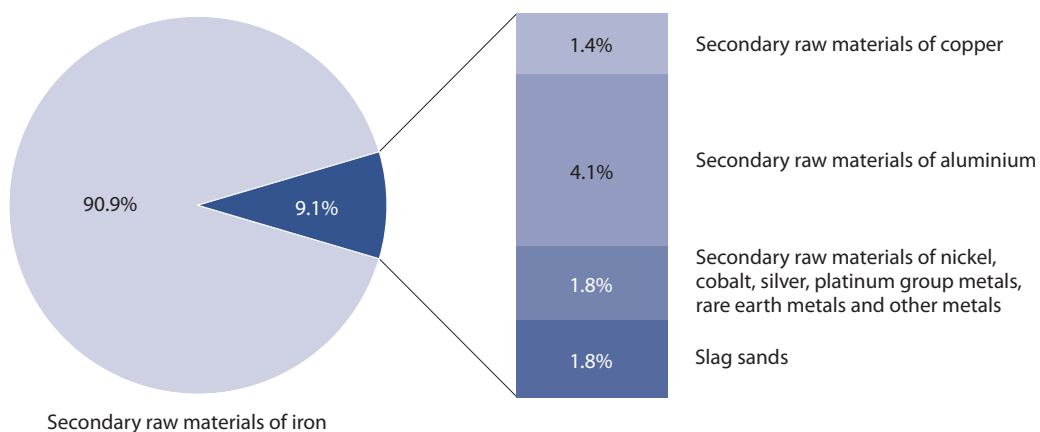
Secondary raw materials are playing an increasingly important role in the economy due to limited availability in the natural environment or disruptions in supply chains (e.g. the COVID-19 pandemic, the war in Ukraine). Growing ecological awareness, including the pursuit of a circular economy, and the involvement of enterprises in corporate social responsibility activities – protecting natural resources and generating the least amount of non-reusable waste possible – are also playing an increasingly important role.

The recovery of secondary raw materials in the processing industry was included in statistical observation in the survey of product manufacturing in 2019. In 2020, secondary raw materials from wood were added to the scope of the survey, while in 2022, a division of metallic raw materials into types of recovered metal was introduced.

In the structure of recovery of secondary raw materials from metals in 2023, as in the previous year, secondary raw materials from iron and ferrous metals dominated. The recovery of other metallic raw materials accounted for only 9.1%. In 2023, the recovery of secondary raw materials from iron and ferrous metals fell by 19.4%, which was reflected in the recovery structure – a decrease in the share by 5.7 p.p. compared to the previous year. Among the other secondary metallic raw materials, secondary raw materials from aluminium dominated, the recovery of which increased by 20.8% compared to 2022.

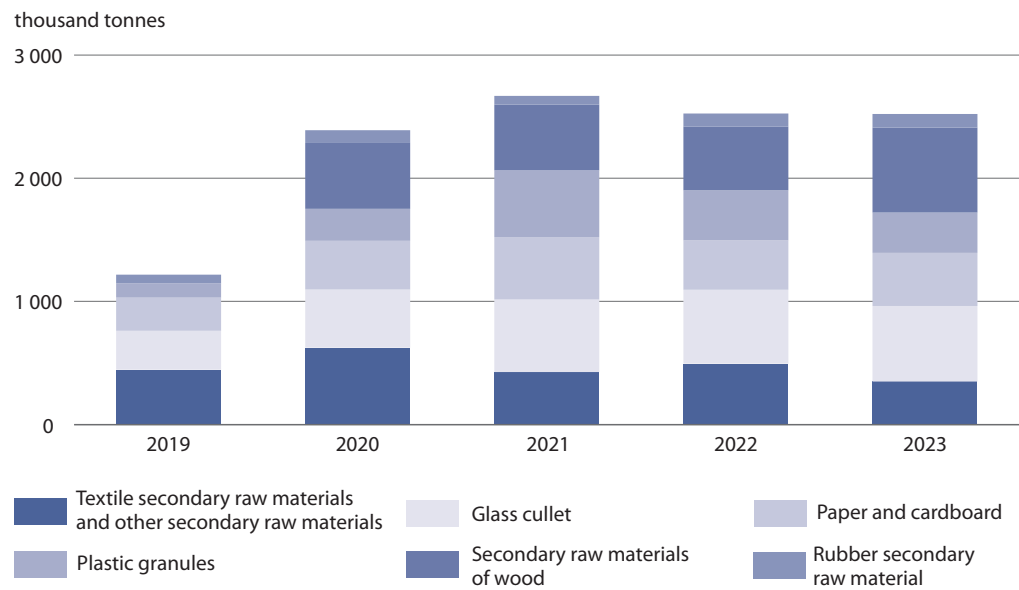
Table 50. Recovery of selected metallic secondary raw materials

Specification	Unit	2022	2023	2022=100
Secondary raw materials of iron and ferrous metals	tonnes	1 197 682	965 076	80.6
Secondary raw materials of copper	tonnes	15 711	15 318	97.5
Secondary raw materials of nickel	tonnes	214	351	164.0
Secondary raw materials of aluminium	tonnes	35 904	43 370	120.8
Secondary raw materials of other metals	tonnes	28 517	16 351	57.3
Slag sands	tonnes	23 618	19 438	82.3

Chart 57. Recovery of metallic secondary raw materials in 2023

In the recovery of non-metallic secondary raw materials, a clear upward trend was observed until 2021 – from 1.22 million tonnes in 2019 to 2.67 million tonnes in 2021, while in 2022 there was a slight decrease in recovery – by 2.1%. In 2023, recovery was at a level similar to the previous year and amounted to 2,505 thousand tonnes.

In 2023, the recovery structure in this group of secondary raw materials was still dominated by wood secondary raw materials – 22.4%, followed by glass cullet – 19.7%. A significant decrease in recovery compared to 2022 was recorded for plastic granulates (by 19.7%) and other secondary raw materials (by 29.7%).

Chart 58. Recovery of non-metallic secondary raw materials

Data on secondary raw materials of wood available since 2020.

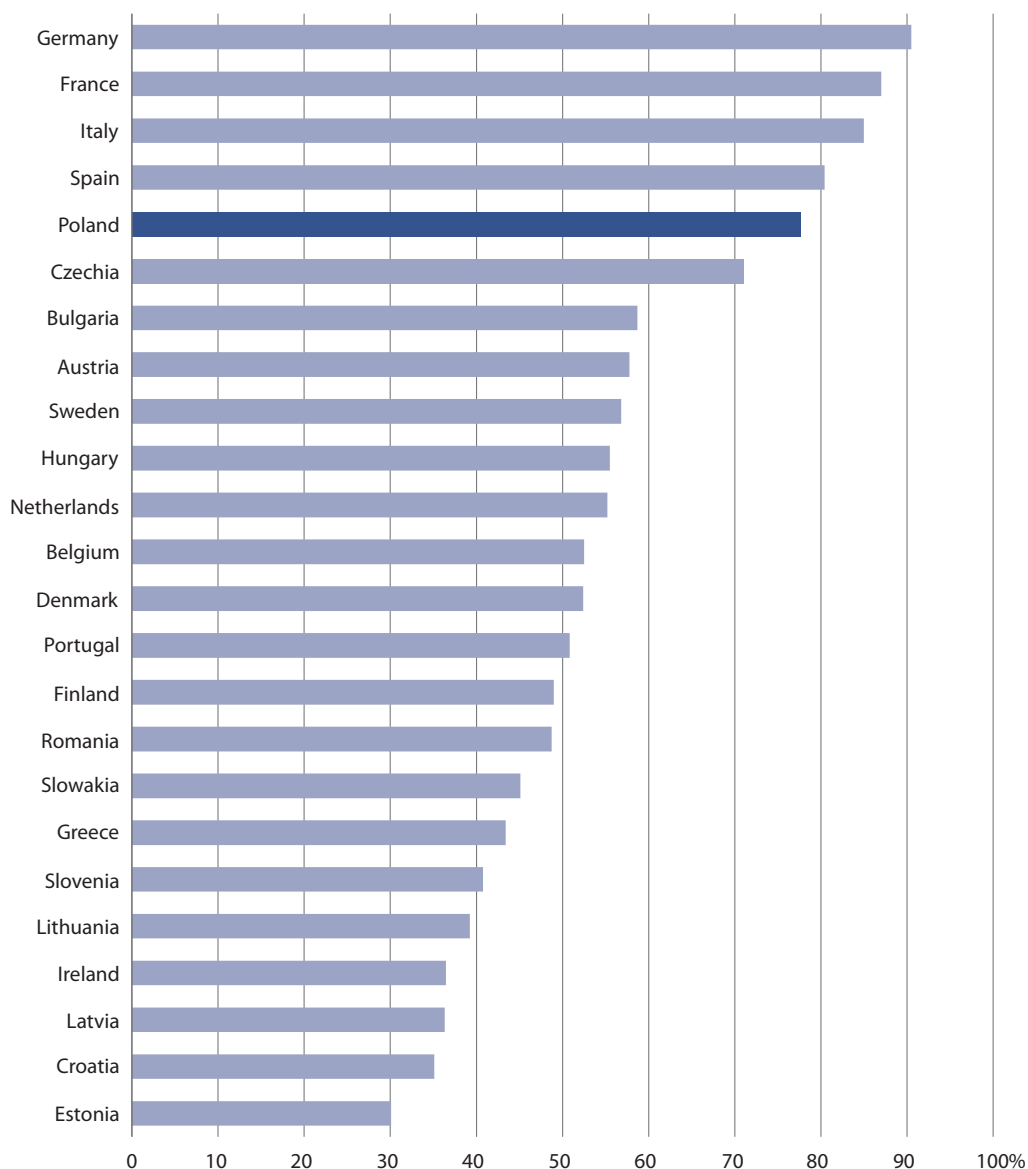
Chapter 3. Production of industrial products in Poland compared to other European Union countries

The PRODCOM Community Survey of industrial production provides information on the production of manufactured goods and services by enterprises located in the national territory. It is conducted on the basis of the PRODCOM List, which includes products from the Mining and quarrying products and Manufactured products sections. From 2019, it also includes two groups of secondary raw materials: metallic and non-metallic from the Water supply, sewerage, waste management and remediation services section. The PRODCOM list is based on the EU product classification CPA and is linked to the Combined Nomenclature (CN). The PRODCOM survey is annual and covers a slightly narrower range of products than the industrial products production survey conducted in Poland, which also takes into account the information needs of national users. Energy raw materials are excluded from the PRODCOM List, while the Coke and refined petroleum products section excludes important products, among others: coke from coal and fuels and oils derived from petroleum. For almost all products on the PRODCOM List, production sold is surveyed, while the volume of production manufactured is only surveyed for a limited number of products. The source of PRODCOM data is surveys conducted in particular countries; these surveys are designed to provide comparable results. From the reporting year 2021 onwards, in the PRODCOM surveys there is separately covered sold production that was carried out on own account and subcontracted production. The data presented below refer to total production: on own account and subcontracted.

The PRODCOM Community Survey of industrial production is conducted on the basis of the PRODCOM List which in 2023 contained 3,950 items covering products or homogeneous product assortment groups. Three European Union member states did not participate in the survey: Cyprus, Luxembourg and Malta, which are exempted from transmitting production data due to the small share of their manufacturing in the European Union economy.

In 2023, similar to 2020–2022, Poland ranked fifth, after Germany, France, Italy and Spain, in terms of the number of PRODCOM items for which sold production was reported. Czechia ranked sixth. In 2019, the final year of the UK's participation in the PRODCOM survey, Poland was in sixth place, behind the UK. In the year 2023 Poland reported sold production data for 3,141 products and product assortment groups, which constitutes 77.7% of all items covered by the survey. The highest percentage of products was reported by Germany – 90.5%. The fewest products among EU countries were reported by Croatia and Estonia, with 35.1% and 30.1% of the surveyed items respectively.

Chart 59. Percentage of PRODCOM headings for which sold production was reported for 2023 by EU countries



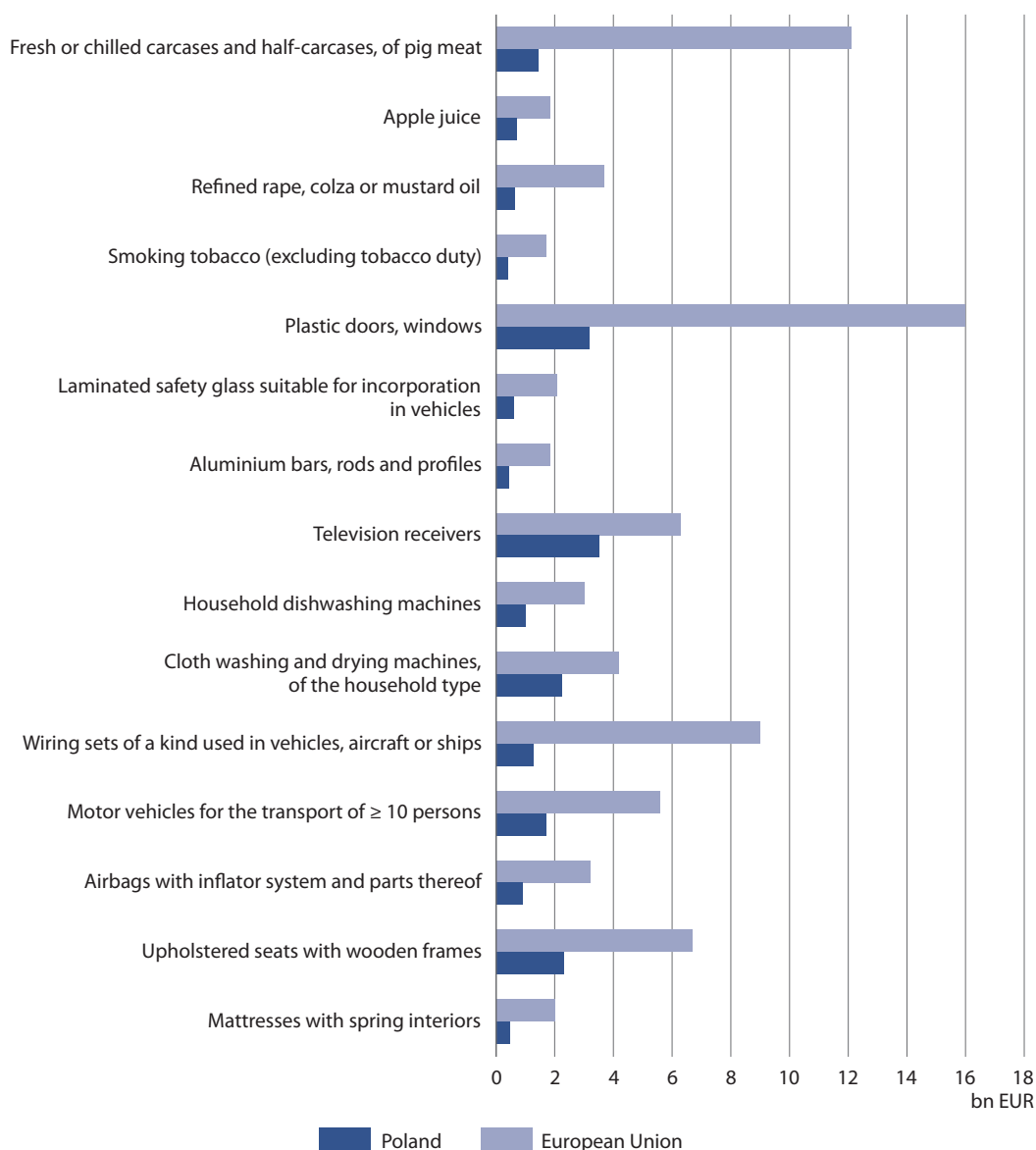
The value of sold production of all products reported by Poland in the PRODCOM survey in 2023 was 359,178.7 million EUR, which accounted for 6.0% of the value of EU27 production. The largest share of Poland in EU production was recorded in the following divisions: Tobacco products – 23.7%, Furniture – 13.5%, Electrical equipment – 10.7%, Rubber and plastic products – 9.4%, Other non-metallic mineral products and Wood and products of wood, cork and straw – 8.1% each, Food products – 7.9%, Paper and paper products – 7.6%. The lowest share in the value of sold production was recorded in the divisions: Metal ores, Pharmaceutical products and preparations.

Table 51. Sold production of products covered by PRODCOM survey by selected CPA divisions in 2023

Specification	European Union	Poland	
	in million EUR		in %
Food products	898 299.0	70 884.7	7.9
Beverages	150 197.7	7 533.6	5.0
Tobacco products	9 602.5	2 272.9	23.7
Textiles	57 731.4	2 742.0	4.7
Wearing apparel	28 162.7	1 334.3	4.7
Leather and related products	33 102.0	677.8	2.0
Wood and products of wood, cork and straw	108 303.3	8 742.2	8.1
Paper and paper products	177 257.7	13 515.2	7.6
Printing services and reproduction services of recorded media	48 121.0	2 483.0	5.2
Chemicals and chemical products	460 501.3	20 943.5	4.5
Pharmaceutical products and preparations	235 435.4	3 567.3	1.5
Rubber and plastic products	272 102.3	25 688.4	9.4
Other non-metallic mineral products	196 210.4	15 938.3	8.1
Basic metals	378 927.9	23 068.2	6.1
Fabricated metal products	437 320.6	23 118.9	5.3
Computers, electronic and optical products	203 134.6	10 086.9	5.0
Electrical equipment	298 234.9	32 000.7	10.7
Machinery and equipment	600 885.8	15 417.2	2.6
Motor vehicles, trailers and semi-trailers	773 773.2	45 430.5	5.9
Other transport equipment	160 158.6	7 015.9	4.4
Furniture	84 245.3	11 393.8	13.5
Other manufactured goods	93 724.2	3 201.7	3.4
Repair and installation services of machinery and equipment	210 596.5	9 455.6	4.5
Waste collection, treatment and disposal services; materials recovery services	22 607.8	767.1	3.4

In 2023, for 389 products, Poland's share in European Union sold production in value terms ranged from 10.1% to 20.0%. The largest number of products with a share between 10.1% and 20.0% was recorded in the divisions: Food products – 60 products, Chemicals and chemical products – 35, Machinery and equipment – 32, Fabricated metal products and Rubber and plastic products – 31 products each.

Poland's share of over 20% in the value of production sold in the European Union was recorded for 237 products, including television receivers (55.5%), cloth washing and drying machines, of household type (53.5%), apple juice (37.4%), upholstered seats with wooden frames (34.8%), household dishwashing machines (33.8%), laminated safety glass suitable for incorporation in vehicles (28.9%), smoking tobacco (excluding tobacco duty) (24.1%).

Chart 60. Sold production value of selected products in Poland and in the European Union in 2023

Poland's share of the European Union's sold production in volume terms was distributed slightly differently than in value terms. In 2023, for 346 products Poland had a share of between 10.1% and 20.0% in the volume of production sold in the European Union. Most products were classified in the divisions: Food products – 61 products, Chemicals and chemical products – 34, Rubber and plastic products – 29, Machinery and equipment and Basic metals – 27 products each, Electrical equipment – 25 products.

For 298 products, a share of more than 20% in the volume of EU27 sold production was recorded, of which 71 products had a share exceeding 50%, including raw sugar, desktop computers, television receivers, medium density fibreboard (MDF) of a thickness not exceeding 5 mm, candles, household dishwashing machines, cloth washing and drying machines, of household type.

Table 52. Number of products with percentage of more than 10% in EU volume of sold production in 2023

Specification	10.1%–20.0%	20.1%–30.0%	30.1%–40.0%	40.1%–50.0%	>50.0%
Metal ores	0	0	0	0	0
Other products of mining and quarrying	3	2	2	2	1
Food products	61	18	13	4	6
Beverages	2	2	0	0	0
Tobacco products	1	1	1	1	0
Textiles	11	5	1	1	4
Wearing apparel	17	2	1	0	1
Leather and related products	3	2	0	2	1
Wood and products of wood, cork and straw	12	1	0	1	3
Paper and paper products	19	2	1	4	2
Chemicals and chemical products	34	11	4	1	8
Pharmaceutical products and preparations	0	0	0	0	0
Rubber and plastic products	29	9	2	2	3
Other non-metallic mineral products	13	12	5	1	3
Basic metals	27	10	7	3	3
Fabricated metal products	24	9	3	4	3
Computers, electronic and optical products	8	5	1	2	8
Electrical equipment	25	15	3	4	11
Machinery and equipment	27	14	6	0	6
Motor vehicles, trailers and semi-trailers	9	8	1	1	1
Other transport equipment	9	0	0	0	1
Furniture	3	4	1	3	3
Other manufactured goods	9	3	2	1	4
Waste collection, treatment and disposal services; materials recovery services	0	0	0	0	0

In 2023, of the five EU member states reporting production for the largest number of PRODCOM items, Poland accounted for the largest share of EU sold production volume of, among others: medium density fibreboard (MDF) of a thickness not exceeding 5 mm (62.1%), mattresses of cellular plastics (47.3%), granite, crude or roughly trimmed (44.5%), fish fillets, dried, salted or in brine, but not smoked (43.3%), frozen cuts of turkey (38.0%), apple juice (35.3%), plastic baths, showers-baths, sinks and wash-basins (24.5%), liquid dielectric transformers having a power handling capacity ≤ 650 kVA (23.8%), limestone, dolomite and other calcareous stone, broken or crushed (21.0%), containers for compressed or liquefied gas, of metal (19.5%).

Table 53. Share in EU sold production volume of selected products of five selected EU member states in 2023

Specification	France	Spain	Germany	Poland	Italy
	in %				
Granite, crude or roughly trimmed	.	9.6	0.2	44.5	1.6
Limestone, dolomite and other calcareous stone, broken or crushed	14.2	5.8	10.0	21.0	0.8
Fresh or chilled carcasses, halfcarcasses and quarters with bone in, of beef and veal	10.8	16.9	18.5	10.5	18.9
Frozen cuts of turkey	19.4	12.2	5.2	38.0	7.2
Fish fillets, dried, salted or in brine, but not smoked	1.6	11.3	0.8	43.3	11.7
Apple juice	9.8	.	29.5	35.3	4.8
Frozen vegetables and mixtures of vegetables, uncooked or cooked by steaming or boiling in water (excluding potatoes)	12.0	20.9	3.6	12.2	8.8
Refined rape, colza or mustard oil	7.8	.	40.3	15.1	.
Milk and cream of a fat content of > 6% but ≤ 21%, not concentrated and nor sweetened	29.6	6.7	.	16.4	4.2
Butter of a fat content by weight ≤ 85%	19.1	.	24.8	13.6	3.6
Fresh cheese (unripened or uncured cheese)	11.8	.	23.3	13.1	22.2
Groats and meal of cereals (excluding wheat)	13.3	19.3	6.8	22.5	.
Uncooked pasta, containing eggs	3.5	0.8	11.7	5.6	63.2
Toffees, caramels and similar sweets	1.1	1.9	.	18.3	28.9
Herbal Infusions; incl. bark of African cherry (Prunus africana)	1.2	2.7	.	10.9	4.8
Prepared feeds for poultry (excluding premixtures)	17.4	11.1	14.0	15.6	8.8
Vodka of an alcoholic strength by volume of ≤ 45.4 %	10.3	1.5	.	29.6	5.3
Track-suits, of knitted or crocheted textiles	1.2	53.8	0.5	12.6	7.6
Medium density fibreboard (MDF) of a thickness not exceeding 5 mm	.	10.0	10.8	62.1	0.4
Windows, french windows and their frames, of wood	.	1.6	11.1	15.5	10.6
Corrugated paper and paperboard in rolls or sheets	5.9	.	.	13.9	31.8
Mineral or chemical fertilisers containing the three fertilising elements nitrogen, phosphorus and potassium	.	22.5	.	8.9	3.6
Biodiesel and mixtures thereof, not containing or containing < 70 % by weight of petroleum oils or oils obtained from bituminous minerals	.	11.4	26.9	7.5	9.8

Table 53. Share in EU sold production volume of selected products of five selected EU member states in 2023 (dok.)

Specification	France	Spain	Germany	Poland	Italy
	in %				
Plastic baths, shower-baths, sinks and wash-basins	4.3	21.9	10.2	24.5	10.8
Plastic doors, windows and their frames and thresholds for doors	.	3.0	22.7	20.2	6.7
Multiple-walled insulating units of glass	21.3	9.3	18.3	16.9	4.8
Portland cement	.	13.9	9.4	11.4	13.9
Containers for compressed or liquefied gas, of metal	3.6	3.5	9.9	19.5	30.1
Liquid supply or production meters	.	2.1	9.8	8.4	41.6
Liquid dielectric transformers having a power handling capacity ≤ 650 kVA	11.4	17.0	6.8	23.8	6.6
Fire extinguishers	.	7.9	6.7	22.1	29.8
Refrigerated show-cases and counters, excluding for frozen food storage	.	31.9	2.5	6.3	6.5
Disc harrows	.	3.6	9.8	28.0	3.7
Containers for carriage, including containers for transporting fluids	9.5	5.0	.	19.8	8.9
Mattresses of cellular plastics	.	6.0	15.3	47.3	1.9

Methodological notes

The data were compiled on the basis of a annual survey of production of industrial products on the P-01 form "Questionnaire on production". In case of electricity and thermal energy from steam or hot water, the data are derived from specialist surveys conducted by Minister responsible for energy and the President of Energy Regulatory Office. The survey of the production of industrial products is carried out in accordance with the requirements of the Community industrial production survey PRODCOM.

Data are collected according to groupings indicated in the PRODPOL nomenclature for annual surveys in the reporting year. The nomenclature is based on the Polish Classification of Goods and Services (PKWiU 2015) introduced on January 1, 2016 for use in statistics, registration, documentation and accounting, and also in official registers and public administration information systems (Regulation of the Council of Ministers of 4 September 2015, Journal of Laws, item 1676) and on the PRODCOM List used in the European Union. For longer time series, the data has been obtained thanks to the use of keys between PRODPOL nomenclatures used for subsequent reporting years

1. Subject and scope of the study

The annual survey cover legal entities, organizational units without legal personality (excluding budgetary units and establishments) and natural persons conducting business activities, having the number of persons employed 10 or more; in the field of pellet production survey covers also entities employing less than 9 people. Units producing electricity and thermal energy from steam or hot water are included in the survey regardless of the number of persons employed. The survey applies to all business entities which manufacture products specified in the PRODPOL nomenclature for a given reporting year, regardless of the kind of economic activity classified according to NACE Rev.2. The use of embedded systems in products is observed in reporting units whose predominant kind of activity is classified in Section C „Manufacturing”, with the exception of the divisions covering the food industry (NACE 10-12), the chemical and pharmaceutical industry (NACE 20-21), the manufacture of non-metallic mineral products (NACE 23), the manufacture of basic metals (NACE 24) and the jewellery, bijouterie and related products group (NACE 32.1).

The survey of production of industrial products does not include the following units:

- trade units, which ordered the manufacture of goods in a production enterprise and did not provide raw materials for the manufacture of these goods,
- running only publishing activities and not directly involved in the printing preparation process or printing process,
- engaged only in activities related to the production of films, video recordings, television programs, sound and music recordings and not directly involved in the process of reproduction of sound recordings, video recordings or reproduction of computer storage media.

The survey provides data on::

- the quantity of production of finished products manufactured on own account or under subcontracting, from material provided by the customer (subcontracting services), as of the end of the reporting year; the processing or modification of a purchased product, which did not change the characteristics of its use and purpose, is not considered as production,
- quantity and value of sold own production or output outsourced to another enterprise from materials outsourced, which were sold outside the enterprise,
- value of finished products consisted the embedded system, including the Internet of Things elements.

Sold production value at current prices without VAT includes:

- received and due amounts for sold during the year – outside the enterprise – own finished products, semi-finished products and parts of own production, resulting from multiplying the number of sold products, semi-finished products and parts by unit sales price, adjusted for due subsidies, rebates, discounts or contractual amounts due for sales,
- the value of products not included in the sale, treated equally with sales, i.e. the value of own products transferred to own retail outlets, as well as to its own catering establishments and its own warehouses,
- value of manufactured goods, treated equally with sales, i.e. products transferred free of charge to the social fund and own investments, for the purposes of representation and advertising, personal needs of the taxpayer and employees, and donations of products and services without payment.

The amount of production of industrial products is expressed in physical units of measurement. The basic principle in determining the quantity of production is its homogeneity which allows aggregation of particular product ranges.

In order to obtain comparable data on the production of industrial products, the PRODPOL nomenclature is used. It contains a list of products with the symbol and the name of the product or assortment group and assigned to them units of measure in which production should be reported. This allows the units to report the data on production of products which belong to the same category but are traded under different own names, in one PRODPOL grouping under the same name and in the same unit of measure.

The PRODPOL nomenclature is compliant at three, four, five and six-digit level with the PKWiU 2015 classification and at eight-digit level with the PRODCOM List. 10- and 12-digit groupings result from the demands reported by domestic users. The PRODPOL nomenclature is updated annually and is available on the Statistics Poland website <https://stat.gov.pl/Klasyfikacje/>.

It is very important to determine the unit of measurement for each grouping that corresponds to physical characteristics and intended use of particular type of product.

In most cases, the data is collected in the physical units of measure. For non-homogeneous product groupings, if they have at least one common feature defining their properties, conventional units of measure are used. A typical example of the use of conventional units of measure are chemical products in which the quantity is expressed in terms of pure ingredient. For groupings containing products of considerable diversity, e.g. pharmaceutical products, it is not possible to use physical units of measure. In this case, data are collected only on the value of sold production in current prices expressed in thousands zloty (PLN).

In cases where one unit of measure does not specify sufficiently the functional features of a given product as well as the volume of its production, several units of measure are used at the same time.

The annual data on the production of industrial products may be reviewed three times a year for a period of four years after the end of the reporting year. In exceptional cases, the data may be subject to revision in the long term, due to the specificity of the production of industrial products survey related to the difficulties in classifying certain products to the relevant groupings of PKWiU / PRODPOL.

2. Main definitions

Manufactured production is the result of manufacturing processes, mutually interrelated and conditioned, occurring at a given time.

Manufactured production includes the total quantity of finished products produced in the reporting period, both from manufacturer's own raw material and from raw material provided by another enterprise or individual person. It also includes the total volume of semi-finished products, parts, sets of machinery and equipment, regardless of whether they were intended for sale or to the parent company, to other plants of the same company, or intended for further processing (assembly) in the enterprise. Therefore, manufactured products include products manufactured by the enterprise, meeting certain standards, technical conditions or contractual terms concluded between the contractor and the recipient. Products

made of secondary raw material are considered as production, if they are of utility and are a direct result of the manufacturing work of the enterprise. The production also includes the so-called by-products, created in the production process simultaneously with the main product

Sold production of industrial products is the quantity and value of products of own production or production ordered in another enterprise from provided materials, sold outside of the enterprise in the reporting period, regardless of the moment of their production.

Finished products are products that are not further processed within the same enterprise in which they were produced, that means products completely finished and completed, after passing the entire production process. Finished goods should comply with certain standards, and in case of lack of such requirements – with specifications or contractual conditions concluded between the manufacturer and the recipient.

Sold production under sub-contracted operations (subcontracted production service) is the manufacture of products on order by a contractor from material entrusted by the principal, where the value of the entrusted materials must exceed 80% of the value of the materials used in production. The value of a subcontracting service is the income received from activities to produce products made on behalf of another company from materials entrusted by that company. The contractor also provides, in whole or in part, technical specifications, patterns, blanks, recipes.

Contract manufacturing from entrusted material occurs when:

- the value of entrusted material is more than 80% of the value of the materials used in production,
- entrusted material (raw material) has a lower value than 80% of the value of the materials used in production, but constitutes the basic material (raw material) for the manufacture of a new product.

Recovery means any operation, the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfill a particular function, or by which waste being prepared to fulfil that function, in the plant or in the wider economy.

Secondary raw materials – materials resulting from processing (mechanical or chemical) of production wastes, pre-sorted municipal wastes or scrap and used products, suitable for direct use in industrial production (replacing the primary raw material), not being a new final product.

The embedded system is a digital hardware consisting of a processor, memory and input-output devices (microcontroller), designed for real time control of the product which it is a part of. Personal computers, laptops, tablets, telephones and smartphones and other communication network equipment are not considered to be products containing embedded systems.

The Internet of Things element is a product with an embedded system with an Internet connection.

Entity with foreign capital is the entity in which the share of foreign capital in the basic capital is 100%.

Entity with a majority share of foreign capital **is the entity in which the share of foreign capital in the share capital in the basic capital is 50,0% – 99,9%.**

Foreign capital is the capital contributed to the unit in the form of financial resources (cash, shares, bonds), tangible fixed assets (machines, equipment, means of transport, real estate) and intangible assets (patents, licenses, etc.) by a foreign entity. A foreign entity may be: a natural person without Polish citizenship; a legal person located abroad; an organizational unit without legal personality located abroad.

The share of foreign capital in core capital is determined on the basis of an annual survey of entities with foreign capital conducted for the previous reference year.

Annex 1

Table 54. Share in value of sold production of industrial products in PKWiU divisions by the most common predominant activity of entities in 2023

Industrial activity		Non-industrial activity	
Hard coal and lignite			
Mining of coal and lignite	99.8%		
Other products of mining and quarrying			
Other mining and quarrying	82.0%	Land transport and transport via pipelines	0.8%
Manufacture of other non-metallic mineral products	9.4%	Works related to construction of civil engineering	0.5%
Manufacture of chemicals and chemical products	4.0%		
Food products			
Manufacture of food products	95.0%	Wholesale trade	1.9%
Manufacture of chemicals and chemical products	.	Retail trade	0.8%
Manufacture of basic pharmaceutical substances and medicines and other pharmaceutical products	0.3%	Crop and animal production. hunting	0.7%
Beverages			
Manufacture of beverages	85.5%	Wholesale trade	.
Manufacture of food products	8.7%	Retail trade	.
Manufacture of chemicals and chemical	.		
Textiles			
Manufacture of textiles	68.7%	Wholesale trade	3.5%
Manufacture of rubber and plastic products	13.0%	Retail trade	0.5%
Manufacture of furniture	.		
Manufacture of motor vehicles. trailers and semi-trailers excluding motorcycles	.		
Manufacture of wearing apparel	1.3%		
Wearing apparel			
Manufacture of wearing apparel	79.4%	Retail trade	12.7%
Manufacture of textiles	2.1%	Wholesale trade	3.5%
Other manufacturing	0.9%.		
Leather and related products			
Manufacture of leather and related products	90.0%	Wholesale trade	1.4%
Manufacture of textiles	.	Retail trade	0.8%
Manufacture of wearing apparel	1.5%		
Wood and products of wood and cork; articles of straw and plaiting materials			
Manufacture of wood and of products of wood and cork. straw and plaiting materials	88.1%	Wholesale trade	1.7%
Manufacture of furniture	3.8%	Construction of buildings	1.5%
Manufacture of paper and paper products	2.4%		
Paper and paper products			
Manufacture of paper and paper products	88.9%	Wholesale trade	0.8%
Printing and reproduction of recorded media	6.8%		
Manufacture of rubber and plastic products	1.1%		
Manufacture of textiles	.		

Industrial activity		Non-industrial activity	
Printing services and reproduction services of recorded media			
Printing and reproduction of recorded media	69.9%	Publishing activities	18.5%
Manufacture of rubber and plastic products	.	Advertising and market research	1.1%
Manufacture of paper and paper products	2.5%		
Chemicals and chemical products			
Manufacture of chemicals and chemical	78.2%	Wholesale trade	3.3%
Manufacture of coke and refined petroleum products	9.4%		
Manufacture of rubber and plastic products	1.8%		
Manufacture of other non-metallic mineral products	1.2%		
Manufacture of food products	0.8%		
Manufacture of basic metals	0.7%		
Pharmaceutical products and preparations			
Manufacture of basic pharmaceutical products	92.3%	Wholesale trade	..
Manufacture of food products	2.3%		
Rubber and plastic products			
Manufacture of rubber and plastic products	86.8%	Wholesale trade	1.4%
Manufacture of motor vehicles, trailers and semi-trailers	3.7%		
Manufacture of chemicals and chemical	2.2%		
Manufacture of fabricated metal products	0.8%		
Other non-metallic mineral products			
Manufacture of other non-metallic mineral products	89.6%	Works related to construction of civil engineering	2.0%
Manufacture of chemicals and chemical	2.0%	Wholesale trade	0.9%
Manufacture of rubber and plastic products	1.7%	Construction of buildings	0.7%
Other mining and quarrying	1.3%		
Basic metals			
Manufacture of basic metals	51.8%	Wholesale trade	3.9%
Mining of metal ores	.		
Manufacture of fabricated metal products	14.1%		
Waste collection, processing and neutralizing activities; materials recovery	0.9%		
Fabricated metal products			
Manufacture of fabricated metal products	72.7%	Wholesale trade	3.0%
Manufacture of basic metals	7.0%	Specialised construction activities	1.9%
Manufacture of machinery and equipment	4.1%		
Manufacture of motor vehicles, trailers and semi-trailers	3.1%		
Manufacture of rubber and plastic products	2.8%		
Manufacture of electrical equipment	1.0%		
Computers, electronic and optical products			
Manufacture of computer, electronic and optical products	86.7%	Wholesale trade	2.4%
Manufacture of electrical equipment	3.6%		
Manufacture of other non-metallic mineral products	.		
Manufacture of fabricated metal products	.		
Manufacture of motor vehicles, trailers and semi-trailers	.		
Manufacture of machinery and equipment	0.6%		

Industrial activity		Non-industrial activity	
Electrical equipment			
Manufacture of electrical equipment	80.6%	Wholesale trade	0.8%
Manufacture of motor vehicles, trailers and semi-trailers	6.7%	Specialised construction activities	0.2%
Manufacture of computer, electronic and optical products	4.7%		
Manufacture of fabricated metal products	1.9%		
Manufacture of machinery and equipment	1.5%		
Repair, maintenance and installation of machinery and equipment	1.1%		
Machinery and equipment			
Manufacture of machinery and equipment	59.9%	Wholesale trade	2.0%
Manufacture of fabricated metal products	15.3%		
Manufacture of motor vehicles, trailers and semi-trailers	13.0%		
Manufacture of computer, electronic and optical products	2.5%		
Manufacture of electrical equipment	1.8%		
Manufacture of rubber and plastic products	1.5%		
Motor vehicles, trailers and semi-trailers			
Manufacture of motor vehicles, trailers and semi-trailers	88.8%	Wholesale trade	.
Manufacture of fabricated metal products	2.7%		
Manufacture of textiles	.		
Manufacture of machinery and equipment.	1.7%		
Manufacture of rubber and plastic products	1.0%		
Other transport equipment			
Manufacture of other transport equipment	91.4%	Wholesale trade	0.2%
Manufacture of fabricated metal products	2.2%	Scientific research and development	.
Manufacture of computer, electronic and optical products	.		
Manufacture of basic metals	.		
Other manufacturing	.		
Manufacture of motor vehicles, trailers and semi-trailers	0.2%		
Furniture			
Manufacture of furniture	85.9%	Wholesale trade	0.5%
Manufacture of fabricated metal products	2.6%	Retail trade	0.4%
Manufacture of textiles	2.3%		
Manufacture of wood and of products of wood and cork	2.1%		
Manufacture of motor vehicles, trailers and semi-trailers	..		
Other manufactured goods			
Other manufacturing	76.6%	Wholesale trade	2.1%
Manufacture of rubber and plastic products	7.1%	Retail trade	0.5%
Manufacture of fabricated metal products	1.6%		
Manufacture of computer, electronic and optical products	1.3%		
Manufacture of basic pharmaceutical products	1.2%		
Manufacture of other non-metallic mineral products	.		

Annex 2

Abbreviations of descriptions of sections, divisions, products and list of measurement units

Complete name	Abbreviation
Division of NACE	
Crop and animal production, hunting, including service activities	Crop and animal production, hunting
Manufacture of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	Manufacture of products of wood, cork, straw and plaiting materials
Manufacture of basic pharmaceutical substances and medicines and other pharmaceutical products	Manufacture of pharmaceutical products
Manufacture of fabricated metal products, except machinery and equipment	Manufacture of fabricated metal products
Manufacture of machinery and equipment not elsewhere classified	Manufacture of machinery and equipment
Manufacture of motor vehicles, trailers and semi-trailers excluding motorcycles	Manufacture of motor vehicles, trailers and semi-trailers
Wholesale trade, excluding motor vehicles	Wholesale trade
Retail trade, except retail trade of motor vehicles	Retail trade
Architectural and engineering activities; technical testing and analysis	Architectural and engineering activities
Divisions of PKWiU	
Wood and products of wood and cork except furniture; articles of straw and plaiting materials	Wood and products of wood and cork; articles of straw and plaiting materials
Coke, briquette and similar solid fuels from coal or peat, and refined petroleum products	Coke and refined petroleum products
Basic pharmaceutical products, medicaments and other pharmaceutical preparations	Pharmaceutical products and preparations
Basic metals	Metals
Fabricated metal products, except machinery and equipment	Fabricated metal products
Machinery and equipment n.e.c.	Machinery and equipment
Products of PKWiU/PRODPOL	
Hard coal, excluding coal briquettes and similar solid fuels	Hard coal
Lignite, excluding coal briquettes and similar solid fuels	Lignite
Petroleum oils and oils obtained from bituminous minerals, crude	Oils from crude oil
Natural gas in liquid or gas state	Natural gas
Gravel and pebbles of a kind used for concrete aggregates, for road metalling or for railway or other ballast; shingle and flint	Gravel and pebbles
Crushed stone of a kind used for concrete aggregates, for road metalling or for railway or other ballast (excluding gravel, pebbles, shingle and flint)	Crushed stone
Prepared or preserved pork meat: hams and cuts thereof (excluding prepared meals and dishes)	Prepared or preserved pork meat: hams and cuts thereof
Canned meat, canned beef, veal meat and canned edible meat offal	Canned beef and veal meat
Margarine and reduced and low fat spreads (excluding liquid margarine)	Margarine

Complete name	Abbreviation
Processed liquid milk	Milk
Butter and dairy spreads	Butter
Sugar in terms of white sugar	Sugar
Prepared feeds for farm animals: pigs	Prepared feeds for pigs
Green tea (not fermented), black tea (fermented) and partly fermented tea, in immediate packings of a content ≤ 3 kg	Tea
Prepared feeds for farm animals: cattle	Prepared feeds for cattle
Prepared feeds for farm animals: poultry	Prepared feeds for poultry
Vodka of an alcoholic strength by volume of $\leq 45,4$ %	Vodka
Mineral waters and aerated waters, unsweetened	Mineral waters not sweetened
Waters, with added sugar, other sweetening matter or flavoured, i.e. soft drinks (including mineral and aerated)	Mineral waters sweetened
Cigarettes containing tobacco or mixtures of tobacco and tobacco substitutes	Cigarettes
Men's or boys' jackets and blazers	Men's jackets
Men's or boys' suits and ensembles	Men's suits
Men's or boys' trousers, breeches, shorts, bib and brace overalls	Men's trousers
Women's or girls' jackets and blazers	Women's jackets
Women's or girls' suits and ensembles	Women's suits
Women's or girls' dresses	Women's dresses
Women's or girls' trousers, breeches, shorts, bib and brace overalls	Women's trousers
Women's or girls' skirts and skirt-trousers	Women's skirts
Men's or boys' shirts	Men's shirts
Women's or girls' blouses, shirts and shirt-blouses	Women's shirts
Women's or girls' coats, jackets, capes, suits, windbreakers and similar articles	Women's outerwear
Men's or boys' coats, jackets, capes, suits, windbreakers and similar men's or boys' products	Men's outerwear
Waterproof footwear, with outer soles and uppers of rubber or plastics, other than footwear incorporating a protective metal toe-cap	Waterproof footwear
Footwear with uppers of leather, other than sports footwear, footwear incorporating a protective metal toe-cap and miscellaneous special footwear	Footwear with leather uppers
Footwear with uppers of textile materials, other than sports footwear	Footwear with textile uppers
Medium density fibreboard (MDF), of wood or other ligneous materials, whether or not bonded with resins or other organic substances, of a thickness not exceeding 5 mm	Medium density fibreboard (MDF) of a thickness not exceeding 5 mm
Windows, french windows, of wood	Windows of wood
Selected and sorted paper and cardboard sent for reprocessing	Paper and cardboard
Cartons, boxes and cases, of corrugated paper or paperboard	Cartons, of corrugated paper or paperboard
Folding cartons, boxes and cases of non-corrugated paper or paperboard	Folding cartons, of non-corrugated paper or paper-board

Complete name	Abbreviation
Sacks and bags, with a base width ≥ 40 cm, of paper, paperboard, cellulose wadding or webs of cellulose fibres	Sacks and bags, with a base width ≥ 40 cm
Sacks and bags of paper, paperboard, cellulose wadding or webs of cellulose fibres (excluding those with a base width ≥ 40 cm)	Sacks and bags, excluding those with a base width ≥ 40 cm
Sanitary towels, tampons and similar articles of paper pulp, paper, cellulose wadding or webs of cellulose fibres	Sanitary towels, tampons and similar articles of paper
Napkins and napkin liners for babies and similar sanitary articles of paper pulp, paper, cellulose wadding or webs of cellulose fibres, (excluding toilet paper, sanitary towels, tampons and similar articles)	Napkins and napkin liners for babies
Coke and semi-coke obtained from coal, lignite, peat; retort carbon	Coke
Mineral or chemical fertilisers containing the three fertilising elements nitrogen, phosphorus and potassium (excluding those in tablets or similar forms, or in packages with a gross weight of ≤ 10 kg)	Mineral or chemical fertilisers containing the three fertilising elements nitrogen, phosphorus and potassium
Plastics in primary forms	Plastics
Polymers of styrene, in primary forms	Polystyrene
Polypropylene, in primary forms	Polypropylene
Insecticides prepared in forms or packages for retail sale or in the form of preparations and articles	Insecticides
Herbicides prepared in forms or packages for retail sale or in the form of preparations and articles	Herbicides
Anti-sprouting products and plant growth regulators put up in forms or packings for retail sale, or in the form of preparations or articles	Anti-sprouting products and plant growth regulators
Fungicides prepared in forms or packages for retail sale or in the form of preparations and articles	Fungicides
Soap, organic surface-active products and preparations used as soap	Soap
Soap in forms excluding bars, cakes or moulded shapes, paper, wadding, felt and non-wovens impregnated or coated with soap/detergent, flakes, granules or powders	Soap in other forms (pastes, liquids, pieces of paper or cloth saturated with soap, etc.)
Plates, sheets, film, foil and strip, of polymers of ethylene, non-cellular, not reinforced, laminated	Plates, sheets, film, foil and strip, of polymers of ethylene, non-cellular
Plates, sheets, film, foil and strip, of polymers of propylene, non-cellular, not reinforced, laminated	Plates, sheets, film, foil and strip, of polymers of propylene, non-cellular
Plates, sheets, film, foil and strip, of polymers of styrene, not reinforced, laminated	Plates, sheets, film, foil and strip, of polymers of styrene
Plates, sheets, film, foil and strip, of polymers of vinyl chloride, non-cellular, not reinforced, laminated	Plates, sheets, film, foil and strip, of polymers of vinyl chloride, non-cellular
Plates, sheets, film, foil, strip, of polyethylene terephthalate, non-cellular, not reinforced, laminated	Plates, sheets, film, foil, strip, of polyethylene terephthalate, non-cellular
Plastic doors, windows and their frames and thresholds for doors	Plastic doors and windows
Float glass and surface ground or polished glass, in sheets, but not otherwise worked	Float glass
Glazed ceramic flags, hearths or wall tiles (excluding double tiles of the "Spaltplatten" type, tiles specially prepared for table tops, ornamental articles and tiles intended for stoves, tiles and cubes and similar articles whose largest surface area can be enclosed in a square of side < 7 cm, stoneware and porous or fine ceramics with a face area > 90 cm ²)	Glazed ceramic flags and paving, hearth or wall tiles

Complete name	Abbreviation
Portland cement, aluminous cement, slag cement and similar hydraulic cements	Cement
Quicklime, slaked lime and hydraulic lime	Lime
Plasters consisting of calcined gypsum or calcium sulphate (including for use in building, for use in dressing woven fabrics or surfacing paper, for use in dentistry)	Plasters
Ready-mixed concrete	Ready-mixed concrete
Crude steel: unalloyed steel produced in electric furnaces	Electric non-alloy steel
Crude steel: unalloyed steel produced in a manner other than electric furnaces	Unalloyed converter steel
Crude steel: Alloy steel other than stainless steel produced in electric furnaces	Electric alloy steel
Crude steel: alloy steel other than stainless steel produced by processes other than electric furnaces	Converter alloy steel
Raw steel: stainless steel and heat-resistant steel produced in electric furnaces	Stainless steel
Flat-rolled products of iron or non-alloy steel, of a width ≥ 600 mm, simply hot-rolled, not clad, plated or coated, in coils	Products of non alloy steel, not further worked than hot rolled, of a width of ≥ 600 mm
Sheets and strips of non-alloy steel, coated with zinc	Zinc coated sheets
Copper and copper alloy bars, rods, profiles and hollow profiles (excluding bars and rods obtained by casting or sintering, copper wire rod in coils)	Copper and copper alloy bars, rods, profiles and hollow profiles
Boilers for central heating for producing hot water or low pressure steam	Boilers for central heating
Welded grill, netting and fencing manufactured from wire of a diameter of < 3 mm, including with a backing of paper as used in cementing and plastering	Welded grill, netting and fencing manufactured from wire of a diameter of < 3 mm
Woven, not welded, wire mesh, grill, netting and fencing (excluding plastic coated)	Woven, not welded, wire mesh, grill, netting and fencing
Digital automatic data processing machines, comprising in the same housing at least a central processing unit and an input and an output unit, whether or not combined	Desktop computers
Other television receivers, whether or not combined with radio-broadcast receivers or sound or video recording or reproduction apparatus n.e.c.	Television receivers
Liquid supply or production meters (including calibrated) (excluding pumps)	Liquid supply or production meters
Electricity supply or production meters (including calibrated) (excluding voltmeters, ammeters, wattmeters and the like)	Electricity meters
Household dishwashing machines	Dishwashing machines
Drying machines, of a dry linen capacity less than 10 kg	Drying machines
Domestic electric cookers with at least an oven and a hob (including combined gas-electric appliances)	Domestic electric cookers with an oven (including combined gas-electric appliances)
Machining centres, unit construction machines and multi-station transfer machines, for working metal	Machining centres and unit construction machines for working metal
Lathes for removing metal	Lathes
Motor vehicles for the transport of ≥ 10 persons	Motor vehicles for the transport of 10 or more persons
Motor vehicles for the transport of ≥ 10 persons, with compression-ignition internal combustion piston engines of a cylinder capacity $> 2500 \text{ cm}^3$	Buses with diesel engine of a cylinder capacity $> 2500 \text{ cm}^3$

Complete name	Abbreviation
Motor vehicles for the transport of ≥ 10 persons, with spark-ignition internal combustion piston engines of a cylinder capacity $> 2800 \text{ cm}^3$	Buses with spark-ignition engine of a cylinder capacity $> 2800 \text{ cm}^3$
Motor vehicles for the transport of ≥ 10 persons, with hybrid power system (with both spark-ignition or compression-ignition internal combustion reciprocating piston engine and electric motor as motors for propulsion)	Buses with hybrid propulsion (both electric motor and internal combustion engine)
Motor vehicles for the transport of ≥ 10 persons with battery-powered electric motor	Buses with battery-powered electric motor
Motor vehicles for the transport of ≥ 10 persons with electric motor powered by traction network	Buses with electric motor powered by traction network (trolleybuses)
Motor vehicles for the transport of goods with only compression-ignition internal combustion piston engine (diesel or semi-diesel)	Trucks and lorries with Diesel engine
Motor vehicles for the transport of goods with only spark-ignition internal combustion piston engine; other goods vehicles, new	Trucks and lorries with spark-ignition engine
Self-propelled railway or tramway coaches, vans and trucks, except maintenance or service vehicles	Self-propelled railway or tramway carriages
Children's bicycles – bicycles with a saddle height from the ground of more than 435 mm and less than 635 mm	Children's bicycles
Wooden furniture and furniture made of wood-based materials, of a kind used in kitchens, for fitted	Wooden kitchen furniture for fitted kitchen
Wooden bedroom furniture (excluding builders' fittings for cupboards to be built into walls, mattress supports, lamps and lighting fittings, floor standing mirrors, seats)	Wooden furniture for bedroom
Wooden furniture for the dining-room and living-room (excluding floor standing mirrors, seats)	Wooden furniture for the dining-room and living-room
Furniture of plastics (excluding medical, surgical, dental or veterinary furniture – cases and cabinets specially designed for hi-fi systems, videos and televisions)	Furniture of plastics
Metal furniture (excluding office, medical, surgical, dental or veterinary furniture; barbers' chairs – cases and cabinets specially designed for hi-fi systems, videos or televisions)	Metal furniture
Mattresses of cellular plastics (including with a metal frame) (excluding water-mattresses, pneumatic mattresses)	Mattresses of cellular plastics
Mattresses with spring interiors (excluding of cellular rubber or plastics)	Mattresses with spring interiors

List of measurement units

cm^3	cubic centimeter
hl	hectolitre
hl 100%	hectolitre of pure (100%) alcohol
hm^3	cubic hectometre
m^2	square metre
m^3	cubic metre
bn	billion (1000 mln)
mln	million
PLN	zloty
1000 t	thousand tonnes
1000 t palum	thousand tonnes of coal equivalent

Complete name	Abbreviation
1000 units	thousand units
1000 bricks	thousand bricks
1000 m ³	thousand cubic metre
1000 hl	thousand hectolitre
1000 t H ₂ SO ₄	tonne of sulphuric acid
1000 t HCl	thousand tonnes of hydrogen chloride
1000 t HNO ₃	thousand tonnes of nitric acid
1000 t NaOH	thousand tonnes of sodium hydroxide (caustic soda)
1000 t NH ₃	thousand tonnes of ammonia
1000 t P ₂ O ₅	thousand tonnes of phosphorus pentoxide
PJ	petajoule